

Overcoming systematic global barriers to assistive technology: A new methodology and quick-start testing through a £20m programme

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Abstract

Between March and June 2018, the Global Disability Innovation Hub (GDI) led a consortium tasked by the United Kingdom's Department for International Development (DfID) with comprehensively scoping the barriers to Assistive Technology (AT) access in order to inform the design of a significant new global programme. This paper summarises the evidence examined in that Scoping Report; presents the methodology it proposed for AT2030; and shares the early findings for the subsequent £20m funded programme, called 'AT2030 – Access to Assistive Technology for All' (www.AT2030.org). The Scoping Report sought to unpick the multi-layered and multi-faceted ways in which economic, social, and political factors interact to create barriers to AT for those who need it the most. The team used a mixed-methods approach which was necessarily flexible and iterative, bringing in expertise from the broad partnership. The data showed that the challenge of AT access represents a complex web of market and system failures, compounded by a lack of participation from AT users, that results in a supply/demand mismatch affecting almost a billion people. This making AT access one of the most pressing global challenges. Because of poor data on use, need and impact this 'wicked problem' is largely hidden from view to all but those facing the daily struggles its absence creates. Yet at an individual, family and community level there is no doubt at all about the implications of lack of access to appropriate AT; isolation, economic and social exclusion, poor physical and mental health, and reduced life expectancy. Our evidence suggests that barriers to AT access are about far more than just cost. Issues such as undeveloped policy frameworks, inefficient or non-existent markets, poorly resourced services, stigma and discrimination all play a role, often with a gender impact. The Scoping Report proposed that the resulting global programme (AT2030) trial strategic interventions based on the principles of: building a global mission-led approach; generating better research and data; piloting market-shaping activity; delivering systems

strengthening interventions; harnessing innovation; and building community participating and capacity. Findings from the first ten months of delivery have reinforced and confirmed the need for a mission-led approach to AT, embedded within a normative framework of social development. ‘Amazing early results’ have resulted in a slightly tightened impact framework (theory of change) along with doubled investment. The programme is still in its early stages, but the working assumption is still that the participation of AT users is a necessary factor in the design of innovative solutions, and moreover that the availability of AT products alone is not sufficient to ‘enable a lifetime of potential’ without a systematic approach to inclusion.

Keywords

Assistive Technology, Disability Innovation, AT2030

Introduction

This paper presents the findings of the Scoping Report on Assistive Technology (AT) (1) ‘*On the road to Universal AT coverage*’ (hereafter, Scoping Report) produced by the Global Disability Innovation Hub (GDI Hub) and partners for the United Kingdom’s Department for International Development (DfID) in the early Summer of 2018. It also presents the initial findings from the first ten months of delivery of the subsequent programme intervention, AT2030.

Globally, WHO estimate that only ten percent of people have access to the AT they need to play an active role in their families or communities; to earn a living, enjoy their older age, or to attend school. This need is set to double by 2050 (2) and achieving AT access has been shown to be a necessary factor in enabling the Sustainable Development Goals (SDGs) to be met (3). Yet despite significant progress across the global policy arena¹ and increasingly strategic development of implementation tools² most interventions in this space have been piecemeal, pilot, poorly conceptualised, or not properly evaluated. Good work has been done, but the global impact has yet to be felt.

In early 2018 the United Kingdom and Kenyan Governments announced they would host a joint Global Disability Summit (GDS) on the Queen Elizabeth Olympic Park, home to the London 2012 Paralympic Games. AT was identified as key theme providing the opportunity - political backing, global platform, focus, deadline and engaged stakeholders – needed to drive momentum around AT access. Reminiscent of the focus on disability inclusion generated by London 2012, the GDS offered the chance to research, design and launch a strategic, global approach to AT like never before. This paper provides an overview of the resulting Scoping Research (1), and subsequent quick start programme, AT2030, launched at the Global Disability Summit and starting in September, 2018.

¹ The UN convention for the Rights of Person’s with Disability is now 10 years old

² See for instance the Assistive Product Priority List produced by WHO GATE and product-specific implementation tools (e.g. Wheelchair standards)

The paper is organised as follows: section 2 summarises the approach taken to the Scoping Research, its methodology, findings and consequent recommendations. Section 3 uncovers key, early stage findings from AT2030. Though it is less than a year since the programme began, significant steps have been taken to augment the methodology and so section 4 provides a discussion of the slightly evolved framework and draws conclusions.

Approach

Scoping Study: Methodology

Between March and June 2018, the GDI Hub led a consortium tasked with comprehensively scoping the barriers to AT access to inform the design of a significant new global programme to address these barriers. The resulting Scoping Report (1) sought to unpick the multi-layered and multi-faceted ways in which economic, social, and political factors interact to create barriers to AT for those who need it the most. Through primary and secondary research, the Scoping Report explored the current landscape and the limitations and current initiatives ultimately answering the question: *“How best could a targeted intervention around AT affect positive change for poor, disabled and older people in the Global South?”*

To understand this question, the research team looked at two specific lines of enquiry:

1. What are the barriers which prevent access to AT for the people that need it, with a focus on those living in low resource settings? (Barriers)
2. How should DFID, in partnership with others, best direct its intervention toward overcoming these barriers? (Methodology and Framework proposal)

The team used a mixed-methods research approach, which was flexible and iterative, bringing in expertise from GDI, University College London (UCL), Clinton Health Access Initiative (CHAI), Global Cooperation on Assistive technology (GATE) at the World Health Organization, Leonard Cheshire (LC), Motivation, and input from local organisations across East Africa and beyond. The team worked in partnership with DFID’s Global Health and Innovation and Research divisions, occasionally drawing in other partners, such as USAID, through a series of co-creation workshops as the thinking progressed.

GDI conducted a literature review and held 23 semi-structured interviews focussing on five themes: priorities; examples of best practice; activities that could scale; ideas on geography; and red flags. This was backed up through 18 group discussions, and 10 workshops of external events organised with partners (including co-creation workshops). This data was further enhanced by a secondary policy study of AT in in East Africa; and primary survey research with 22 key stakeholders conducted by Motivation in Kenya. Finally, the emerging conclusions were triangulated with the findings from the work conducted by the Boston Consulting Group for USAID (2) with a focus on Wheelchairs and Hearing Aids and enhanced by additional rapid ‘deep dives’ on prosthetics and glasses led by CHAI with GDI [unpublished, content to be used in Product Narratives, forthcoming].

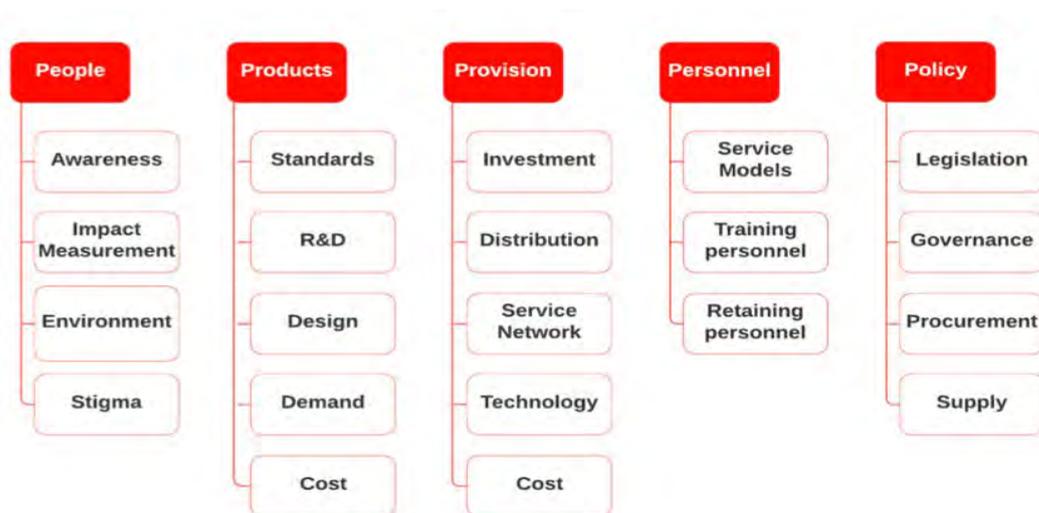
The teams took a participatory and consultative approach designed to enable interactions between stakeholders of different types (sectors, geographies and disciplines) and since GDI was established ‘to build a movement for disability innovation for a fairer world’ (17) we also set clear objectives on inclusion of AT users within the team.

Scoping Study: Findings - Barriers

The Scoping Study found that the challenge of access to, and use of, AT “presents a complex web of market and system failures, compounded by a lack of participation from AT users from design to selection. This results in a supply/demand mismatch affecting almost a billion people, making AT access one of the most pressing problems facing the global health sector, development agencies, governments, communities and families” (1). But, because of poor data on use, need, and impact, this ‘wicked problem’ is largely hidden from view to all but those facing the daily struggles its absence creates. Yet at an individual, family and community level there is no doubt at all about the implications of lack of access to appropriate AT - isolation, economic and social exclusion, poor physical and mental health, and reduced life expectancy.

The principle barriers to AT could naturally be classified under the 5Ps set out by GATE³. These are shown in figure 1.

Figure 1. Barriers to AT as set out in the Scoping Report



The data suggests that lack of resources to purchase AT (at a Government and Individual level) is of course a reality, but barriers to AT are about more than just cost. Issues such as undeveloped policy frameworks, inefficient or non-existent markets, poorly resourced

³ To note – this happened naturally, emerging as themes from the analysis rather than being used as organisational principles, from the start – further evidence for the relevance of the 5Ps

services, stigma and discrimination all play a role often with a gender impact. While levels of AT market development vary across countries, key barriers are often similar.

Scoping Study: The need for a mission-led approach

In designing AT2030, GDI Hub built upon its own foundations – the learning from the 2012 London Games. In the 2012 context the impact and force of a mission ‘to deliver the most accessible Games ever’ (incidentally; the most accessible Olympics as well as the most successful Paralympics), was well rehearsed. From the tone set by Channel 4’s ‘superhumans’ campaign to the beautiful force of Bradley Hemmings and Jenny Sealey’s Opening Ceremony (co-created and performed by disabled artists); London’s 2012 Paralympic Games offered a celebratory revolution in attitudes to disability (see: Iain Dury’s ‘Spasticus Autisticus’ (4)) and used art and performance as an unapologetic, bold and positive presentation of disability and culture. This was empowering, and demonstrably so, not an add on or a tokenistic ‘inclusive’ segment among business-as-usual. It was a fundamental shift in approach. The mission was not to hold a significant sports event, but to ‘inspire a generation’; and largely it did.

Inspired by this, and reflecting on the evidence, the Scoping Report proposed that our mission for AT should be beyond reducing the cost of wheelchairs (as essential as that is) but rather should be to, for instance, enable wheelchair-users to lead their countries, write in their media, teach in the schools their children attend, be innovators and entrepreneurs and leaders in their communities. Our global mission on AT should be to enable a lifetime of potential (we thank David Constantine for coining the phrase) by improving access for all that need it.

Building on the Paralympic Legacy and emerging thinking about ‘mission-led’ approaches to global grand challenges (5) by the UCL Institute of Innovation and Public Purpose (IIPP), the Scoping Report advocated for a global approach to delivering genuinely revolutionary change which was embedded in, and also reached beyond, traditional healthcare systems and approaches, or NGO delivery. This type of mission-led approach would recognise the importance of market-shaping and co-creation, and provide new ways to evaluate dynamic impact and spill-overs of innovations and investments (5). Such evaluative schemes require thinking beyond classic returns on investment (ROI) models, and hence bringing in partners to develop that approach became a key element of the findings (6).

Scoping Study: Methodology (AT2030 initial Programme Framework)

The AT Scoping Report argued unambiguously that an effective approach to AT provision would require an explicit normative framework for intervention. We suggested that DfID’s broad social development lens (as applied to disability inclusion (7)), could provide an impetus for focus on outcomes for AT users, rather than solely addressing the cost of AT products. As later sections of this paper explain, this still requires evolutionary conceptual development as such an approach can be both subjective and political. For this reason, the

Scoping Report advocated for strong, open and diverse leadership of the AT mission, including robust representation of the interests of AT users themselves, ‘unusual suspects’, and Global South nations. Similarly, priorities for intervention – the Report suggested - should be able to be shown to lead to better outcomes for AT users. The Scoping Report concluded by proposing a set of principles (Table 1) on which the resulting programme investment should be established. This investment framework is detailed in Figure 2.

Table 1. AT2030 Principles

A global, mission-led approach with measurable outcomes and clarity of how to ensure a return on investment.
Research and better data are essential to enable countries to understand the return on investment for AT and genuine economic choices before them.
Testing and piloting market shaping accepting there is a way to go before this approach can be scaled. A strong research base will need to be developed, trialled and refined with leaders in the field of market shaping.
Determined work on systemic interventions with national governments. The role of the global community to reduce the cost of AT must be defined in conjunction with national governments, with clear routes for the provision of AT within healthcare, education and other nationally developed systems.
Harnessing innovation and new market entrants – with a focus on leapfrog technology, looking beyond the traditional understanding of products or services and bringing in new players.
Community participation and capacity building – the exclusion of AT users from programme design policy and decision-making leads to poorer outcomes, continued power imbalances and political exclusion – these things are all part of the problem and solutions must be designed to counter this

The AT2030 programme was intentionally designed to be delivered through a partnership of expected (e.g. WHO) and unexpected (e.g. Kota Kita (‘a city for all’, Indonesia) organisations. The programme was not proposed to be geographically specific, though had a focus on DFID priority countries. The intention was explicitly to find ‘the magic in the middle’.

Figure 2. AT2030 investment proposal framework



Implementing the findings of the Scoping Report: AT2030 programme delivery after the first ten months of implementation (September 2018 – July 2019)

The sections below set out what has been done during the first ten months of operation of AT2030; key achievements; what we have learned; and future plans. The programme so far has found confirmation of the broad principles of the initial implementation framework, though has also seen extension of the work into new areas and a redoubled effort on country implementation and innovation. It is a reflection on the hard work of the teams that (then) Minister of State Lord Bates heralded ‘amazing early results’ (8) from AT2030 in March 2019 and announced £9.8m additional resource to triple the impact by 2024.

Research, Evidence and Impact (led by GDI/UCL with ALL Institute and Leonard Cheshire)

GDI with colleagues in UCL’s Institute of Innovation in Public Purpose are leading the work to answer the two main research questions:

1. How can the return on investment for AT be reimaged?
2. What role can a mission-led approaches make in ensuring AT provision globally?

These research questions are intrinsically linked. Findings so far suggest that the mission-oriented approach to AT will reimagine the ROI framework by demonstrating the overall public value that is created by AT, with a view to motivating new investment. In common with many ‘mission-led’ approaches the ROI for AT research is exploring a wider definition of benefit; and is currently scoping case studies. Literature is being searched sourcing from industrial policy, science and technology studies, political economy, methods papers on policy evaluation, narratives from assistive technology users, and case study analyses to understand the impact and potential of the dynamic spill-overs that can be generated by a mission for AT. An initial Working Paper on this topic has been produced by the IIPP and

UCL (6). This sub-programme aids the WHO's World Report on AT through contribution to the Executive Ad Hoc Advisory Board (through Academic Director Dr. Catherine Holloway).

The specific problem of stigma and discrimination faced by AT users has been established as a stand-alone piece of work which focuses on the design and assessment of initiatives to shift people's attitudes towards AT users and thereby increase the demand for AT co-creating a more positive experience for AT users when undertaking their daily activities. This research is led by Leonard Cheshire, working closely with initiatives across AT2030 including the innovation ecosystem in Kenya.

Spark Innovation (led by UCL/GDI with AMREF, OxCATS and the University of Nairobi)

Early Product Trials & initial scoping

AT2030 has now undertaken the first in-person trials of a new lower-limb prosthetic socket (developed by start-up Amparo); and begun planning for a new wheelchair provision model study (led by Motivation) in Kenya; making use of local and digital manufacturing processes. Both innovations included proven product which met user need, however, both needed support with trials to enable the products to be ready for market. Trial designs have been led by the innovators and supported by GDI Hub and Oxford Brookes University new trials unit, OxCATS. The AMPARO trial is underway and will result in 40 amputees receiving lower-limb prostheses. The Motivation study will start this September and conclude this year. These Early Product Trials have helped the AT2030 team to understand what is needed to build the Innovation Ecosystem.

Early Product Trails, combined with additional research with AT innovators have shown that the 'Valley of Death' for AT is much deeper and longer than for non-AT product innovations, partly because of the need for medical trails. This has resulted in a reshaping of the Innovation Hub approach proposed in the Scoping Report, to an Innovation Ecosystem model.

Development of the Innovation Ecosystem 'Innovate Now'

The idea of a single Innovation Hub has evolved into an inclusive innovation ecosystem model which connects into the already thriving innovation ecosystem in Kenya, delivered by AMREF, focuses on three aspects for investment:

1. **Accelerator Programme for AT entrepreneurs:** 4/5 rounds will each support 10-20 innovators providing business and marketing development; supporting the design of experiments; legal and IP support; as well as the provision of domain specific expertise and study design.
2. **Live Labs:** connected to the Accelerator will be spaces where AT users can test and give rapid feedback to innovators on new AT ideas.
3. **Capacity Building of the Innovation Ecosystem in East Africa:** achieved through the creation of an inclusive innovation mission across the ecosystem

'Innovate Now' was launched in June at Nairobi Tech Week and was showcased in July at the Mobile 360 global conference in Kigali. Applications to its first accelerator programme are now open.

Exploring the power of Mobile as AT

GSMA (the Mobile Phone Operators partnership) have led research into mobile access for disabled people supported by GDI Hub and UCL; interviews, diary studies and focus groups are being undertaken in Kenya and Bangladesh to understand the size and effect of the mobile gap on AT users. Initial results are presented in 'Mobile Phones as Assistive Technologies: Gaps and Opportunities' (presented to the GREAT consultation) (9), and will be published in a Disability Gap report for mobile phone operators later this year. It is also intended that a joint approach to innovation between GDI and GSMA will be developed following publication of the findings.

This work has been supplemented by two separate research studies by UCL teams on mobile phone use by people with a visual impairment, and wheelchair users, in the settlement of Kibera, Nairobi, Kenya. Findings are pending but early indications highlight the need for skills training and the importance of social networks when using mobile for AT.

Scale Fund

As part of AT2030 GDI Hub CIC will host an AT Innovation Scale Fund to provide catalytic investment to businesses which have demonstrated a market fit, received initial investment, and have some revenue stream but require further investment to scale. This is forthcoming in 2020 but is being adapted, based on the early findings from this programme.

Drive Availability and Affordability (led by CHAI)

Development of the Product Narratives

To accelerate access to AT, we need to leverage the capabilities and resources of each of the public, private, and non-profit sectors. This element of AT2030 focusses on market shaping, building on what CHAI have learned from market-shaping in other health care commodities such as drugs and vaccines. Market shaping can play a role in enhancing market efficiencies; coordinating and incentivising the number of stakeholders involved in demand and supply-side activities. CHAI has conducted a market and sector analysis on specific priority assistive products (initially wheelchairs, prosthetics and hearing aids, to be followed by glasses and personal digital devices) and are developing strategies to improve the efficiency of how the markets operate in these sectors. The resulting strategy – or Product Narratives (see Wheelchair Product Narrative, launched at GREAT 2019) – is a road map for investment and planned future interventions. The proposed strategies will differ by product area, but often opportunities exist to:

- Strengthen the integration of AT provision into health systems;
- Strengthen procurement processes to rationalize assortment and enhance quality;

- Work with buyers and suppliers to achieve efficiencies in the supply chain that could significantly reduce manufacturing and handling costs; and
- Accelerate the adoption of new technologies that can make the provision of assistive products in low- and middle-income countries more cost-effective.

The Product Narratives being developed through AT2030 will become an essential guide for further activities of the programme, in order to test new approaches to market shaping. They will ultimately be used to shape the investment by ATscale, the Global Partnership for AT, in order to drive sustainable large-scale changes in these markets.

Country Implementation Scoping

The sub-programme is also conducting scoping work in Kenya, South Africa and Indonesia through the CHAI country offices, with partners. In Kenya this has focused on the development of a strategy for improving wheelchairs access; in Indonesia this work is focused on how AT provision can be developed as a strategic priority for the Government as part of the Medium-term Plan; and in South Africa this work is focussed on how innovative approaches to screening and funded-demand for AT products, could offer new solutions.

This early mapping, and the Product Narrative Research, has backed up the initial assumption that funded demand for AT is low across many low- and middle-income countries, and it will be critical to understand opportunities at the country level to partner with governments. As a first step to understand and map a country's 'maturity' toward, and capacity for, providing AT services and inform the development of a road map for AT provision.

For this reason, CHAI is supporting WHO, UCL and partners to enhance and validate a set of the Assistive Technology Capacity Assessment tools – intended as a system level assessment that collects information on the current state of access to AT in a country. Over the next 6 months, the programme will aim to test and validate this tool in more than 10 countries across different regions.

Open Up Market Access (led by WHO GATE with LSHTM and UNICEF)

Priority Assistive Product Specifications & Procurement Guide

WHO GATE led and coordinated the initial draft development of 30 priority assistive product specifications to support countries in procuring high-quality and affordable products. Fifty AT experts from the globe contributed to the initial drafting. The Swedish Standard Institute (SIS) and the China Assistive Devices and Technology Centre for Persons with Disability (CADTC) supported GATE in coordinating the review process, during which the team learnt the importance of having a balance between the comprehensiveness and the practical usability of the specification especially in low resource settings.

Meanwhile, GATE has developed a draft procurement guide to support countries building their capacity, especially in public procurement of AT through competitive process (tender). The draft has been reviewed by colleagues of WHO, UNICEF, CHAI, and ICRC. The draft has

been revised with extended practical examples to demonstrate how to apply the core principles in AT procurement. In late 2019, AT2030 procurement workshops will be jointly organized by UNICEF, WHO and CHAI in Tajikistan and South Africa. During the workshops, we will gather participants from the regions to raise the awareness of the challenges and importance of AT procurement. We expect to learn how to further improve the assistive product specification and procurement guide at the workshop, so that they can be effective tools to support AT procurement in countries. If this is successful, UNICEF – who are working closely with WHO and CHAI as part of the team - will select a few top priority products to add to their supplier catalogue. UNICEF are also trialing innovation in AT for the humanitarian space.

Development of the online AT Training Package for community workforce

The need to move appropriate tasks, such screening or the provision of basic AT, from the realm of a very few University-educated professionals, to well-trained community health workers (or ‘task-shifting’ as it is known) is one of the opportunities the AT2030 programme is exploring. AT2030 investment has enabled the WHO GATE team to expedite and expand development of an online training package, targeted at community-level workforce to equip them to provide basic assistive products (aligned with the 30 product specifications mentioned above). Vision-related modules were piloted in Papua New Guinea in June 2019 and further module development and piloting are planned in the United Republic of Tanzania and Tajikistan within the next 6 months.

Key learning so far is that mainstream health workforce, such as nurses and community health workers, see provision of assistive products as relevant and useful to their role and work; and that an enabling environment (including training) is critical for successful implementation.

‘1-stop’ Service Provision Pilot: Tajikistan

The WHO GATE team is leading (with input from other programme partners) a pilot of a ‘1-stop’ model of service provision in one district in Tajikistan, with the Ministry of Health and Social Protection. Lessons learned will be used to inform future development of similar models in future countries, as well as expand provision to the whole of Tajikistan. Policy reforms have already been implemented, to expand coverage beyond disabled people to other AT users. Procurement of the assistive products is in progress, with workforce training is planned for January 2020. A second pilot country, in WHO African region, will be identified through country capacity assessments.

Development of a Mobile Tool for Population AT Need

The London School of Hygiene and Tropical Medicine (LSHTM) is developing a mobile tool to determine the overall population need for AT by consolidating learning from existing mobile tools that measure the presence of visual impairment (Peek) and hearing impairments (HearScreen). Through survey assessment, the team are also developing ‘decision trees’ to support professionals. Vision and hearing impairment flow charts have been completed;

training has also been delivered and data collection has commenced for example through an eye-health survey in the Republic of the Gambia which includes both self-report and clinical assessment of vision and hearing impairments. LSHTM will conduct a Philippines hearing survey with a pilot of functional hearing loss questionnaire during August. With UCL, LSHTM will develop a portal to collate and disseminate learning from this work and other academic work on AT so that is more readily accessible to practitioners and researchers alike.

Build Capacity and Participation (led by UCL Development Planning Unit with Kota Kita, SLURC and GDI)

The UCL Development Planning Unit (DPU) is looking at community-led solutions and access to AT for people living in Informal Settlements. The team is working with local partners: SLURC in Freetown, Sierra Leone and Kota Kita in Banjarmasin, South Kalimantan, Indonesia to undertake a participatory research programme to understand the aspirations of disabled people living in the settlements selected and their access to AT. It is anticipated that in the later phases, solutions to the priorities of disabled people will be co-designed by the programme experts (drawing in other partners from across AT2030) and the community. The teams undertook initial scoping in Freetown and Banjarmasin during March and April 2019 to identify the case studies and establish the partnerships. Since then, the Sierra Leone Urban Research Centre and Kota Kita have been working in the informal settlements; mapping the neighbourhood, identifying Disabled Peoples Organisations (DPOs), and reaching out to key stakeholders. Initial participatory research session began in July. DPU will present the methodology to the Human Capabilities and Development Association conference in autumn.

In September, the teams will be conducting the household survey 'Rapid Assistive Technology Assessment' (RATA) with 4,000 people. Developed by WHO GATE, RATA is intended to identify the need, use, supply and impact of AT. The teams have been able to feed directly into the testing and refinement of this tool.

Informality and AT

In the Scoping Report it was felt that having a significant aspect of the AT2030 programme focused on the poorest communities was fundamentally important for two key reasons. First, only focusing on 'what works' to understand AT access deficiencies within formal systems and markets would likely miss the realities of everyday lived experience of many/most poor disabled people leading to less well designed or even unworkable solutions. Data is exceptionally poor but we know disability and poverty are mutually reinforcing and both consequence and cause of each other (10) and hence unmet need for AT by the poorest communities is probably higher.

Second - and less well-envisaged at Scoping Report stage – was the role of informal markets in the provision of AT products and maintenance. On study suggests that as many as 46% of assistive products are 'home-made, self-made or made by family members' (11) and up to 37% of people said that they or their family maintained the devices (12) which indicates a

substantial impact of this sector which cannot be ignored. It is this second aspect which we intend to explore more through two supplementary studies led by DPU, focused on the role of informal markets. This research will be conducted alongside the Country Capacity Assessment but with a more appropriate methodology for this kind of data collection and will inform the final CCA tools that are validated and shared publically.

Grow a Global Partnership (led by GDI for the AT2030 programme with ATscale, the Global Partnership on AT)

Support for ATscale set up

AT 2030 has been able to support the set-up of ATscale, the Global Partnership for AT (13) in a number of different ways, including by supporting the work partners feeding into ATscale (UNICEF, WHO, CHAI, and GDI) and the ATscale secretariat staff, from Autumn 2019. AT2030 has also been able to provide resources toward emerging partnerships aligned with the development of ATscale's strategy and priorities including team members to develop partnership approaches with the Chinese Disabled People's Federation (CDPF) and resources to enable the Government of Kenya to participate in key face to face meetings of the group.

What has been particularly successful so far is the funding of CHAI through AT2030 to develop Product Narratives (see also, above) which will inform the near-term priorities for ATscale's action and investment plan for market building and market shaping.

The initial Scoping Research, as well as activities in the first 10 months of the AT2030 programme delivery have contributed in a meaningful way to the ATscale strategy development (14). Having this 'quick-start' programme in place has significantly aided and resourced the set-up of ATscale; facilitated it becoming operational; guided strategic planning; and continues to provide test cases for strategic and global activity.

Supporting other partnership approaches

Also emerging are flourishing partnerships with Indian network (through UCL); Asian Development Bank; East Africa Innovators and Tokyo 2020, which will be developed further into year two of AT2030.

Discussion

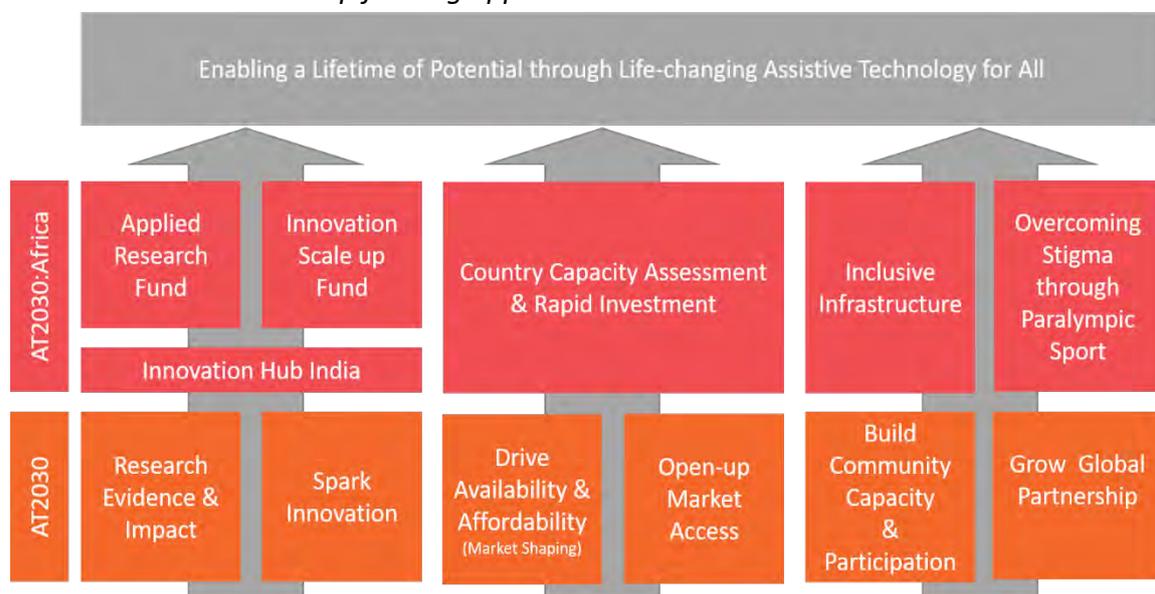
Refining the methodology and programme extension

As a result of learning from the first ten months of programme delivery, a second Business Case for AT2030 (called AT2030 Africa, as it has a stronger geographical focus here) was approved by DFID (in late July 2018). The additional resource will extend into the following areas of enhanced investment:

- Applied Research Fund (GDI, WHO, UCL and Royal Academy of Engineering): support for the World Report on AT and a research call to address evidence gaps.

- A larger Innovation Scale Fund (GDI, UCL and delivery partners): to back AT innovations to scale
- Exploration of an Innovation Hub in India
- Country Capacity Assessments Pilots in 10 countries and a new rapid implementation fund (WHO, CHAI, UCL and GD with National Delivery Partners) to allow two countries to trial the National AT provision model
- Inclusive Infrastructure in six case study cities (GDI and RCA) – a frequent result from AT2030 research is the need for improved accessibility of the built environment, building on the 2012 accessibility approach (15)
- Overcoming Stigma through Paralympic Sport (Loughborough University, with GDI and the IPC) harnessing effect of the Paralympics 2020 to shift in attitudes

Figure 3. AT2030 and Scale-up funding approach



A tighter focus on impact

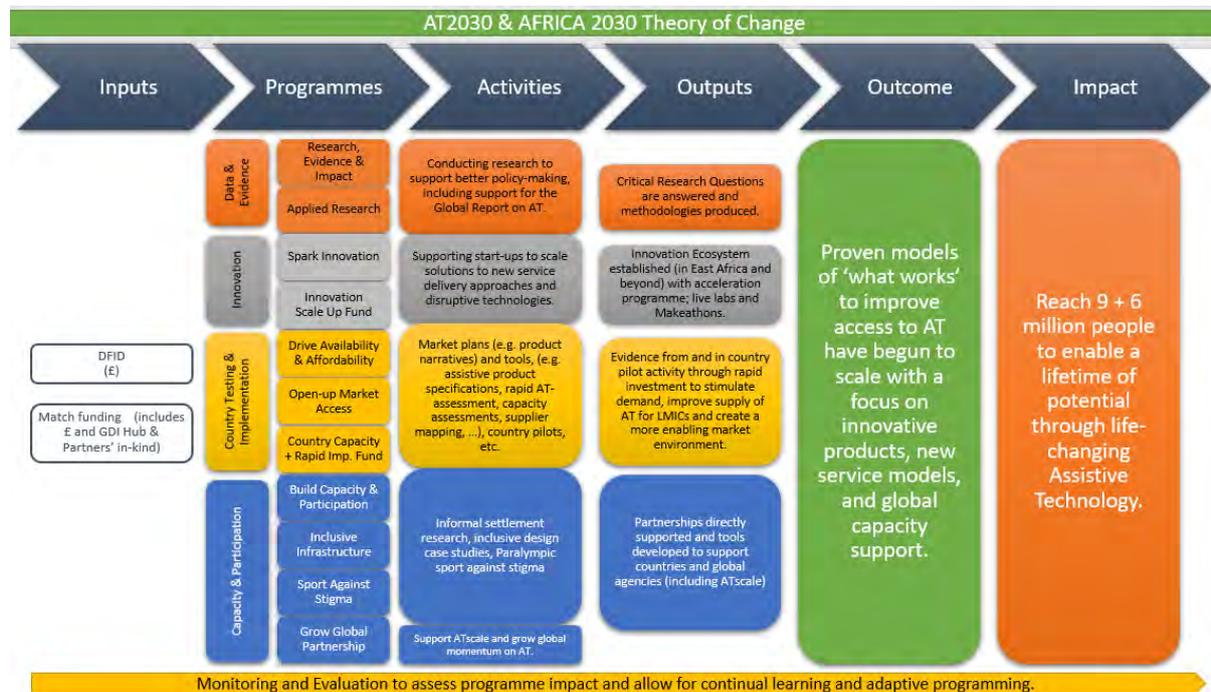
Building on rapid learning from AT2030, the additional £9.8m will reach 9m people directly and 6m indirectly through the core programme, which will now deliver:

- 40 new disruptive technologies with potential for life-changing impact and 25% on track to scale;
- 10 innovative service delivery models, frameworks and methodologies created;
- 80 new start-ups supported;
- 20 entities (countries or organisation) implementing AT2030 ideas
- 20 research questions answered;
- 10 Country Capacity Assessments undertaken; 5 country action plans and 2 rapid investment pilots
- 10 consortia or partnerships supported to strengthen systems

- 6 cities/countries supported on inclusive design so that AT can be used in the built environment;
- A programme to tackle stigma and discrimination across Africa (6)

The Theory of Change (ToC) has been re-worked, refined and simplified though the underlying logic remain unchanged:

Figure 4. AT2030 Theory of Change



Participation as method as well as outcome

In 'Development as Freedom' Amartya Sen states that "the enhancement of human freedom is both the main object and the primary means of development" (16), understanding the expansion of freedom as the removal of the primary sources of 'unfreedom' (poverty, poor economic opportunities, social deprivation, inequality, repression, and lack of public facilities) (ibid, p3). Assistive Technology is essential for those of us that need it in order to experience this freedom and to live lives of value - to ourselves, to our families, to our communities, and to our nations. If we understand human freedom as our normative approach, initiatives which are primarily concerned with enabling people to do, or be, whatever they wish to - by expanding their capacity with AT - necessarily require their participation in the process as a *means* as well as *end*.

The AT2030 programme is still in its early stages, but our working assumption is that the participation of AT users, and other non-traditional partners, is essential for the design of the disruptive solutions which will bring AT to more of the 900 million people that currently lack it. A mission of this size and scale can only be successful if it affords opportunity for all to turn their talents toward a common solution. AT2030 is just one of many programmes that will be needed to catalyse change, but we are determined to play our part.

One thing is certain; however necessary it is to increase the availability of AT products (and it is) the evidence so far suggests that alone this will not be sufficient to ‘enable a lifetime of potential’ for AT users. For that, we must ground our global mission within a systematic approach to inclusion which has the capacity to flourish over time.

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