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Harnessing technology and innovation

This paper briefly explores accessibility to assistive technology for people with disabilities in low- and middle-income countries. It outlines the main challenges to universal, affordable provision of assistive technology and considers ways forward. Assistive technology has been identified as a focal area within the broader context of technology and innovation and this paper will inform the plenary discussion on *'Harnessing technology and innovation'* at the Global Disability Summit on 24 July, serving as a background document for all attendees.

The Global Disability Summit is bringing the international community together to share learning, make new commitments and place inclusion for people with disabilities at the heart of international development. As well as Harnessing Technology and Innovation, the Summit will focus on three further themes critical for inclusive development: Dignity and Respect for All, Inclusive Education and Routes to Economic Empowerment.

1. Introduction

Only one in ten people in the world today who needs assistive products and services to maintain or improve their lives or promote their independence has access to them. These products include traditional aids such as wheelchairs, hearing aids and walking sticks, and increasingly digital solutions, such as apps to convert speech to text. They are chiefly utilised by people with disabilities and older people, and they can transform the lives of those who use them. However, they are very often either too expensive in low- and middle-income countries for most people with disabilites to acquire, or else they are simply unavailable.

Assistive technology (AT) is the umbrella term covering the systems and services related to the delivery of these assistive products. A lack of access to appropriate AT can result in serious long-term health problems, impact on mental wellbeing and processing, and cause secondary disabilities. It can also compound poverty, exacerbate exclusion and lessen the effectiveness of almost every development initiative undertaken.

2. The global framework

The **UN Convention on the Rights of Persons with Disabilities** (CRPD) states that all people must have access to available and affordable AT, and stipulates that states should take effective measures to enable access to AT. However, though the Convention is now ratified by 177 countries, access to AT remains an unrealised opportunity for most people with disabilities.

The **2030 Agenda for Sustainable Development**[1] is the first global framework which recognises the need to "leave no one behind", including people with disabilities. Without access to appropriate AT, the Sustainable Development Goals (SDGs) cannot be achieved equitably.[2]

To help countries comply with the UNCRPD and achieve universal health coverage, the World Health Organization (WHO) launched the **Global Cooperation on Assistive Technology**[3] (GATE) in 2014 in partnership with organisations of and for people with disabilities. In May 2018, the World Health Assembly voted on a resolution to bring forward AT for those who need it around the world.[4] This committed member states to develop new policies, provide adequate training and services, ensure appropriate AT is available, develop a list of priority products, invest in research to collaborate on procurement and distribution, collect better data, and promote inclusive design. It also committed the WHO to prepare a World Report on Assistive Technology by 2021.

3. Background

There are one billion people with disabilities in the world today, a figure set to double by 2050.[5] A lack of access to AT results in children with disabilities being excluded from education, and older people and adults with disabilities being excluded from work and economic empowerment, as well as the ability to participate in their communities. It affects the impact of a wide-range of development initiatives aimed at reducing poverty.[6]

In humanitarian emergencies, for example if people are escaping conflict and crisis, ATs can be life-saving. In such situations, and following them, there is often a surge in need for AT as people with pre-existing disabilities often lose their assistive devices, while people who have been injured may need them for the first time.

To date, organisations have delivered disparate pilot or uncoordinated interventions in the field of AT. Though they may have been individually successful, they have failed to address the underlying

barriers to access. The net effect of this fragmented approach is that interventions have failed to contribute towards sustained progress towards universal access to AT. In addition, while technology and innovation are beginning to take disability and accessibility issues into the mainstream in high-income countries, in low- and middle-income countries simple digital solutions are still far from reach.

4. Barriers to harnessing technology

The barriers to accessing AT are increasingly understood through the framework developed by the WHO GATE initiative which focuses on people, personnel, provision, products and policy (see Figure 1). Challenges are particularly evident in the following areas.

Markets

AT markets do not function optimally, with information, supply, distribution and demand failures resulting in high costs and lack of access, especially for the poorest people. In addition, AT markets do not function in, and are not designed for, low- and middle-income countries. Most assistive products are designed for high-resourced settings and often do not directly translate to poorer countries, either in design or price. Market failure in AT markets includes: imperfect information (a lack of understanding about what technology is actually available to buy and use and poor data) and principal-agent issues (the people who buy AT are not necessarily the people who use it); imperfect competition (thereby impacting innovation, availability and price); and an inaccurate cost/benefit methodology that doesn't capture the full benefits of AT to its users.

Services

National and local services which should ensure the right products reach the right people at the right time often do not exist in low- and middle-income countries. The result is that people with disabilities who require AT, often including very low-cost items like glasses or walking sticks, frequently receive the wrong items (which can at times be life threatening) or, more often, no AT at all. In particular, provision of AT is not reaching the most remote and marginalised of communities as there is a lack of systems and limited coordination with community rehabilitation programmes to ensure provision goes beyond urban populations.

Data, knowledge and understanding

Access to AT is rarely recorded or quantified in low- and middle-income countries, and there is a lack of evidence and data about the need for AT, its use and the impact of its provision. Where data exists, it is poor, actors are uncoordinated and evidence of impact is weak. This is one of the biggest challenges for access to AT.

A key issue has been a lack of awareness and understanding about what AT actually is and what it can do. Often disability issues are seen as 'aid' or 'charity' projects. This creates disincentives to multi-sector investment.

5. Delivering AT for all who need it

There is an emerging global consensus on the barriers to accessing appropriate AT. A new WHO AT Resolution framework (see Figure 2) is providing a framework for addressing these barriers. This framework starts with ensuring policies which allow for both the financing of AT and data collection. This cascades into developing the environment for products to be purchased, including the creation of product specifications and enabling market shaping activities. Personnel are the

next level of the framework – ensuring methods to train a sufficient number of high-quality personnel. Finally, products are provided to people through healthcare systems.

Although there is no coordination of action or consensus on 'what works', new and accessible AT, a global focus on disability and lessons learned from market shaping in drugs and vaccines mean the time is ripe to change the landscape for AT.

The following areas are priority for consideration:

Shaping the market

Globally, there is a need to significantly scale up the provision of affordable and appropriate AT to meet the SDGs. It is widely recognised that a global-level initiative to adopt a market-shaping approach to establish a sustainable supply of low-cost, high-quality AT is an imperative. This is based largely on the experience of the highly successful global response to drugs and vaccines which has seen considerable reduction in cost and increased access in the last two decades (for instance, the significant reduction in price of antiretroviral drugs for HIV).

Sustainable supply could be achieved by addressing the current conditions that lead to market failure, and creating an attractive business opportunity for manufacturers to provide a product that meets the needs of older people and people with disabilities at a price affordable to the buyers. But each AT product is different, and requires a tailored approach to market shaping which is grounded in the facts of the specific product, market, supplier and context in which the buyer and user of the AT exist. Depending on these factors, key elements of this approach may include: stimulating or organising demand among procurers (such as national governments and insurance providers); value-based negotiation to achieve lower costs; and improving market information for manufacturers and/or addressing regulatory barriers to the introduction, sale, provision and use of the AT.

Initial scoping, research and stakeholder engagement shows that many crucial elements for successful market shaping approaches are not yet in place so further testing is needed to develop a practical way forward.

Systems-led interventions

Shaping the market alone will not solve the problem of AT access. Allied services and systems need to be able to ensure that the right products reach people in the right way and have a positive impact. Market shaping could be coupled with a systems-based approach to build the capacity of governments to respond to AT needs and strengthen the systems that operate within health (and wider) sectors. Significant investment is needed for this.

AT needs to be embedded in healthcare systems with AT provision in accessible environments and following WHO standards. The Ministry of Health can be the driver for change and lead implementation across ministries.

The two-pronged approach of market shaping and system-led interventions could see a revolution in AT provision within a generation.

Collaborative action

The engagement of partners beyond the relatively narrow 'disability and development' sphere is essential. The UK Department for International Development (DFID) has been working with a number of stakeholders, including other bilateral donors, UN organisations, WHO and those with deep expertise in shaping markets in health sectors, to consider how a joined up, mission-led global approach could revolutionise access to AT. The partnership is focusing on sparking innovation and new solutions, driving the affordability and availability of AT products, strengthening systems,

building capacity and participation, generating data and evidence, as well as galvanising investment and political support. Such global, cross-sector partnership action can catalyse change and amplify existing work.

Data and evidence

It is essential that countries start to generate better data and evidence of what is working. Mobile technologies and ICT more generally must be harnessed to collect evidence of AT usage, breakage and repair as well as the success of training programmes for personnel, and provision training for users. Big data sets need to be created which allow for systematic analysis. Nationwide statistics on AT need and use are essential first steps. need and use are essential first steps.

Working with people with disabilities

To date, there has been a systematic exclusion of AT users from the design, policies, programmes or interventions related to AT. This reinforces the exclusion of people with disabilities from public and political life, especially for groups facing intersectional discrimination such as women with disabilities. It also decreases the effectiveness of the decision-making process. This can be tackled by implementing measures to increase the agency and participation of people with disabilities, and can include developing role models and ambassadors for AT.

6. Questions for consideration

Through positive collaboration, the Global Disability Summit is an opportunity to catalyse political will and ensure people with disabilities are driving the change required to make inclusive development a reality. The following discussion points are intended to help us clarify ideas and develop next steps to universal, affordable access to AT.

- How can the international community work together to deliver the global mission on AT?
- Can market-shaping approaches be deployed to take AT to scale?
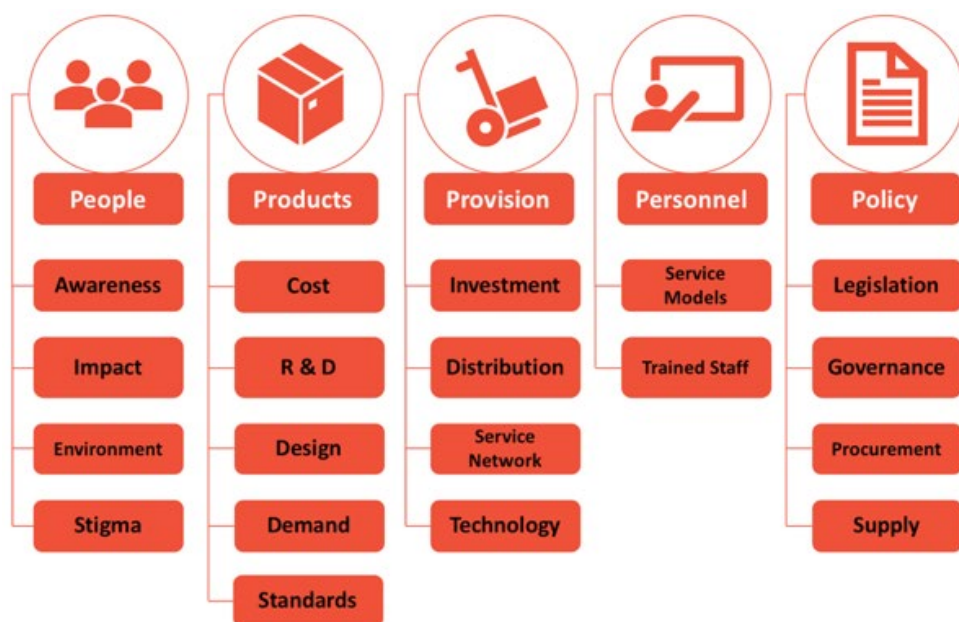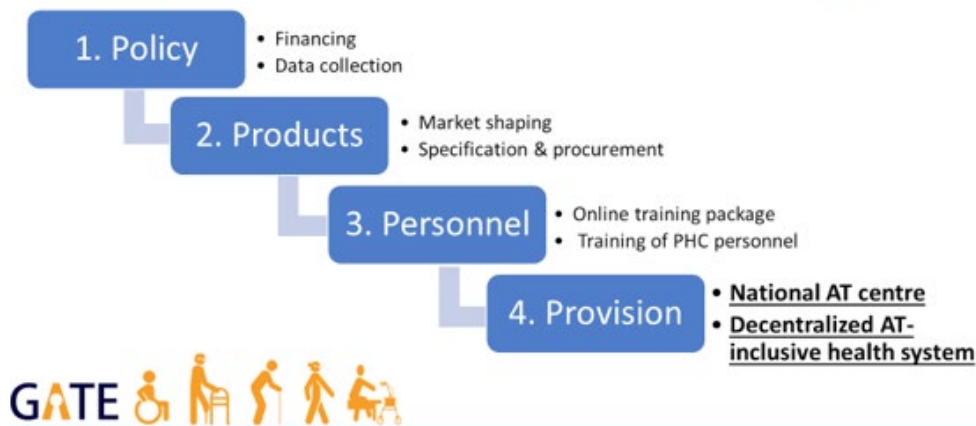- How can we amplify community-led solutions and build the participation and engagement of AT users?

Figure 1: Identified barriers which prevent access to Assistive Technology[7]

Figure 2: WHO AT Provision Framework[8]

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