

arm

Social Impact & Innovation

2022



Foreword



by **Fran Baker**
Global Social Impact and
Innovation Lead, Arm

There is no doubt that in the 21st century, digital technology has revolutionized how we live, work and connect with the world around us. At the same time, humanity is facing unrelenting and interconnected challenges, including the climate crisis and growing inequality.

We believe that business at large and the tech sector have a significant role to play in providing solutions to many of the world’s critical environmental and social issues, as set out by the United Nations Sustainable Development Goals. Arm, a leading designer of the semiconductor chips that power our digital lives is privileged to be part of the transformation to deliver sustainable, inclusive and equitable solutions.

“**We believe that business at large and the tech sector have a significant role in providing solutions**”

However, we must also pay attention to the potential negative impacts of technology. Access to technology is not equal, technology design is not neutral, and technology solutions are not always the answer. At Arm, our approach is to focus on those areas where we and technology can most effectively play a role and to address the associated inequalities.

Through our social impact work, we have learnt a lot, understanding where we can add the most value and expertise to the social impact ecosystem to have a multiplier effect. We now have an audacious goal to extend the benefits of technology to the 2.5 billion people currently not prioritized in technology development by 2030 - the only target which can meet the scale and pace of the change required to leave no one behind. We approach this target with care for those people and areas we aim to benefit, humility that it may not be feasible, and courage to strive for it anyway.

I am incredibly proud to lead social impact and innovation at Arm. What we have achieved through our partnerships and innovations that lead with purpose has exceeded our expectations. We share this report to honor the partners in our social impact ecosystem, who continue to face almighty challenges to deliver outsized impact for those who need it the most.



Overall Reach of Arm Social Impact and Innovation (SII) partnerships (2015 - 2022)

Origin Story

At Arm, we believe in the need to build a better world for everyone. The benefits of technology must extend to the millions of people globally whose communities have been historically hard to reach or overlooked.

Do No Harm →

Technology does not create new, or exacerbate, existing inequalities

Access →

Everyone has access to technology and its benefits

Tech as a Solution →

The potential of technology is extended to inequality and other challenges

/ Origin Story

Arm’s Social Impact and innovation strategy - part of our sustainable business approach - leads our efforts on reducing inequality and closing the digital divide.

Our work is guided by our business approach: a long-term view on grants and partnerships and a unique partner ecosystem. We look for opportunities where we can add the most value and expertise. We have long invested in start-ups such as Simprints and Amplio that have potentially game-changing technology and engaged with organizations with aligned agendas.

Our partnership work formally started in 2015 with UNICEF Innovation with the launch of the Wearables for Good Challenge, recognizing that wearable technology had the potential to better serve the health needs of women and children.

This became our first public example of working collaboratively to support and scale innovative solutions that drive social impact. Since then, we have focused on reaching those for whom technology is not yet designed and who are not yet benefiting from its potential positive impact.

Wearables for Good



In partnership with UNICEF and design agency frog we launched a challenge to design a cost-effective wearable device to improve maternal or child health. The winners were Khushi Baby, with a near field communication (NFC) enabled pendant that stores electronic health data to track child immunization and SoaPen, a soap crayon that helps limit the spread of disease by encouraging hand washing. Both received financial support, technical expertise, development tools and mentorship as well as help to secure further funding from partners such as Gavi, the Vaccine Alliance and Johnson & Johnson - enabling both winners to take their inventions from paper to the production line.

Wearables for Good Challenge

2000

participants from 65 countries

250

design submissions for the challenge

12

Arm employees mentored challenge winners

\$425,000

value of private sector expertise secured for Wearables for Good incubation program

162M

people reached worldwide with key messages across all media platforms

How we work

We operate in a world where value comes from having multiple and diverse perspectives and where global problems require trusted and collaborative relationships within and across organizations and sectors.

At Arm we aim to add value to the global ecosystem of problem solvers, change-makers, development practitioners and innovators to enable transformative technology solutions. We do this by fostering relationships and building the trust and courage needed to collectively develop responses to complex societal challenges.

Arm makes inclusive innovation happen through three core activities: **insights**, **partnerships** and our **ecosystem**. We work with partners who are experts on the ground to gain the insights to understand the problem and identify solutions and then partner iteratively across our ecosystem to deliver impact and value.

We have learnt that effective integration of our technical expertise - supporting passionate and brilliant Arm employees to apply their insights, capabilities and experience to solve problems with our partners - alongside financial contributions yields the greatest impact.

Our ability to build lasting and trusted connections and convene people across sectors has led to our network of social impact innovators - this valuable ecosystem has brought a critical multiplier effect.

Kirsty Gill
Chief People Officer,
Arm



“*Much of the progress we make as an organization and a society depends on the quality of our interactions with others. The Social Impact & Innovation team has invested considerable time in fostering the relationships within and beyond the organization that are essential to the risk-taking and experimentation so needed for successful social innovation.*”



Insights

The most successful innovations start with a sound understanding of the context, emerging risks and opportunities, societal concerns and most importantly, user needs.

\$100B

potential profit of 6 Big Tech Bets exposed from research with UNICEF

1.9B

vaccine doses delivered to 146 countries through Gavi's COVAX initiative (as of 19 Dec 22)

20M

beneficiaries tracked through Khushi Baby's COVID-19 screening platform across Rajasthan

/ Insights

Learning about and listening to the experiences of the people who need and will benefit from social innovation is crucial for the equitable design and application of technology for people who are currently underserved.

At Arm, through research and market analysis, we identify the best ways technology can improve lives and livelihoods as well as the commercial opportunities that investing in solutions to global challenges can bring. Sharing social innovation and impact insights enables us to convene and catalyze action at scale and helps us lead the tech sector responsibly.

Publications, events and learning labs also build awareness across the company and our wider ecosystem and help ensure a social impact lens is applied to strategy, research and innovation areas within Arm.

designing and implementing technology-based solutions in order to improve children's lives.

Recognising the business rationale for tech actors to invest in social solutions had not been well captured, Arm and UNICEF worked with Dalberg Advisors and Dalberg's Design Impact Group to identify the most promising opportunities for technology actors - tech bets - to grow their markets through delivering positive social impacts for children and their families.

Opportunities to innovate in an urbanizing world

Our insights work in partnership with UNICEF sought to identify the opportunities for technology to address the needs of children in urban contexts.

We developed a handbook: *Innovating for Children in an Urbanizing World* to provide a blueprint for

Thomas Davin
Global Innovation Director,
UNICEF



“ UNICEF and Arm have worked side by side since 2015. As a leader in the tech sector, Arm has been influential and impactful in its reach and expertise, enabling us to together do more and better for young people and their families.

Tech Bets for an Urban World identified what the tech sector can do to improve children's lives in a rapidly urbanizing world and the associated commercial benefits. The focus was on five areas - detailed in the *Innovating for Children in an Urbanizing World* handbook - where the most pressing challenges for children intersect with the greatest opportunities for tech-based solutions: essential services, connectivity & information, infrastructure, human mobility, violence & hazards. For each of these challenges, the most promising - in terms of social impact and market value - technology solutions “tech bets” were determined.

\$2 trillion
value of exposed opportunities

4 billion
lives that could be transformed

\$100 billion
potential profit of 6 Big Tech Bets



Digital Learning



Multi-Modal Skilling



Smart Recruiting



Water Metering



Emergency



Commuter

/ Insights

Improving last mile delivery

The COVID-19 pandemic brought acute attention to the challenges of equitable vaccine distribution, especially in lower income countries.

Before any COVID vaccines were developed, discussion and insights developed with partner organizations focused Arm on the “last mile,” where most vaccine wastage occurs. We explored what role Arm-powered technology could play with partners such as Simprints and Gavi, the Vaccine Alliance. Our COVID-19 response plan with Gavi addressed multiple points where Arm technology touches the vaccine distribution process and the potential role in solving tracking and identity issues required for improved delivery.



Emergency Response

At Arm, we have long recognized the importance of technology and connectivity in emergencies. Funding improvements to the core infrastructure of U-Report meant UNICEF could deploy life-saving information during disasters within 24 hours. During COVID-19, much of our effort went into digital systems needed to support the equitable delivery of vaccines and providing critical information to low-literacy populations through digital tools. Some situations require unrestricted emergency funds, without an immediate role for technology, and recently we have supported UNHCR’s vital work in Ukraine.

1.9 billion

vaccine doses delivered to 146 countries through Gavi’s COVAX vaccine delivery initiative (as of 19 Dec 22) supported by many partners, including Arm.

5.5 million+

vaccination doses tracked in Rajasthan through Khushi Baby-Simprints partnership.

Delivering the Sustainable Development Goals

At Arm, we believe business can and should be contributing where needed to advance the UN Global Goals.

This is why Arm founded 2030Vision a cross-sector collaboration that harnesses the resources, skills and ideas to maximize the impact of digital technology to help realize the Global Goals.

The first stage of the collaboration was research to identify the size of the opportunity and the potential impact of new technologies on the Global Goals.

The founding partners were the UN Global Compact, UNICEF, The New York Academy of Sciences, SustainAbility, Fauna & Flora International, the Centre for Global Equality, Cambridge Judge Business School, British Council, Be He@lthy and Be Mobile (A joint World Health Organization and International Telecommunications Union initiative). 2030Vision is now led and managed by the World Economic Forum.

\$2.1 trillion a year

the size of the commercial opportunity in revenue for the technology sector from digital solutions with a positive impact on the Global Goals.

SUSTAINABLE DEVELOPMENT GOALS



Will Abbey
Senior Vice President,
Sales and Partner
Enablement, Arm

“ Our social impact work is instrumental to understanding the opportunities for Arm technology in emerging markets. The team is also vital for ensuring a social impact lens is applied across the business.

Partnerships

Strong partnerships and industry collaborations are essential to achieve a more connected and equitable world. Fostering cooperation is key to achieving our social impact ambitions at Arm - we co-design and co-deliver solutions that can positively impact lives and livelihoods.

2.4M

children vaccinated in Indonesia as a result of Arm's investment in RapidPro's core technology

2.5M+

people enrolled through Simprints' fingerprint and facial biometrics platform

1M

students and teachers with increased connectivity through the Giga initiative

300K

people reached by solutions developed during the Gates Grand Challenges for WASH competition

/ Partnerships / Empowering Young People

Collaborative work enables us at Arm to apply our business capabilities to complex societal problems.

Our partners leverage our contributions and expertise to create products that can transform lives and livelihoods. The unique skills of Arm’s engineers and developers are vital to the success of our partnerships.

Through collaboration we scale and accelerate innovative solutions that deliver social impact and directly benefit millions of lives.



© UNICEF/Malawi/Lameck Luhanga

Empowering Young People


Enabling young people to develop their capabilities and confidence to maximize the benefits of technology today and to become the innovators and leaders of tomorrow.

Micro:bit Educational Foundation: nurturing creative problem solving

A pocket-sized computer enabled by Arm technology is helping students explore the potential of technology, and develop the skills needed to turn ideas into exciting new inventions. The BBC micro:bit is an easy-to-use programmable device that introduces children to coding.

Using the BBC micro:bit pocket computer as a starting point, the Foundation and partners aim to inspire young people to live their best digital futures.

Impact studies show the micro:bit improves algorithmic thinking and problem-solving skills and



The micro:bit utilises an Arm Cortex-M4 processor and a Nordic nrf52820 SoC that is built around a Cortex-M4. Both are solutions that give kids plenty of opportunity to be innovative.

raises students interest in programming, addressing the technology gender gap by broadening participation amongst girls as well as boys.



“ There were more than 30,000 fires during the last year and many of them killed a lot of people and ate a lot of farmland. So I simply went with my family to the local market to look for a smart alarm system... and guess what? There is nothing available at an affordable price so we thought why don't we make one?

Mustafa, winner in the do your :bit category for 8 to 14-year-olds in the Middle East

Micro:bit Highlights

108,000+

In 2022 more than 108,000 young people were reached in our donations programmes

67,000

donations

25 million

children have learnt digital skills with the micro:bit around the world



Numerous Arm engineers involved in the design and development of the micro:bit

/ Partnerships / Empowering Young People



Giga

Lack of connectivity restricts educational opportunities; without the Internet, children cannot develop 21st century digital skills or access online learning and essential services.

Launched in 2019 by UNICEF and the International Telecommunication Union (ITU), Giga aims to connect every school worldwide to the Internet. Arm is one of various corporate and non-profit partners supporting Giga’s work to map schools’ Internet access in real time through data collection and machine learning.

Better data can help governments and NGOs identify where to invest and impel internet service providers to understand the potential size of the market for digital infrastructure. Arm has held many mapping volunteering sessions which directly engaged employees over the past few years. Mapping work undertaken by Arm employees from 2019 to 2021 helped plot over 75,000 buildings, home to over 300,000 people.



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Code Clubs: educating children in programming

A global network of free coding clubs for 9- to 13-year-olds, part of the Raspberry Pi Foundation. In Code Clubs, students learn creative computer programming. Arm has supported the growth of the network through funding and Arm employees volunteering to set up and run clubs.

3M learners with access to online projects

15,000 registered clubs globally

1800 projects in 32 languages

Giga in 2021

46

countries mapped

1.1M

total schools mapped

3000+

schools connected to the internet

1M

students and teachers connected

700+

Arm employees engaged in mapping

Closing the Digital Divide

Our ambition is to close the gap between those who have access to digital technology and those who do not. We think beyond connectivity to innovative inclusive solutions for the hardest to reach, ensuring that no one is left behind.



Amplio Talking Book: empowering through knowledge sharing

Arm has worked with Amplio since 2011, supporting its mission to provide access to knowledge through audio technology. Amplio’s Talking Book is an easy to use robust, handheld audio device delivering hours of content on demand to low-literate people in rural areas. No connectivity is required, and the unit can use either mains power or locally available batteries. Talking Books give access to information on topics such as agriculture, maternal health, child protection, financial literacy, hygiene and sanitation and malaria prevention. Arm’s support has included free access to software development tools, financial support for R&D, marketing and expansion into 13 countries including specific projects in Ghana on

COVID-19 awareness and Zambia, in partnership with Voluntary Services Overseas, on sexual and reproductive rights.



Amplio Talking Book 2 uses the Cortex-M processor which is designed to enable developers to create cost-sensitive and power-constrained solutions. The Cortex-M4 enabled Amplio to design features that were out of reach before including state of the art encryption of user feedback.



Cliff Schmidt
Executive Director,
Amplio

“ In media-dark areas, hearsay can fill the communication void, with disastrous consequences. The Talking Book provides a lifeline, informing people and empowering them to protect themselves and their loved ones. Arm provided the support Amplio needed to scale-up in multiple languages and reach even more health workers in under-resourced communities.

Amplio 2021 Highlights

1.3M

people reached in 13 countries to date

1,336

Talking Books deployed via groups and households

23

delivered content in 23 local languages

91%

of listeners were women and girls, promoting digital inclusion

218,000

people reached by COVID-19 response in the Upper West Region, Ghana

/ Partnerships / Closing the Digital Divide



Jangala: connecting the disconnected

Jangala’s technology has connected 60,000 marginalized people across five continents. Its first device, Big Box, a rugged device that transforms any internet connection into easily manageable and scalable Wi-Fi, has been deployed through over 60 organizations working in humanitarian aid, education, healthcare, and disaster response worldwide.

Their second system, Get Box, created in response to COVID-19, provides low-cost, secure, and rapidly deployable Wi-Fi for households. It has been used to connect vulnerable residents living in emergency accommodation and to support remote learning.

Arm’s support has contributed to essential development to integrate Get Box reporting tools into Big Box, which will improve capacity and processes around data gathering and impact reporting.

We have also enabled the deployment of five Big Boxes to connect healthcare facilities. In addition, our expertise has helped Jangala to develop its cloud infrastructure.



Big Box is powered by Arm Cortex-A53 and Arm Cortex-A7 and can provide connectivity for up to 100 users by maximizing digital signal, blocking adverts and capping the quality of video streaming. With the addition of low-cost, simple access points, Big Box can serve 2,500 simultaneous users.



Jangala 2021 Highlights

16,439

people directly connected

90,000

people impacted by improved services

15

Big Boxes deployed

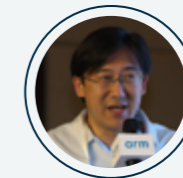
164

Get Boxes deployed

1500+

students connected at the Good Samaritan schools in Uganda

Short-term assignments with our social impact partners give Arm people the opportunity to use their skills to make a positive change in the world. Gen-tao Chiang undertook a placement with Jangala helping the organization to develop components of its cloud infrastructure. He worked on a task where he could add the most value and that was separate from the knowledge the Jangala team already had.



Gen-tao Chiang

Engineer, Arm

“As a DevOps engineer focusing on cloud infrastructure, I’ve always wanted to lend my skills to sustainability issues. Working with Jangala allowed me to work with idealists who are passionate about making the world a better place.”

/ Partnerships / Improving Lives

Improving Lives

Too many people in the world still lack access to basic services including adequate healthcare, education and clean and safe drinking water and sanitation. Scaling up interventions to address these issues is essential to reduce inequality.

Global Grand Challenge: digital innovations for wash in urban settings

The lack of access to water, sanitation and hygiene (WASH) remains a persistent problem in many parts of the world. In 2018 with UNICEF, African Academy of Sciences, Sida and the Bill & Melinda Gates Foundation we launched a global call for digital innovations. The aim was to improve access to safe, clean, affordable water with digital technologies. Further partners, including the World Food Programme Innovation Accelerator, were brought in to create a high-energy, hands-on business incubation and mentoring programme for the grantees.



Grand Challenge Exploration

540+

applications from 47 countries, one of the most popular Grand Challenge Explorations

\$100K

seed funding awarded to 15 shortlisted groups to scope out their ideas

8

teams selected to attend an innovation accelerator bootcamp

300K

people reached by solutions developed during the competition



Joyjeet Kar

Staff Engineer, Arm

Joyjeet won an ArmIdeas Sustainability Challenge in 2018. Employees had to come up with a social impact innovation using Arm-based tools or technologies. Joyjeet and his partner designed Waste Aware, a simple implementation using a micro:bit that alerts users to their resource consumption daily, and can be applied to water, wet waste and plastic waste. Their prize was to attend the WASH Bootcamp in Munich.

“ I had the privilege to attend the Bootcamp in Munich with a few of my colleagues at Arm. It was a wonderful experience meeting the finalists and working with them to refine their proposals around digital solutions for WASH. I was greatly inspired by the amount of hard work, passion and innovation put into solve real-world problems.



* UNICEF does not endorse any company, brand, product or service.

/ Partnerships / Improving Lives

RapidPro & U-Report: encouraging young people to speak out



U-Report is a mobile messaging tool that enables young people to speak up on issues affecting them. The support provided by Arm funded the integration with other messaging platforms such as Facebook and WhatsApp to ensure U-Report reaches even more children.

U-Report is powered by RapidPro, a mobile tech programming tool developed by UNICEF. Arm's support enabled RapidPro to track Indonesia's largest-ever measles and rubella vaccination campaign. Arm's investment in RapidPro is helping UNICEF build better, more resilient health systems.

RapidPro

- 50+** countries using RapidPro in 2021
- 1.5M** households provided with long-lasting insecticide-treated nets in Sierra Leone
- 2.4M** children vaccinated in Indonesia due to 6.8% increase in vaccination



U-Report

- 93+** countries actively using U-Report
- 22M** users worldwide
- 7.5M** messages exchanged across **100+ countries**

Khushi Baby: improving last mile health care delivery

Khushi Baby is a non-profit organization providing digital health solutions to strengthen community-based health care in India. Arm has been supporting Khushi Baby since it won the Wearables for Good challenge with its wearable pendant necklace to store infants' vaccine history in 2015.

Arm helped Khushi Baby forge a partnership with another technology non-profit, Simprints. Together they developed and implemented a novel biometrically-enabled, mobile health application for community health workers. This tool allowed community health workers to conduct a verifiable, digital health census of their own village and report receipt of COVID-19 vaccination at last mile settings.



Dr Ruchit Nagar
CEO, Khushi Baby

“ Arm invested in us when we were just starting out, and its continued support has allowed us to grow into a leading digital health solutions provider for public health in India. During COVID-19, Arm's support was invaluable and enabled us to track vaccinations for millions in rural and underserved communities.

Khushi Baby in 2021

18M+

beneficiaries had their health tracked in India for diseases

5.5M+

COVID-19 vaccination doses tracked in Rajasthan

100K

beneficiaries consented to undergoing a facial biometric registration

60K+

digitally empowered community health workers

/ Partnerships / Improving Lives

Simprints: enabling access to essential services

Simprints is a not-for-profit that uses technology to radically increase transparency and effectiveness in global development. Simprints builds low-cost biometric identification systems that enable over 1 billion people in the world who have no formal identity to access essential services such as education, healthcare and finance. Arm has partnered with Simprints from its earliest days, providing engineering support, funding and the mentorship needed for it to scale.



Toby Norman
CEO, Simprints

“ Arm have been with Simprints on every stage of our journey, from the early-stage design work, to now reaching 2.5 million people with ethical, inclusive biometric technology. The funding and expertise we’ve received from Arm have been transformative for our work, and we’re delighted to continue working together as Simprints transitions to open source.



Simprints’ Vero Scanner is powered by Arm® Cortex®-M0 technology. After scanning a patient’s fingerprints, the scanner creates a unique ID for that patient. It is optimized for fingerprints that are often scarred or worn and uses a secure Bluetooth connection to access the patient’s health records, which are transmitted to their healthcare provider’s smartphone. The Vero Scanner is also lightweight, dustproof, and water-resistant, making it ideal for use in remote or harsh environments. When internet connectivity is limited, it can be used in offline mode, uploading new patient data when connectivity is restored. Data is securely stored with GPS coordinates and time stamps for ongoing tracking.



Pawel Moll
Distinguished Engineer,
Arm

Pawel met Simprints when they were just PhD students at Cambridge trying to solve a problem identified at a Humanitarian Centre* hackathon. The solution depended on a fingerprint scanner which did not exist on the market, so the team had to develop it despite not having any relevant expertise. Pawel was so impressed by their audacity that he offered his electronics and software skills and ended up writing code, soldering, mentoring other volunteers and even interviewing their first full time employee.

*now Centre for Global Equality

“ This was a very intense couple of years and I’d like to think that, aside from technical contributions, I also helped with securing their first big grant from the Gates Foundation. It was matched by Arm and I had a unique opportunity to pitch this to our CEO. It certainly taught me a lot about funding projects in general and particularly in the field of sustainability-related work.

Simprints in 2022

3,768

frontline staff members equipped with fingerprint scanners

2.5M+

people enrolled through fingerprints and facial biometrics

15

health facilities in Ghana with fingerprint biometrics

5%

Data discrepancies reduced from 39%

Protecting the Natural World

People need nature: at Arm we work to reduce inequality and to protect the environment that lives and livelihoods are so dependent upon.

Fauna & Flora International: adopting technology effectively across conservation communities

Technology plays an increasingly important role in helping researchers and conservationists better understand and protect wildlife, and Arm's partnership with Fauna and Flora International (FFI) since 2014 has focused on building capacity to unlock that potential globally.

FFI was one of the founding members of 2030Vision, providing an important voice on the important links between biodiversity and human well-being. With Arm's support, FFI partnered with OI Pejeta Conservancy to establish the Conservation Technology Lab to accelerate the development of technologies for conservation.

The technologies now being piloted, deployed and improved through the lab include Low Power Wide Area Networks (LPWANs) to overcome



challenges of short battery life in remote sensing and wildlife tracking and integration of AI & machine learning into remote cameras.

With Arm's support, FFI has developed a six-month Women in Conservation Technology programme. This year, 15 female Kenyan conservation practitioners received training at OI Pejeta Conservation Technology Lab.



Stephanie O'Donnell
Executive Manager, WILDLABS

“ Working with Arm's social impact and innovation team has allowed Fauna & Flora International to co-create and develop impactful programmes and projects around the world focused on tech for biodiversity and conservation. Arm's assistance has catalyzed investment and support from other partners which wouldn't have been possible without them taking the risk of being a first-mover.

WILDLABS: building an open community of conservationists, technologists and engineers

Arm teamed up with Google in 2015 to provide seed funding for FFI's WILDLABS project – the first global, open online community dedicated to conservation technology. WILDLABS has evolved into a thriving platform, connecting conservation practitioners with

technology companies, universities, investors, and innovators who share information and use technology to protect species and habitats. In 2021, Arm funded the first-ever State of Conservation Technology report. The report used the WILDLABS platform to survey conservationists and technologists on various tools' ability to diagnose, understand and address critical environmental challenges.

WILDLABS.NET

6,800+

members in 120+ countries

6,500

average monthly visitors viewing 20,000+ pages

2,500+

attendees of 27 virtual events hosted in 2020, from 60+ countries

1,050,000+

total page views

Ecosystem

As an industry, we have a responsibility to bring the benefits of technology to everyone through better and more equitable access.

At Arm we maximize our convening power and role as a connector to cultivate a culture of social awareness and innovation across our internal and external ecosystem.

50+

participants in Arm's 2019 Grand Challenges Annual Meeting (GCAM) session across private and international development sectors

450+

data scientists involved in Zindi Flood Modelling Challenge to develop innovative solutions for Malawi

800+

students benefited from Data Science Africa Summer School mentorships and workshop trainings delivered by Arm

/ Ecosystem/ Connecting and Convening

Ultimately, at Arm we want to spur the technology sector and the global community to accelerate inclusive innovation - as well as the policies and enabling context to support it.

This requires convening the diverse perspectives and nurturing the creativity needed to solve complex problems and influence systems-level change.

As a business we rely on a strong workforce of passionate employees who possess a unique set of skills that are vital to the success of our social impact and innovation work. Our ecosystem approach is crucial if we are to be part of the solution to global challenges.



Connecting and Convening

Bringing together tech for good innovators and building a network of organizations with aligned social agendas.

Grand Challenges Annual Meeting: facilitating systems change

Arm has been involved in the Grand Challenges Annual Meeting (GCAM) since 2018. The meeting aims to catalyze collaboration among researchers, funders, and other partners to accelerate innovation for impact in solving the world's most urgent global health and development problems.

In 2019 the meeting in Addis Ababa was hosted by the African Union, Ethiopia's Ministry of Health, Grand Challenges Canada, the United States Agency for International Development (USAID) and the Bill & Melinda Gates Foundation.

Arm co-hosted a track with USAID entitled 'Improving Development Outcomes with Digital Tools', and ran a session on building open, secure and inclusive digital ecosystems. This was the first time that GCAM has held a dedicated digital track, and the first time a private sector organization was given the opportunity to host in the 15-year history of the conference.



The Arm presence was drawn from all corners of the business. Also in attendance were partners UNICEF Innovation, Data Science Africa, Simprints and Amplio Network, sharing examples of their work, and how they embody the Principles for Digital Development – guidelines established to help digital development practitioners integrate established best practice in technology-enabled programmes.



Fran Baker
Global Social Impact and Innovation Lead, Arm

“ The event has helped us to create new connections, with new opportunities for collaboration, as well as developing existing partnerships. It's fantastic that Arm has been welcomed to the table, and recognised as an insightful, purpose-driven problem solver for the world's most urgent challenges.

GCAM Highlights

50+

high-level participants in Arm's GCAM Ethiopia 2019 session

740+

attendees at the GCAM 2020 Virtual Event

/ Ecosystem/ Innovation Challenges

Data Science Africa Summer School: supporting research hubs

Since 2015, Data Science Africa (DSA) has held an annual summer school and workshop to train participants on machine learning and data science methods and provide an avenue for researchers to present work demonstrating the application of these techniques to problems relevant in the African context. To date, we have held 10 events in 7 countries namely Kenya, Uganda, Tanzania, Ethiopia, Ghana, Nigeria and South Africa.

Arm sponsors the summer school, and donates hardware necessary to train participants. Participants have learnt how to build an entire pipeline of IoT

device deployment alongside data collection, analysis, and communication of results. Following the summer school DSA has deployed machine learning enabled sensor systems such as camera traps for wildlife species identification and water resource monitoring systems.

DSA since 2015

- 800+** students benefited from workshop trainings delivered by Arm
- 10+** events and conferences organized by Arm and DSA since 2015
- 5** Arm employees mentored at DSA Summer Schools

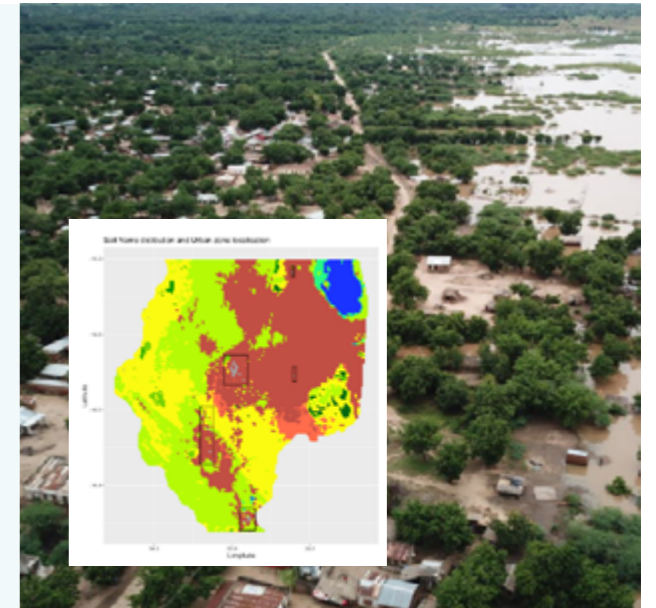


Inclusive Innovation Challenges

Gaining access to a diverse range of perspectives and supporting the development of new ways of social impact thinking and innovative technologies.

Zindi Flood Modeling Challenge: accessing the best minds and ideas

In collaboration with the UNICEF Malawi Country Office Arm in 2019 began work to support communities in flood prone districts. A flood modeling and visualization challenge was put to developers on Zindi - a community of data scientists fostering collective knowledge and expertise to solve Africa's most tenacious challenges. The objective was to build a machine learning model that helps predict the location and extent of floods in southern Malawi. The best solutions were presented to the Malawian government to support policy making and planning.



Zindi Competition Engagement

1559

data scientists enrolled

477

data scientists on the leaderboard

20K+

data modeling and visualization submissions

453K

webpage engagements from 121 countries viewing the challenge

/ Ecosystem/ Innovation Challenges

The Centre for Global Equality's Cultivator: incubating inclusive innovation

As a founding co-funder of the Centre for Global Equality's (CGE) Cultivator in 2016, Arm is supporting CGE evolve an agile, inclusive approach to innovation for sustainable development.

The Cultivator approach differs from standard incubators and accelerators in its long-term commitment to the evolution of innovations from problem definition through to implementation to impact, and the ongoing focus on co-creation with end-users through each stage of the process.



WaterScope - a system designed to enable simple, rapid bacterial testing - was a member of the cultivator and was consequently introduced to the Arm Innovator Program. The Program highlights the projects based on Arm technology that are building innovative solutions to transform the way we live and work. Through the CGE and Arm partnership, WaterScope has enabled the integration and development of machine learning software into its system and developed a PCB for Raspberry Pi integration into the WaterScope imaging system.

Employee Intrapreneurs

Cultivating a culture of social awareness and innovation across our internal ecosystem.

United Nations Young SDG Innovator Programme: nurturing social intrapreneurs

Since 2019, Arm has been part of the Young SDG Innovator Programme (YSIP), a 10-month accelerator where future leaders develop the skills needed to generate business solutions to the Global Goals.

YSIP innovators work on a challenge specific to Arm that can deliver tangible solutions with potential commercial value. For example, ways to measure products' carbon impact alongside power and performance and tackling e-waste with mindful design.

Rosalie and Rene joined Arm's pilot group of Young SDG Innovators in 2019. Their project aimed to integrate sustainability and social innovation thinking into the company's research and development. This involved internal change management and collaboration on how to integrate SDG metrics and measurements directly into processes and project development.



“ It was a privilege to be part of the first SDG Innovators cohort for Arm and be able to support the continuation of the program through recruiting and mentoring future intrapreneurs.

Rosalie Tribe, Sustainability Project Manager

“ Being part of this initiative was a unique opportunity and experience in which I could take my technical background and expose and combine it to real-world issues.

Rene De Jong, Staff Performance Analysis Engineer

/ Ecosystem/ Innovation Challenges

Field Trips: connecting engineers and designers with users

Field trips give employees an opportunity to challenge their thinking about how the technology that Arm has long been at the forefront of - smartphones, wearables, drones and other lightweight portable devices - might enable solutions previously impossible due to cost, power or connectivity requirements. It also exposes the everyday reality for communities experiencing the worst of global inequality and climate change and gives access to the problem solvers and experts within those communities.

During a week in Malawi hosted by UNICEF we saw the devastation caused by floods and the resilience of the communities affected and how vital early warning systems and messaging services are for disaster preparedness and response. We visited one of the very first humanitarian air corridors testing the potential of drones to deliver essential and emergency services and learnt more about the challenges involved with implementing such technology.

Previously employees have visited Zaatari, the largest refugee camp for Syrians in Jordan, exposed how critical connectivity is to people fleeing their homes. Digital infrastructure is vital for refugees to keep in contact with those they have left behind. Furthermore, it is essential to access education and economic opportunities.



ADDA, 2019 © UNICEF



Malawi field trip, November 2019 © UNICEF



Simprints Scanner, 2020



Malawi field trip, November 2019 © UNICEF



Malawi field trip, November 2019 © UNICEF



Kenya field visit, 2016



WASH bootcamp, 2019



Kenya field visit, July 2016 © UNICEF



WASH bootcamp, 2019

“ It was empowering to see Arm-based technology in action and witness its life saving potential. It was also inspiring to see first hand how partnership can accelerate innovation, even in the most challenging circumstances.

Louise Paul, Arm

Final word

Our business shapes our approach to social impact and innovation - at its core, an ecosystem of partners who challenge us to think in new ways and provide diverse perspectives and the expertise to deliver solutions.

From empowering young people to become the innovators and engineers of tomorrow to connecting the disconnected and ensuring equitable access to essential services, we aim to work with others to be a positive driver for inclusive innovation by supporting the development of solutions for or by underserved or marginal groups.

We are proud to have supported social impact start-ups early in their journeys, enabling them to succeed and scale, engaged with some of the most effective social impact organizations and created a system-changing network of tech for good innovators. In addition, we have helped passionate and brilliant Arm employees to apply their capabilities and expertise to solve some of the world's biggest problems.

We have achieved a lot, but the communities we serve and those currently underserved need more.

So we are stretching our ambition to be more inclusive, to positively impact more lives and livelihoods, while working to ensure any potential negative impacts of technology are removed.

And we have been doing the work needed to increase our impact over the next decade. This report consolidates our work to date. Our aim now is to focus on more effective measurement of our activities and to more accurately capture the value and impact created by our social impact and innovation activities and partnerships. As such, we will be well positioned to more effectively extend the gains of technology to many more people and areas yet to benefit.

“*Through social impact and innovation, we're contributing to the future of computing, on Arm. Together. For everyone.*”



Methodology

This section details the challenges, assumptions and methodology of the Arm reach figures and categories. The report also includes metrics from the organizations we work with. Our partners' measurements demonstrate the impact they have achieved, much of it, but not all, with Arm's support.

Measuring Arm's direct impact is challenging. It isn't easy to apply standard metrics across all partners and initiatives. Reach is currently the best metric for consistent measurement - we have identified four major reach categories.

The breadth of our investments and the complexity of social impact measurement make reach the right approach. The numbers presented in this report are all estimates and are as accurate as we could make them, calculated with and approved by our partners.

Categorisation of Reach

The following are the assumptions made to determine exactly what numbers to allocate to each reach category per initiative:

1. Direct Reach

- Defined by a first degree of engagement and/or participation in Arm-funded programs
- Impact that would not have been possible without Arm's support
- Only counts Arm beneficiaries: "those for whom technology is not yet designed and who are not yet benefitting from the positive potential of technology"

2. Indirect Reach

- Breadth of engagement: beneficiaries one degree removed from the direct action or intervention
- Impact that would have been unlikely without Arm's support
- Broader initiatives in which Arm is one of a number of supporters / stakeholders
- Only counts Arm beneficiaries: "those for whom technology is not yet designed and who are not yet benefitting from the positive potential of technology"

3. Catalyst (enabling or supporting innovation)

- Reach to "non-target beneficiaries" (eg: tech-savvy innovators) who are developing solutions that impact the lives of "target beneficiaries"

- Includes reach achieved outside the scope of the partnership but related to it
- Reach of initiatives to which Arm contributed with others and where at least some reach/impact is likely to have happened without Arm
- This category includes Arm's target beneficiaries as well as the innovators, entrepreneurs or solution providers supported by Arm doing work that will positively impact the lives of our target beneficiaries

4. Wider reach (advocacy and sector influence)

- Reach to "non-target beneficiaries" (ie: innovators, policy-makers, general public) who may or may not be developing solutions that impact the lives of "target beneficiaries"
- Includes the reach of publications/communications based on metrics like downloads and page views
- Includes attendees and viewers of events and tech sector gatherings

Employee Engagement Metrics

The term "30,000+ interactions with Arm employees" is used in the report to communicate the total number of touchpoints (passive and active) that SII initiatives have had with Arm employees from 2015 till date.

It is not the number of employees but the number of times that they have engaged with our partnerships.

Looking forward, Attribution is key

Going forward, to be more precise and timely about reach and impact attribution, we will work with our partners to define, measure and report the impact we achieve together. We are eager to measure inequality impact at a programmatic level and to develop proxy indicators to bridge from reach to inequality reductions based on clear and vetted impact pathways and theories of change. Furthermore, where possible, we hope to be able to measure our impact on inequality at source.

We have tried to be as specific as possible and are clear that reach does not give us or our stakeholders a measure of impact or the quality of our interventions, these remain to be assessed per initiative. We are implementing a new measurement and evaluation approach that will help us and our partners develop more effective impact measures.

We will be validating our impact measurement methodology with experts and stakeholders and are open to any and all feedback on how we can improve. You can email Arm's Social Impact and Innovation team at: sustainability@arm.com. Thanks in advance.