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Executive Summary

Since 2015, UNICEF has partnered with Arm to accelerate the development of new technologies and help the most vulnerable children across the world. The combination of Arm's funding, expertise, and network of partners, alongside UNICEF's convening power and global presence, has enabled us to deliver real social value for children on a broad scale. To date, our partnership has directly benefited over 310,000 children and their families.

In 2018 (our fourth year of partnership) we agreed on an annual extension to build on the successes of the last three years, programmes such as Wearables for Good, and continue to grow our partnership. The key focus areas for this extension phase were to:

- Engage and mobilise the global tech community,
- Strengthen local tech eco-systems,
- Advocate for inclusive technology, and
- Drive employee engagement.

UNICEF convened key stakeholders on the partnership for a half-day strategy workshop and synthesised these focus areas into the new Discover - Act - Inspire strategic framework to better categories and communicate our work. This report outlines the achievements of the last 15 months (June 2018 - September 2019) under these three strategic pillars. The following is an executive summary of the achievements.

Discover

Tech Bets launched around UNGA 2018 with a joint op-ed between Arm CEO Simon Segars and UNICEF Global Executive Director Henrietta Fore. This research exposed \$2 trillion worth of opportunities in urban contexts that can help transform the lives of up to 2 billion people, and identified 6 Big Tech Bets which could deliver \$100 billion profit to the tech sector as well as improve outcomes for children and their families in rapidly urbanizing contexts. Urban Tech Bets was recognized by Fast Company as one of its World Changing Ideas 2019 and highlighted in a Forbes article with Erica Kochi.

In September 2018, UNICEF, Arm, and the Bill & Melinda Gates Foundation (BMGF) launched the Global Grand Challenges (GGC) – <u>Innovations for WASH</u> in Urban Settings, with the aim of improving access to safe, clean, affordable water in urban areas by investing in and mentoring the competition winners; with 547 proposals from 47 countries received, this round became one of its top 5 largest challenges.

UNICEF, ArmIdeas and the Arm Sustainability teams partnered to launch the ArmIdeas Sustainability Challenge in November 2018 to inspire Arm employees to invent something that addresses the Urban Tech Bets. UNICEF provided three judges, two of which joined the judging panel and secured Oscar winner and UNICEF UK Ambassador, Olivia Colman to develop an internal launch video.

Act

Together we continue to deliver direct impact on the ground through investments in relevant areas of UNICEF programmes. Our global footprint continues to expand as we now add Mongolia, Malawi, Vietnam, Brazil, and Indonesia to the countries we have invested in. These programmes will implement digitally enabled programmes that can potentially impact millions of people. From our flood modelling work leveraging drone technology in Malawi, to digital education programmes in Brazil, Indonesia and Vietnam, we continue to build on our impact for children.

Arm also supports the continued development of U-Report. The contribution from Arm has allowed us to create a new website, which acts as a platform for greater interaction between young people and the information they need to survive and thrive. The website was developed through a human-centred design process that ensured children's voices were central to the process throughout.

Inspire

UNICEF and Arm were able to showcase the partnership at a number of events throughout the reporting period to highlight the potential positive impact of technology. Together with Project Everyone and 2030Vision, we helped create a Goal Hub at CogX highlighting the Global Goals to the 20,000 attendees. UNICEF achieved significant engagement of Arm during the high-level week of the UN General Assembly (UNGA), which took place in New York from 24 -27 September 2018, to raise the profile of our partnership at the highest level and grow the alignment with Generation Unlimited. Activities included the Inaugural Generation Unlimited Global Board meeting and launch, plus the first bilateral meeting at the highest level of the partnership with Executive Director of UNICEF, Henrietta Fore and Arm CEO, Simon Segars. In 2019, at the Generation Unlimited Board Meeting during UNGA 74, Simon Segars was announced as a Champion of Promising Ideas. The announcement reflects Arm's commitment to highlighting specific pathways for the private sector to effect positive impact for young people across contexts, with a particular focus on Digital Connectivity.

During Davos 2019, Arm and 2030Vision hosted a roundtable at which Henrietta Fore was delighted to participate and present. Other distinguished guests included Kumi Nadoo, Secretary General of Amnesty International, Hans Vestberg, Chief Executive of Verizon, along with senior representatives from Accenture, Amazon, Dow Jones, Facebook, HP, LEGO Foundation, Salesforce and the World Health Organisation. Sharing a platform and presence at these types of high level global events have helped us increase engagement with other businesses and specifically grow the number of partners supporting 2030Vision (including Facebook and Salesforce).

Throughout the reporting period we have kept Arm colleagues engaged in the partnership through providing relevant internal communications, lunch & learns and bespoke events, as well as providing exciting opportunities for Arm's people to become actively involved in the partnership to help us deliver impact. Highlights from the year include hosting two trips for Arm employees to UNICEF Copenhagen Supply Division, delivering immersive Emergency Simulations for TeamArm employees in Bangalore and Cambridge, and holding four lunch and learns in Cambridge (UK), Lund (Sweden), and San Jose (USA).

Regarding public facing communications and media, our focus in year four was on delivering tactical communication activations on social and online. Key successes were a Forbes article on Innovations related to the Gates WASH Challenge and the <u>Urban Tech Bets</u> being recognized by Fast Company as one of its World Changing Ideas 2019. We were also thrilled to have UNICEF's Executive Director Henrietta Fore proudly announce Arm CEO Mr. Simon Segars as Champion of the Generation Unlimited Promising Ideas at the **Generation Unlimited Board Meeting**, held during the 2019 United Nations General Assembly. Multimedia content was also developed and published by **UNICEF** including:

- Partnership <u>video by UNICEF Innovation</u> and as <u>amplified</u> by UNICEF Executive Director
- Highlighting 2030Vision
- World Water Week video (over 12,000 views) and supported by <u>UNICEF global</u> channels
- WASH Bootcamp <u>collaborated content</u> and <u>video support</u>.

Looking forward, our Discover activity will focus on Global Grand Challenges (GGC) -Innovations for WASH in Urban Settings, supporting the best solutions to scale up. We will continue to Act, increasing our direct impact on children and communities by increasing our UNICEF country programme funding portfolio, focussing on tech in urban innovation and looking to further engage Arm's employees with high value skills in supporting our tech and innovation programming in specific countries. Our focus for Inspire will continue to be profiling 2030Vision and Generation Unlimited on the biggest global platforms and engaging our respective networks in the flagship programmes of the respective platforms. To further engage our broader internal and external audiences we will be developing a joint integrated three year strategy and communication plan and focussing heavily on our social and digital impact. UNICEF will build TeamArm into its engagement plan aiming to increase volunteer and fundraising opportunities.









As part of our Discover pillar, UNICEF and Arm have consistently examined the trends and opportunities that exist for investing in technology growth. Our partnership has already achieved a lot in this area. Together, we have driven new innovations through our Wearables for Good Challenge; identified key challenges children face in a rapidly urbanising world, along with new opportunities for investment in technology to address these issues; and invested in new research which has exposed a \$2 trillion opportunity for investing in Technology for Good and highlighted 6 Big Tech Bets for future investment. This year, we built on these successes through a number of key activities.

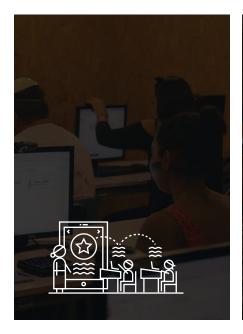
Launched September 2018

A1 TECH BETS

This body of work identifies digital technologies that both deliver positive social impacts for children and their families in cities, and grow markets and deliver financial returns for technology companies and investors. It details six big tech bets and provides specific recommendations for start-ups, large tech companies and the public sector.

By learning directly from users about their needs, seeing firsthand how technologies are directly improving their lives, sizing local and global markets, and speaking with exciting innovators, we came up with six big tech bets that represent the most compelling opportunities tech actors should pay attention to now.

These six 'Tech Bets' reflect a subset of digital technologies that can have enormous social impact for urban women and children while expanding markets and financial returns for technology companies and investors.



Blended Learning:

Platforms that allow teachers to integrate online tools in classrooms for better engagement and learning outcomes. Using blended learning approaches can improve the quality of education, gender equality, and chance for decent work and economic growth for 500–600 million children worldwide in our programme countries so that they can learn basic skills and have a better chance of staying in school.



Multi-Modal Skilling:

Services that mix online education with in-person mentoring to expand access to the skills that people need to get better jobs. At scale, multi-modal skilling could afford better quality of education, gender equality, and chance for decent work and economic growth for **60–120** million young people in UNICEF's programme countries by providing them with the relevant skills they need to thrive and better access jobs.

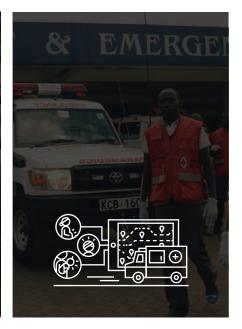


Smart Recruiting for the Informal Economy:

Platforms which connect individuals and employers with workers for one-off or short-term jobs, finding the most suitable candidates for customers and providing additional protection and security for workers. Smart recruiting for the informal economy can provide a level playing field for 0.8–1.2 billion men and women around the world — lowering unemployment and improving gender equality and decent work and economic growth.







Commuter Ride-Sharing:

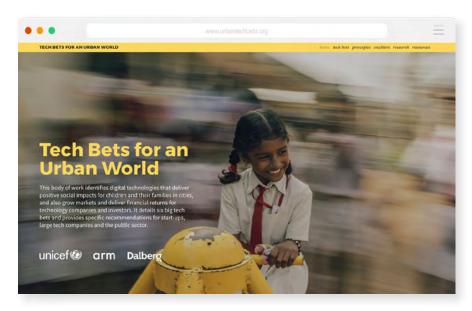
Car pooling services offered to workers by employers to ensure they get to work safely, reduce their impact on the environment, and reduce time wasted travelling to work and not spent with their families. At scale, Commuter Ride-Sharing could provide safer, more efficient, and better quality transportation for **350 million people around the world** — making progress towards gender equality, reduced inequalities, and decent work and economic growth.

Smart Water Metering:

IoT networks of sensors and meters that monitor the flow and/or quality of water, ultimately improving access to clean, fairly-priced water. Smart Water Metering could expand access to affordability and quality of water for 2.5–3 billion people worldwide, and decrease the financial burden felt by the world's poorest. This increases access to clean water and sanitation, supports good health and wellbeing, and reduces inequalities.

Emergency Response:

Platforms that link people in urgent need to the full range of public and private emergency response services through one interface. At scale, Emergency Response tech innovations could reach 3–3.5 billion people — bridging gaps to critical emergency care, particularly around childbirth, and substantially reducing pregnancy-related deaths, thereby improving health and well being, as well as reducing inequalities.



For the launch we produced a joint op-ed between ED Fore and Simon Segars, which was released through the <u>IPS News Agency</u> amongst other outlets.

Alongside a wide ranging social media launch, we were extremely pleased that ED Fore has also highlighted this work in her remarks to the Executive Board and the Tech Bets were also highlighted in a Forbes Article with Erica Kochi.

https://urbantechbets.org/

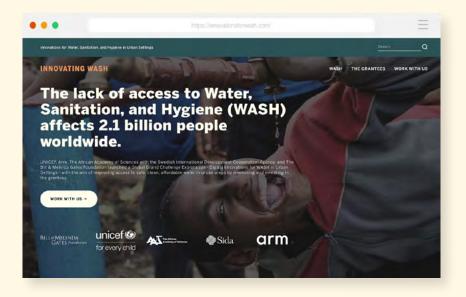


Launched in 2019

A2 GATES GRAND CHALLENGE

Developed out of the Smart Water Metering element of the Tech Bets, Arm, the Bill & Melinda Gates Foundation (BMGF) and UNICEF built a partnership to drive investments in innovation for WASH in Urban Settings. This was the first-ever Gates Global Grand Challenge held in partnership with UNICEF, and the first to bring in a private sector partner. We also secured an additional partnership with The African Academy of Sciences, with funding from Sida (Swedish International Development Cooperation Agency).

This unique collaboration led to one of the most successful Grand Challenges ever run by BMGF, receiving 547 applications from 47 different countries. From there 15 solutions were selected for a grant of \$100k each in order to bring their concepts to life. A further 8 were invited to participate in an accelerator bootcamp in Munich with the World Food Programme Innovation Accelerator.



https://innovationsforwash.com/



November 2018 - February 2019

A3 ARMIDEAS CHALLENGE

UNICEF, ArmIdeas, and the Arm Sustainability teams partnered to launch the ArmIdeas Sustainability Challenge to inspire Arm employees to invent something that will make the world a better place. The innovative solutions were to make use of Arm-based tools or technologies to address one of the six broad "Tech Bets" areas outlined above.

There were 2,800 pageviews for the challenge and 16 teams submitted video applications from a range of countries, including the US, UK and India. UNICEF provided three judges, including 2 programme specialists, for the judging panel. The two winners were:

Waste Aware:

(Ajith and Joyjeet, Bangalore)

Waste Aware developed a simple implementation using a microbit that alerts users on their resource consumption on a daily basis that can be applied to water, wet waste and plastic waste. The judges particularly liked the simplicity of this idea, and how it recognized the human aspects required for any sort of behavioral change.

Project Swarm:

(Mert, Hector, Christo, Jan & Matteo, Cambridge)

Project Swarm developed an idea for rural, community-managed water sensors for piped

systems. The judges particularly liked the innovative crowd-sourced data acquisition mechanism. This idea was then developed further to become a podcast app that crowdsources internet connectivity.

The winner(s) were given a small financial award of £500 each, up to £1500 max per team, as well as 2 weeks out from their day jobs to develop their idea further. The winners also went on to mentor teams at the Gates Grand Challenge Munich Bootcamp.

UNICEF also provided high level communications support for the internal launch by securing Oscar winner and UNICEF UK Ambassador Olivia Colman to develop a launch video.





B. Act

Through this pillar Arm and UNICEF have a direct and measurable impact on children and communities. Together we apply the Tech Bets market research through funding relevant UNICEF programmes and social enterprises that invest in digital solutions. This ensures our work translates into direct benefits for children.

B1 VIETNAM

Developing a Youth-led Innovation Lab

The situation for children

Children born in today's lower middle income Vietnam are growing up in a reality much different from their parents, who primarily grew up in rural farming communities. While economic growth, industrialization and urbanization are bringing about positive change for more children and young people in terms of access to quality basic services including health, early childhood care and education, protection and social services, the gap between poor and rich is widening.

With a total estimated population of 13 million people, including some 5 million unregistered residents, and with 130,000 new migrants arriving every year, Ho Chi Minh City (HCMC) is Vietnam's largest and fastest growing city and the commercial, political, cultural and technological centre of the country.

However, ongoing and new challenges are on the rise due to rapid and uneven urbanization, adversely impacting the city's capacity to meet the demands of the growing corporate sector with the current capacities of the young workforce.

Currently, Vietnam's child and youth population is the largest ever at 38.5% under the age of 25. This generation will carry the economic burden of an aging population and needs to be better equipped to take on the challenge. Currently

only 30% of the poorest students continue to lower secondary school. While the current 'Now Generation' is better educated than their parents, there is an increasing mismatch between formal learning outcomes and the needs of the labour market, to the extent that skills mismatch affects close to half of working youth.

The solution

With support of Arm, UNICEF Vietnam is investing in 21st century skills, mentorships from business leaders and on-the-job training. This is essential to empower, build confidence and create new jobs and employment opportunities for those that are currently at risk of being left behind.

Key activity to date

Collaboration with Vietnam Chambers of Commerce and Industry has been established and together we are conducting a market assessment aimed at identifying desired skills for employability by the business sector.

UNICEF's Youth-led Innovation Lab, under the Saigon Innovation Hub is being developed taking into consideration a participatory and human-centered approach. The establishment of the Lab is also supported by ING and will provide a learning and skills practice platform (UPSHIFT/social innovation, maker space and media space) for marginalised adolescents in HCMC.

The Arm funding will contribute to the planned activities with specific focus on engaging the private sector to support the Youth-led Innovation Lab and its target group with investment including for sustainability.

B2 INDONESIA

Creating a digital innovation incubation program for adolescents

The situation for children

Adolescents in Indonesia constitute 18% of the country's population (46 million). These adolescents are growing up in a Middle-Income Country where, despite its steady economic growth, they still continue to face significant deprivations and violations of their rights. In 2016, the Economist Intelligence Unit (EIU) identified trends that will affect young people in Indonesia in 2030, including growing economic inequality, limited access to quality healthcare and education and increasing youth unemployment, among others. Currently, the youth unemployment rate is around 14% with the situation deteriorating for young people looking for their first ever job.

Aside from access and retention in the education system, actual learning continues to be a challenge. Even when they are in school, adolescents in Indonesia struggle with learning basic functional skills. According to the Programme for International Student Assessment (PISA), less than half of 15-year-olds are proficient in reading and a third in math, such as numeracy and literacy. This means that when they finish school, they do not have the skills needed for the labour market. Existing learning opportunities are not preparing them with the needed skills that are relevant to industry's demand.

The solution

With support from Arm, UNICEF Indonesia will conduct the "Building Skills and Empowering Young People in Indonesia" Program. This is a digital innovation incubation program for adolescents. In this program, adolescents will be given the opportunity to develop key transferable skills through innovation challenges and participatory workshops. Through additional specialized skills training and mentoring from professionals, they will work in teams to develop ideas for digital solutions to a key issue facing young people. Their solution will be presented as a prototype that will be assessed and pitched for catalytic funding, with the aim of scaling successful solutions to reach millions of adolescents across Indonesia. The program will provide skills development opportunities to young people including marginalized and disadvantaged adolescents.

B3 BRAZIL

Co-creating solutions connecting youth to job opportunities

In 2018, 32 adolescents were murdered every day in Brazil – equal to one whole classroom disappearing each day.

The situation for children

These young people are often from deprived urban areas and lack access to education, training and jobs. In Ceará state, out of 224 youths murdered in 2015, more than 70% were out of school and only 2% had protective work experiences. Many young people in these areas have insufficient education and suffer difficulty with bureaucratic aspects, such as securing personal documentation. They also struggle to manage rigid hour schedules, especially those who are young mothers and fathers, and many times they have no resources to attend interviews and selective processes. The distance between the employment centres and their residences is significant. Information about formal job opportunities tend to circulate between those who are already part of other networks.

The solution

The connection with job opportunities is key to a host of other transformations. Internship and learning opportunities require young people to be enrolled in school. Access to income, in a protected way, enables the most vulnerable adolescents to get a glimpse of concrete prospects for the future and see meaning in their return to the classroom.

The Call to Solution Initiative invites youths to co-create actions to reduce the distance between the most vulnerable youths to job opportunities. A diagnosis on the job accessibility bottleneck will be developed with youths and a workshop (learning journey) will be provided for youth project designers. Ten projects will be developed in a collaborative way and five of them will be selected for implementation. Seed money and mentors will be available during this phase. At the same time, UNICEF will advocate for private and public stakeholders to commit broader changes and to support the projects to go into scale with sustainability.

The national apprentice law strengthens the initiative as it establishes a minimum of 5% vacancies for young apprentices in most private companies. In Rio de Janeiro State, there are 80,000 potential vacancies for young apprentices, and less than half are fulfilled. Another strength is UNICEF's Generation Unlimited framework, which advocates actions co-created with youth to support access to high school, job opportunities, and youth empowerment, especially for girls.

Key activity to date

Building partnerships: UNICEF has now established key partnerships with with implementing partner CEDAPS – Centro de Promoção da Saude and the Committee for the Prevention of Adult Homicide.

CEDAPS has over 25 years of experience empowering and training youth, local leaders, and community groups in over 150 communities in the state of Rio de Janeiro. Due to armed violence and aggravation of human rights violation in the peripheries/favelas in Rio de Janeiro, it is essential to partner with well recognised and accepted organisations at the community level.

The initiative's objectives and strategies are also shared with UNICEF partners within the Committee for the Prevention of Adolescent Homicide, as the focus Call to Solution Initiative territories will be those with the highest homicide rate in the city of Rio de Janeiro, the same territories where the Committee's partners are converging their efforts. The Committee is composed of: Rio de Janeiro City and State Executive Representatives (Education, Police, Social Welfare, Research Centers), NGOs, the Judiciary System, State Council of Rights of Children and Adolescents, among others.

B4 MALAWI

Floods: predictive analytics

The situation for children

Malawi is highly vulnerable to the impacts of extreme weather events given its location along the great African Rift Valley, rapid population growth, trend towards urbanization, climate change, and environmental degradation. The most common weather-related shocks affecting Malawi include floods, drought, stormy rains and hailstorms.

Over the past five decades, Malawi has experienced more than 19 major floods and seven droughts, with these events increasing in frequency, magnitude and scope over the years.

The recent floods in March 2019 had a significant impact on people's lives, livelihoods and socioeconomic infrastructure in the affected areas, pushing a large number of people into poverty and food insecurity. In total, an estimated 975,000 people were affected, with 86,976 displaced, 60 killed and 672 injured. With 288,371 houses either partially or completely destroyed, most affected people were accommodated in temporary internally displaced people (IDP) camps, mostly located in classrooms and school facilities, with limited access to safe water and sanitation facilities. This resulted in significant disruptions to learning and teaching activities at the school. In addition, the 2019 floods affected roads, bridges, power supply lines, irrigation infrastructure and mature crops. Power supplies were interrupted for more than two days across the country. All these natural disasters have major impact on children's development and mothers' well-being.

The solution

Resilient communities, facilities, and infrastructure, accurate and actually working early warning systems, and strategic disaster preparedness are key in order to mitigate harms and overall minimize the impact and possible damages of natural shocks. Currently these key components and practices are being developed in Malawi; however, much of the evidence used to make informed decisions is scattered, not consolidated or optimized, and not even hosted on interoperable systems. That makes the early warning and disaster preparedness process less effective, ultimately leading to vulnerable communities not being evacuated prior to disasters and key infrastructure and sectors not being secure and resilient.

Therefore, a need has been identified to consolidate the existing knowledge, data and expertise and incorporate newly-gathered data into an updated flood hazard model for Southern Malawi, that would be hosted on an interoperable system, providing (near) real-time forecasts for floods. Such information would be used to influence and inform regular programming (resilience building and development) as well as emergency preparedness work in Malawi.

Key activity to date

Initially, consultations with existing UNICEF academic partners were conducted to create a general understanding of the key elements, benefits and challenges of predictive flood modelling, as well as to better understand the Malawian flood context. Internal discussions with different UNICEF teams were also held to identify how such service would improve UNICEF's programmatic work in the field of resilience building, emergency preparedness and disaster response.

As a result of consultations a Terms of Reference has been drafted for a contract of technical services in providing flood modelling, mapping and forecasting services. Parallel to this process, UNICEF has been working with other partners to initiate the planning of a larger-scale aerial data acquisition activity in Southern Malawi. It is expected that the drone data collected will improve the overall flood modelling capability and will provide high resolution imagery for more accurate analysis of most vulnerable facilities (health, education), infrastructure (roads, powerlines, bridges, water resources), and other assets (crops, household, etc.

Planned activity

Throughout 2020 we will be working to deliver the flood modelling programme. After the initial flood modelling is done, analysis and recommendations for the sensor network improvement will follow, as well as visualization of the initial flood model results will be conducted. At the same time, the service provider will be working on dataset improvement (especially processing aerial data), establishment of the sensor network, as well as improving the flood model and predictive analysis with the new data. Finally, the improved data, flood model and the near real-time sensor data will be integrated into an interoperable flood prediction system, which is foreseen as the key product of the project.

B5 MALAWI

Wearables for Measuring Biomarkers for Child Development Study

The situation for children

In Malawi, 65% of those who sought healthcare in 2016 reported difficulties linked to the long distances to health facilities. In 2010, there were only 0.019 physicians per 1,000 people in the country, compared to 2.4 and 3.6 in the US and Switzerland, respectively. The case is similar for nurses and community health-workers. Under-five mortality is declining, but it is still at 55 per 1,000 live births, well above the global average. Lastly, for a total population of 18 million, 3.6 million cases of malaria were reported in 2015 (World Bank, 2016).

Providing a reliable system for disease prevention and epidemiologic control remains one major challenge faced by the Malawian health system.

The accuracy and availability of data are still inadequate, making evidence-based decisions almost impossible. As one of the highest delegates of the Ministry of Health of Malawi put it, the country will not meet its ambitious objectives if the government continues to do 'business as usual.' In most cases, data must first be collected on paper and then entered manually into an electronic database. This process inevitably makes data collection inaccurate, expensive and infrequent. In turn, low-frequency data collection forces decision-makers to diagnose problems based on a dated picture, and does not team was held at the local hospital in Dowa capacitate them to react in a timely manner to fast-evolving scenarios. The WHO and other partners recognize the lack of trust in health data in Malawi, and have called for adequate investment A second meeting with local authorities and in in health information systems by 2030.

The solution

This research project aims at changing the paradigm of development policies by supporting innovative methods for collecting data on child development indicators at a much lower cost and higher frequency than methods currently available.

This first phase of the Child Development Study has the following objectives: 1) Collect and transmit biomarker data using wearables - on a weekly basis over the course of one month; 2) Define procedures to make sure that Health Surveillance Assistants (HSAs) and Community Watchers will follow the data collection protocols and test incentive structures; 3) Test and validate participatory surveillance (mobile surveying); 4) Test downstream communication (mobile alerts/nudging); 5) Design the early warning system; 6) Define the sample frame and design the baseline questionnaire for the largescale longitudinal study; and 7) Validate ethical considerations and acceptance of wearable devices by participants.

Key activity to date

Orientation sessions were deployed at the beginning of November 2019: two sessions at Chezi village, with simulation and exercise on the user journey, plus practice with the App features and devices handling. Attendees included 4 Health Surveillance Assistants (HSAs); 4 volunteers; and 2 HSAs supervisors. Please note that the session did not test devices on patients.

A meeting with the District Health Management District. Attendees: 1 chief medical doctor, 5 health officials from several areas.

particular with the District Executive Committee was held at the local hospital in Dowa District. Attendees included 25 members of the executive committee; Medical doctors, village representatives, HSAs, and local journalists.

Next, the team conducted sensitization with village chiefs in Chidothi village, followed by a demonstration (without data collection) with children and caregivers.

On November 8th, the team tested data transmission and local storage during a session in Mkwani village. Devices were placed for collecting environmental metrics (air pollution, luminosity, air temperature, etc.).

Planned activity

The next steps include:

- · The beginning of the mobile surveying (SMS and Interactive Voice Recordings) in 400 individuals in four villages;
- Improvements on UX/UI and performance of apps;
- Troubleshooting and bug fixing;
- · Devices distributions;
- · 1 month deployment of several devices independently managed by HSAs and volunteers from Monday November 25th.

Communication moments

The University of Zurich, which is the research partner of UNICEF Malawi, has collected footage from the preliminary activities conducted during the month of November 2019. Their communication department is finalizing a short video that summarizes the field activities.

Institutionally, UNICEF Malawi and its partners are finalizing a Memorandum of Understanding that is targeted to be launched at the beginning of 2020. The launch of this MOU will be a public communication moment that will serve to promote the project in Malawi and beyond.

B6 U-REPORT

The situation for children

U-Report is a global platform built to listen to the voices of young people by connecting simple technologies like social media, websites, and mobile phones to create a community that gives their often under-represented perspectives a place to be heard. As our websites work as a hub connecting our community to content, results, and stories all in one easily accessible place, a redesign was needed to bring it up to the quality U-Report represents globally. Beginning in October 2018, and with the generous support of Arm, we began an almost year-long effort to redesign it. As a platform rooted in listening, we decided to follow on the successes that built a community of over 8 million young people - by going and listening, before designing, first.

Where we started

Our first listening mission was to Côte d'Ivoire (now home to over 1 million U-Reporters!), where workshops and interviews kicked off the project. Along with teams from Haiti, Congo Brazzaville and Ghana, our time in this early phase focused on hearing from U-Reporters and organisational partners to ground ourselves in where the problems were, but just as importantly, to not jump straight to solving them. A human-centred process pauses on the quick reactions for the goal of exploring deeper – to keep listening.

To complement our time in Cote d'Ivoire, consultations next brought us to France, a UNICEF National Committee office with a more recently-established U-Report. Here, we could meet with young people in a new and different environment to learn their perspectives and understand their technology habits. They told us they engage with U-Report but almost always via a prompt or social media post, and they rarely visit the website directly. Later in São Paulo, young people would tell us the exact same thing.

Next steps

After a few rounds of prototyping and testing, we were at a critical juncture where we had three things in front of us: a collection of insights, a stack of questions still unanswered, and a need to start development. By now, we knew our audience. We knew to focus on results and response, and we knew the vital need for cleanup. What we didn't yet know were details of: how best to redesign for location and share the story of results, like how U-Reporters in one province often feel differently than those from the province next door. And maybe the key struggle at the moment was also a practical one – we couldn't wait any longer to start development.

Solving this problem began in April 2019, when we started a six month process with development partners Nyaruka to begin building the foundational elements in a fast-paced two-week sprint cycle. At the start of each sprint we would decide on the next best decision we could make, all while continuing work on what design concepts we still needed to uncover. Our goal was to keep design at least six weeks ahead of development, allowing us to keep designing (and listening) while still remaining responsive to what we heard.

Our final two missions to Ukraine and Tanzania gave us the chance to take higher fidelity prototypes and put them in the hands of our users. Before, we were prototyping concepts and features, but now, we were prototyping the entirety of the product in a real way. In Ukraine, we led small groups of young people to collaborate on the final version, where their keen sense of what concepts were best for U-Report was obvious. And because we were presenting functioning prototypes, their comments were taken directly into the product design on the spot.

In Tanzania, the focus was on exploring our questions around U-Reporter location results, and how to build a better method of response to those results. Visits to local partners like Bridge for Change and the Youth 4 Change Innovation Hub at the University of Dar es Salaam were where designing with and for young people helped us finalize these concepts. We finished the week in Zanzibar, meeting and prototype reviewing with government and NGO partners alongside U-Report leadership. In that room that day we prototyped together what would soon become a dashboard focused on engagement, built specifically with them and other partners in mind.

The final product

Now that we have finalised design concepts, we can fast-forward through four months of sprint cycles, bug fixing and product development. This long process of listening to our global community led the way toward the work that so many people helped us create. In spending the time needed to invest in listening and by only designing what we heard, the final product is a reflection of all those perspectives. Listening, then acting, brought together over 60 countries worldwide, enabling the voices of 8 million young people around the world to be heard even louder.

For more information and to check out the project yourself:

https://ureport.in

B7 MONGOLIA

Designing the 21st Century Ger

The situation for children

Ulaanbaatar, Mongolia is the coldest capital on Earth, and has the highest recorded levels of air pollution in the world. The city is home to roughly half of the country's children. In two decades Ulaanbaatar has seen its population grow by 70%. Over half (~60%) of households live in informal dwellings known as gers or in similar small houses.

Families living in gers rely primarily on unrefined coal to keep them warm through the winters, when temperatures reach -40C. Burning raw coal releases harmful particulates and is estimated to contribute to UB's air pollution at 52 - 80%, creating severe indoor air quality challenges within children's homes. In the last 10 years, cases of respiratory infections have nearly tripled and pneumonia is now the second leading cause of death for children under five years old. Children in Ulaanbataar were found to have 40% lower lung function than children living in a rural area.

The solution

To start tackling this problem, we focused on the ger. The traditional, tent-like structure has been a distinctive feature of life in Central Asia for at least 3,000 years. The ger is a large, mobile, domed tent constructed of felt, canvas and wood that is the traditional home of Mongolian nomads.

We tackled the problem from three perspectives:

- Building practices, i.e. adaptations to the design and construction of building elements of the ger, including the door, floor, toono (roof), and vestibule for greater ventilation and insulation.
- Diagnostics and measuring, or understanding the way the ger actually performs thermally in order to pinpoint areas for improvement.
- Capturing and sharing knowledge to understand how ger dwellers are already improving thermal performance and reducing reliance on coal, and understanding how we can share best practices effectively.

With support from Arm, UNICEF Mongolia then devised a controlled testbed, called the "Ger Ranch" that consists of six experimental gers, in which a series of interventions or experimental prototypes (to the door, toono, and floors) can be individually and collectively evaluated over the course of the monitoring period.

The prototypes were designed over a two month period of time by project partners. Each prototype has been designed to isolate a specific thermal flow or to explore a heat retention strategy, such as insulation, thermal mass, infiltration and radiation. Developing a better understanding of these strategies is essential to developing future recommendations and also for constructing a working energy model of the Mongolian ger.





















C. Inspire

We need to galvanise the industry to bring scale to our ambition, create behaviour change and achieve the SDGs. Together we use our unique positions and convening power to inspire additional solutions and investment. This involves advocating for 2030Vision partners and technology companies to invest in relevant technology solutions. We also go beyond our direct ecosystems to bring our work to the global community, particularly through global events and platforms

C1 GLOBAL EVENTS

Davos 2019

During Davos 2019 Arm hosted a roundtable co-presented by speakers such as Jimmy Wales, Co-Founder of Wikipedia; Richard Curtis, Co-Founder of Comic Relief and Founder of Project Everyone; and Dominic Vergine, Head of Sustainability and Corporate Responsibility at Arm. The Executive Director of UNICEF, Henrietta H. Fore, was delighted to participate. Other distinguished guests included Kumi Nadoo, Secretary-General of Amnesty International; Hans Vestberg, Chief Executive of Verizon, along with senior representatives from Accenture, Amazon, Dow Jones, Facebook, HP, LEGO Foundation, Salesforce and the World Health Organisation to name but a few. For more than four decades, participants in the WEF's annual meeting have come together at the start of each year to address the most pressing issues on the industry, regional and global agendas.

This year, the WEF – whose mission is to "improve the state of the world" – convened under the theme, "Globalization 4.0: Shaping a Global Architecture in the Age of the Fourth Industrial Revolution."

In the early morning roundtable moderated by Wall Street Journal editor, Nikki Waller, the Executive Director of UNICEF, Henrietta H. Fore, made an impassioned appeal to the technology industry to champion the needs of children and young people by collaborating across sectors to create innovative technology solutions to achieve the Sustainable Development Goals (SDGs). Highlighting the UNICEF-Arm partnership and 2030Vision initiative, ED Fore asked the audience to lend some thought to the roles they could potentially play in helping to match their "technology and innovations with the needs of young people."

UNGA 2018

UNICEF activities during the high-level week of UN General Assembly (UNGA), which took place in New York from 24 – 27 September 2018, featured significant engagement of Arm to raise the profile of our partnership at the highest level and grow the alignment with Generation Unlimited and UNICEF's priorities for children and young people. Generation Unlimited is a new global partnership spearheaded by UNICEF that brings together the public and private sectors and young people to find new ways to ensure that every young person is in school, learning, training or employment by 2030. Arm CEO and team were invited to the inaugural Generation Unlimited Global Board meeting

and launch at the High Level Event on Youth 2030. A number of other high level engagements were secured that week:

- High level meetings for Simon Segars, Arm
 CEO with Erica Kochi (Co-leads UNICEF's Innovation Unit), Cynthia McCaffrey (Director
 of the Office of Global Innovation, UNICEF)
 and the first bilateral meeting with
 Henrietta H. Fore (Executive Director,
 UNICEF) took place at UNICEF HQ. The
 meetings, which would lay the foundations
 for more significant engagement at the
 highest levels in each organisation were
 used to discuss and identify the most
 strategic areas of work to create even more
 change for children beyond 2019.
- Caroline Herzog, EVP and General Counsel was invited to an inaugural Women Leaders for Girls Reception focused on girls' empowerment, opened by the Heart to Heart Quartet, and UNICEF GWA Lily Singh with inspiring interventions from Ilwad Elman of Elman Peace and Tsitsi Masiyiwa of Higher Life Foundation and closed by UNICEF GWA Angelique Kidjo.
- UNICEF was also able to support Arm's involvement in the UN Private Sector Forum and ensure Arm CEO Simon Segars met Deputy Executive Director Shanelle Hall. The event brought together around 300 leading CEOs and investors, heads of state and government, senior United Nations leaders and select civil society representatives.

UNGA 2019

At the Generation Unlimited Board Meeting during UNGA 74, which showcased the power of multi-sector partnerships to progress opportunity for young people, Arm's CEO Simon Segars was announced as a Champion of Promising Ideas. The announcement reflects Arm's commitment to highlighting specific pathways for the private sector to effect positive impact for young people across contexts, with a particular focus on Digital Connectivity.

2030Vision & CogX 2019

With Project Everyone and 2030Vision, UNICEF helped create a Goal Hub at the entrance to the festival highlighting the Global Goals and specifically the potential of AI in delivering to the Goals. UNICEF used this space to highlight the importance of innovative technological development to build a better world. We used the headline statistic that 'by 2030 there will be

2 billion young women and men seeking opportunities for a bright future throughout the world' and included the following interactive elements created by our own design team:

- Case studies and accompanying video on Drones for Good and the use of drone technology in development and humanitarian contexts.
- Case studies and accompanying video on Project Connect and the ambition to provide universal internet access
- Case studies and accompanying video on U-Report, a digital platform that connects and empowers young people
- Supply of Virtual Reality headsets with UNICEF engagement films

UNICEF UK was also able to secure Mike Penrose (Executive Director, UNICEF UK) to give a keynote speech for the Generation AI: AI for Everyone session on the Future of Work and Education Stage and participate in the subsequent panel session. During the speech he was able to highlight Arm and UNICEF partnership and how together we are exploring ways in which AI and emerging technologies can support children's right to education and youth employment opportunities.

Steven Sadi (UNICEF Innovation Partnership Specialist) joined John Heinlein (Vice President and Chief of Staff) for a facebook live interview which can be viewed here.

- 20,000 Attendees (20% c-suite);
- · 687 Speakers;
- Media coverage Extensive national, international online and print coverage.
 186 Total registered journalists;
- 600M+ Media reach to date; 50+ Pieces of media coverage; 7.4M+ Reach; 33,400 Interactions.





























C2 EMPLOYEE ENGAGEMENT

Throughout the partnership, we have sought to inspire Arm's people to get behind our partnership and joint mission to innovate for impact. We have kept Arm colleagues informed of the progress of the partnership and of key UNICEF activities through providing relevant internal communications and lunch and learns. We have also been able to invite key stakeholders to exclusive UNICEF events as part ofour recognition and reward for valued donors. Employee engagement events in the reporting period included:

- Armideas Sustainability challenge entered by 16 teams
- 2 trips for Arm employees to UNICEF Copenhagen Supply Division in November 2018 and September 2019
- Gates Munich attended by 8 Arm employees from across the business.
- UNICEF presented lunch and learn sessions for Arm employees across the year at the following offices
 - 2 in Cambridge (inc. AISC launch)
 - Lund, Sweden (including attendance from UNICEF U-Report Specialist)
 - San Jose, USA

- UNICEF delivered 2 immersive Emergency Simulations for Arm employees
 - (inc Bangalore TeamArm conference). The UNICEF Emergency Simulation is designed to provide an immersive experience that showcases the challenges UNICEF faces during an emergency. The simulation at the TeamArm conference received excellent feedback in the participant survey and was voted best session of the week.
- Delivered introductory presentation for Missing Maps hackathon and ran a Skills Based Volunteering workshop at TeamArm conference in Bangalore.
- Presenting and supporting Arm's summer work experience week
- Internal comms pieces:
 - August 2018 Partnerships Summary
 - September 2018 Tech Bets Spotlight
 - October 2018 Gates Grand Challenge Spotlight
 - November 2018 Supply Division Spotlight
 - February 2019 WASH Tech Bet Spotlight
 - March 2019 Digital Learning Tech Bet Spotlight
 - Wearables for Good update
 - September 2019 Generation Unlimited

ARM visit to UNICEF Supply Division November 2018, Reflection by Duncan Frazer (Arm)

Emergency aid

We see relief aid being distributed from the back of trucks and pickups on the TV, who stops to think about how it gets there and how the contents of the aid packs are put together?

I recently joined a visit to UNICEF's supply warehouse in Copenhagen, Denmark as part of the sustainability initiatives that are run at Arm. Asset management and supply chain logistics are a key vertical market for the Arm IoT Services Group (ISG), and Arm's contribution towards real world improvements is a key piece of the sustainability team's work so it was a great opportunity to see real world applications and learn about UNICEF's work.

In 2017 UNICEF responded to 336 emergencies internationally, Arm is a UNICEF partner and were invited to join one of their regular warehouse tours. The Copenhagen warehouse is the largest of 3 supply warehouses around the world, our tour introduced us to the highly automated systems, to the principles behind the provision of aid, and to some of the team that operate the warehouse, oversee the aid contents, and manage the local deployment when emergency aid is required.

Kit boxes

A key relief method implemented by UNICEF is their wide range of kits covering everything from midwifery through food and nutritional packs to sports and games. A simple request to provide fully stocked medical kits to midwives in disaster hit areas instead of individual supplies that required managing and restocking has grown enormously. The teams at UNICEF have taken this concept and applied it to help with many different issues affecting young people. Hygiene packs include first aid kits, sanitary products, water purification tablets and tools; packs come with various options to allow local teams to specify different product types to meet different local needs and to work with the local traditions; larger packs for schools come in aluminium cases that double as blackboards when opened up in class, books, pens, learning tools that are appropriate to the local language and landscape are provided to help bring youngsters into the schools. Fun and play aren't forgotten either, kit boxes with footballs and goals, skipping ropes, through to counting blocks and drawing packs are available where a wide range of children are being looked after from infants through to young adults.

Warehouse

The team in Copenhagen is very open about their contribution to the global task. The large bulk of aid deliveries are provided directly from suppliers out to the field, but some of the most targeted and fastest responding shipments come from this warehouse. \$98.7 million of aid passed through the warehouse in 2017 accounting for some 5% of the shipments that UNICEF made in the year. A key component of the aid contents is low value, sustainable products which makes just short of \$100m worth of shipments a massive task.

A high level of warehouse automation enables such a large output. Incoming shipments are loaded into a pallet train which departs through to processing or storage. Processing lines allow the kit boxes to be generated with the completed kits being reloaded onto fresh pallets and joining the train for storage. The storage - a 150m long warehouse with racking 2 deep, 10 pallets high, and with 8 fully automated pallet cranes continuously serving the train to collect and store or retrieve and dispatch stock. The warehouse was built without pillars to ensure the maximum use of space, the structure actually sits on the pallet racking for optimal design. The massive cranes have double depth pallet forks with the inventory controller tracking some 32,000 pallets in the deep bays. Rear-stored pallets are accessed by the controller automatically scheduling the movement of a front-bay pallet into an empty slot to clear access for the rear pallet. When stock is required the scheduler simply calls up stock to be returned to the train which finally takes stock to the dispatch area to be loaded onto ground transport.

Emergency response process

One of the most impressive aspects of our visit was a session from some of the leaders that head to emergency regions to provide the initial assessment and relief delivery planning. UNICEF has an international organisation of local offices and employees to monitor local conditions and to react when help is needed. When aid needs to be delivered to an emergency area a team will fly travel directly to the area in need

to assess the requirements, the transport logistics, identify warehousing and storage needs, and draw up a plan that aims to cope with the often shifting environment. The work these team leads perform is critical and inspiring, their need to grasp the real requirements quickly, to look at multiple options to deliver aid and balance risk and speed, and their resourcefulness in pulling together a working solution set the groundwork for the whole operation often lasting for many years to come.

Innovation

UNICEF's in-house Innovation Team pulls together all of these elements, including aid delivery mechanisms, along with the available kit boxes into one stream. The team drives to improve the products that are sent in aid packs and ensures they do the best possible job, reduce costs, maximise the delivery efficiency, minimise the ecological impact, and include the most appropriate technology. Simple changes like the position of a water spout in a water tank, or the positioning or finishing of the handles to ensure the tank is comfortable to carry all affect the usefulness and the longevity of a product. Modern technical solutions like digital health monitors are evaluated to balance the acceptance of the equipment within the communities being helped, the training required, the cost per unit efficiency within the total budget, and the stability of the devices.

Conclusion - a call to action

From the short time that we spent with UNICEF we got a feel for the size of the organisation that is needed to cope with the number of emergencies around the world, the combination of low tech solutions through to high tech storage and delivery systems, and the passion of the teams that work to bring the aid to those that need it. Arm is a UNICEF partner, we have a massive potential to bring our engineering skills and our compassion to the topics that they work with every day, the visit opened my eyes to the scale of the work, the professionalism of the teams, the need and responsibility to help and improve. If you have an opportunity to contribute to UNICEF's work either with your own time and money, or with solutions to further improve the aid or the delivery solutions then I urge you to help wherever you can.













Communications Unications & Advocacy Summary

We faced some challenges in the fourth year of partnership as we looked to fill the resource gap and set a new communication strategy. This meant our focus in year four was on delivering tactical communication activations on social and online, then looking towards a longer term communication strategy aligned to a long term overall partnership strategy.



In the reporting period we were able to achieve the following communication and media successes:

- WASH Challenge and Munich Bootcamp.
 Forbes article on Innovations related to Gates WASH Challenge which was amplified by UNICEF Executive Director.

 Coordinated real-time social media support with UNICEF's ED Fore around Munich bootcamp and pitch night.
- Urban Tech Bets recognized by Fast
 Company as one of its World Changing
 Ideas 2019 and amplified by UNICEF global social media and UNICEF Executive Director and with evergreen content. ED Fore and Arm CEO Simon Segars also co-wrote a piece on Tech Bets, with angle on technology investments for impact.
- At the Generation Unlimited Board Meeting, held during the 2019 United Nations General Assembly, UNICEF's Executive Director Henrietta Fore proudly announced Arm CEO Mr. Simon Segars as **Champion of the Generation Unlimited** Promising Ideas. These ideas around connectivity, green economy, innovative financing and more can potentially turn into global breakthroughs that can connect young people with a better future, no matter what their past and present look like. This announcement was supported by UNICEF global and UNICEF Executive Director. Partnership highlighted by UNICEF **Deputy Executive Director.**

Building upon strategy of crafting Arm-supported programmes into campaigns capitalizing on UN Holidays:

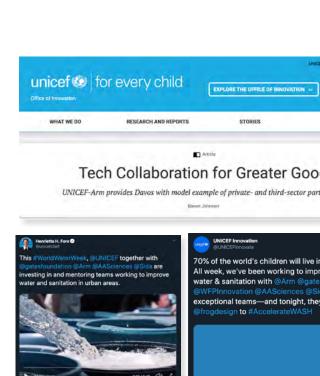
- Amplified partnership in <u>Davos 2019</u> supported through <u>social video</u>. Supported by <u>UNICEF Executive Director</u> Evergreen content by <u>UNICEF Executive Director</u>
- World Water Week campaign for Gates Challenge: with support from UNICEF Global channels. Above average engagement, notably on Twitter (top tweet engagement rate of 8.2%, where industry average is between 0.02 and 0.09%) and LinkedIn (top post engagement rate of 3.67%, where industry average is 0.054%). Full report here.

Multimedia content also developed and published, not only to support/drive campaigns, but also to visualize the Arm-UNICEF partnership as a whole:

- Partnership Video by <u>UNICEF Innovation</u> and as amplified by <u>UNICEF Executive</u> <u>Director.</u>
- Highlighting 2030Vision.
- World Water Week video (over 12,000 views) and supported by UNICEF global channels.
- WASH Bootcamp collaborated content and video support.

Added value

UNICEF Supply Division Copenhagen has been advising Arm and consultants that are working with the WHO to test the concept for a new healthcare tablet to allow healthcare workers in remote locations to provide digital healthcare in the same way those in urban areas can.









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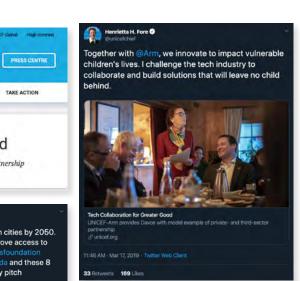
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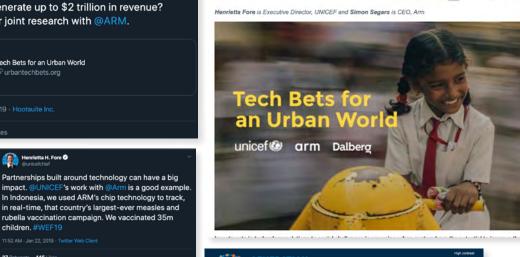




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How Technology Has Changed Lives for the Better





By Henrietta Fore and Simon Segars



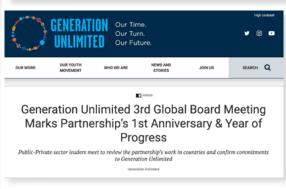
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