POLICY BRIEF

Policy Brief on Assistive Technology (AT) and Employment

ATscale
GLOBAL PARTNERSHIP FOR ASSISTIVE TECHNOLOGY

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International Labour Organization

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ATscale, the Global Partnership for Assistive Technology, is a cross-sector global partnership with a mission to transform people's lives through AT. It catalyses action to ensure that, by 2030, an additional 500 million people in low- and middle-income countries get the life-changing AT they need.

ILO, The International Labour Organization (ILO) is the United Nations agency for the world of work. We bring together governments, employers and workers to advance social justice and promote human-centred decent work through employment creation, rights at work, social protection and social dialogue. The ILO vision of a renewed social contract anchored in the Decent Work Agenda affirms social justice as the foundation of lasting peace, shared prosperity, equal opportunities and a just transition.

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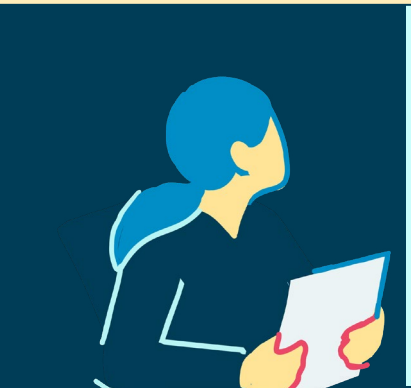

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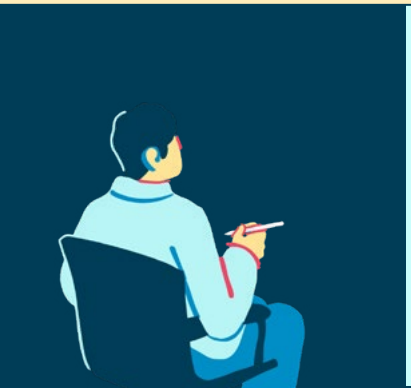


Executive Summary

Key Messages

- Assistive technology (AT) acts as a critical enabler to overcome barriers to employment and has the potential to transform access to employment for persons with disabilities and other AT users.
- Despite the existence of policies in many low-and middle-income countries mandating reasonable workplace accommodations for employees with disabilities and AT users, the lack of funding mechanisms and coordinated AT infrastructure has prevented these policies from being effectively implemented.
- Significant barriers hinder access to assistive technology (AT) for employment, including issues related to awareness, affordability, availability and usability, impacting both AT users and employers.
- Since the informal sector accounts for the majority of employment in most low- and middle-income countries, and since persons with disabilities are more likely than those without disabilities to work in the informal economy, it is imperative that policies and funding mechanisms address the AT needs of users across diverse employment contexts.
- Creation of enabling workplaces and a robust AT ecosystem for employment requires a multi-faceted approach where governments, employers, AT suppliers, organizations of persons with disabilities and other stakeholders work collaboratively to raise awareness, improve affordability and supply chains, promote inclusive policies, and invest in research and data.

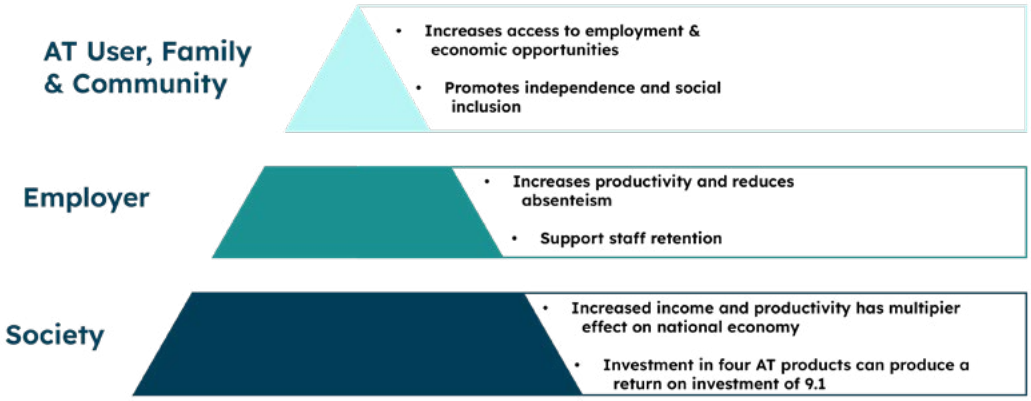
Overview

This policy brief highlights the crucial role of Assistive Technology (AT) in expanding employment opportunities for persons with disabilities and other AT users in low- and middle-income countries (LMICs). AT enables users to perform job tasks, communicate with colleagues, navigate workplaces and participate in professional development opportunities. When combined with universal design principles, inclusive workplace policies and a disability-confident culture, AT plays a key role in facilitating equitable access to employment. The cascading impact of providing AT for employment purposes extends beyond individual AT users, benefiting families, workplaces and society as a whole. By enhancing employment opportunities, productivity and social inclusion, AT has the potential to reduce poverty levels and reliance on unpaid support amongst AT users while also improving workforce retention, decreasing absenteeism, and contributing to economic growth and inclusive communities.

In Srnivas, a man working in his farm. His wheelchair supports him to tend to his land.

Photo credit: Motivation/ ©David Constantine

Despite the potential of Assistive Technology (AT) to enhance workplace accessibility, productivity and career advancement, only 5-15 per cent of those in need of AT in LMICs can access the assistive products they require, compared to 90 per cent in high-income countries. This disparity, coupled with educational and workplace barriers, limits employment opportunities for persons with disabilities, who face significant disability employment gaps globally. Barriers such as high costs, lack of awareness, inadequate policies around reasonable workplace adjustments and AT financing mechanisms, and supply chain limitations significantly hinder AT access, limiting employment opportunities and perpetuating socio-economic inequalities.



Infographic:

Key benefits of the provision of AT for employment purposes

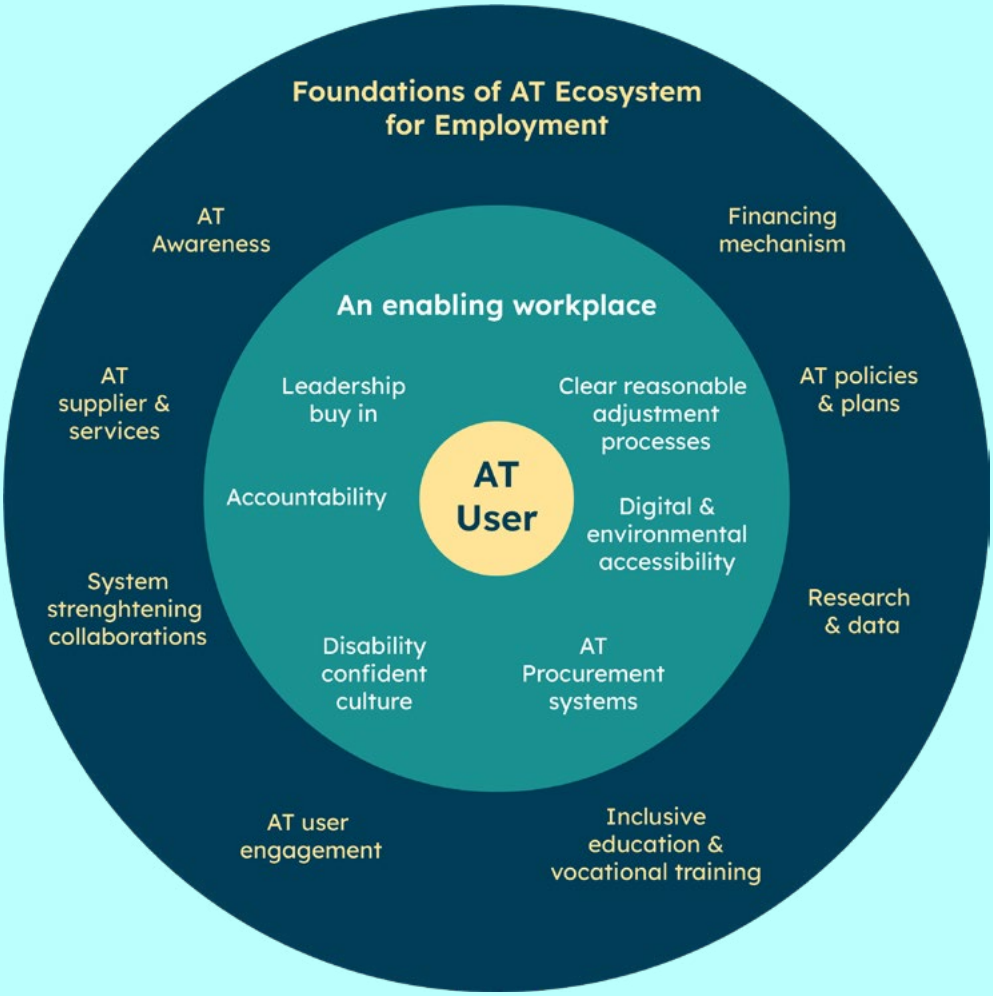
Addressing these challenges requires the integration of AT provision into employment policies, inclusive workplaces and systemic reforms to ensure affordability and availability of appropriate AT across diverse formal and informal employment sectors. Through advocacy, policy changes, and market development, some countries have made progress in expanding AT access, offering valuable insights for other LMICs that are working to bridge the disability employment gap.

While AT has traditionally been viewed through a medical and human rights lens, it must also be acknowledged as a socio-economic issue that affects individuals, their households and society as a whole.

This policy brief highlights the need for governments to prioritize investment in AT in order to improve employment opportunities and drive broader economic and social benefits.

Building the Foundations of an AT Ecosystem for Employment

Central to this policy brief is the understanding that better access to AT for employment purposes cannot be achieved by AT suppliers and employers alone; it requires the foundations of a robust ecosystem. A framework for developing an effective AT ecosystem is outlined, highlighting key areas and emerging practices to enhance affordability and accessibility to AT within the workplace.



Infographic:

Constructing an enabling AT ecosystem with the AT user at the centre.

The policy brief also elaborates on specific actions that different stakeholders can take to strengthen the AT ecosystem with a focus on:

- Developing policy frameworks that promote the role of AT in reasonable workplace accommodations and that are accompanied by effective financing mechanisms.
- Supporting local AT innovation and production while building capacities of a workforce that can meet the need for local AT servicing and maintenance.
- Designating leadership at government level to drive national efforts around AT and employment, and at an employer level to oversee the implementation of inclusive policies and workplace adjustments.
- Building collaborations to strengthen global supply chains and address market barriers to accessing employment-related AT.
- Raising awareness among AT users, caregivers, employers, policy makers, community and industry leaders, and organizations of persons with disabilities of the potential of AT to improve employment outcomes, and disseminating information on the range of AT available to meet diverse needs in different employment contexts.
- Conducting research and gathering data to provide an evidence base concerning unmet needs and the impact of AT on employment outcomes.

1 Introduction

Globally, over a billion people live with some form of disability, with approximately 80 per cent residing in low and middle-income countries (LMICs)[1]. Assistive Technology (AT) plays a crucial role in bridging accessibility gaps, fostering social inclusion, and enabling access to employment for this group of people in addition to the many others who will rely on AT as they age.

1 WHO, World Report on Disability, 2011.

However, access to AT remains inadequate, with only 5-15 per cent of those in need of AT in LMICs able to access these life-enhancing tools in contrast to 90 per cent in higher-income countries.[2] Alongside environmental, institutional, and attitudinal barriers, this inequity significantly limits opportunities for AT users in LMICs to access decent work.

The disability employment gap is a global issue: only one in three persons with disabilities is in employment and those that are working are more likely to earn less than people without disabilities.[3] The risk of exclusion from education, employment, or training is twice greater for young persons with disabilities than for young people without disabilities.[4] Employment is a cornerstone of socio-economic inclusion, yet individuals with AT needs, particularly persons with disabilities and those with chronic illnesses, face significant barriers to workforce participation, including less access to secondary school education,[5] negative perceptions of disability, inaccessible workplaces, limited access to skills training and a lack of access to reasonable workplace adjustments, which include modifications to the workplace environment and provision of AT.

In addition to addressing stigma and inaccessibility, AT is one part of the solution to tackling socio-economic disparities and underemployment among persons with disabilities and AT users. AT has the potential to enable its users to perform tasks, communicate, and navigate workplaces effectively. Lack of access to assistive tools and devices means that many persons with disabilities and other AT users struggle to attain and retain employment and to meet their full potential in their workplace. However, systemic challenges such as limited availability of affordable AT and insufficient support services continue to hinder access to AT, especially in LMICs. Integrating the provision of AT into employment policies and programmes is critical to fostering inclusive work environments and mitigating these barriers.

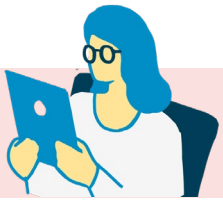
2 WHO and UNICEF, Global Report on Assistive Technology, 2022.

3 ILO, New ILO database highlights labour market challenges of persons with disabilities, 2022.

4 Mastercard Foundation, Disability-Inclusive Employment: Understanding the Context, 2023.

5 UNICEF, Fact Sheet: Children with Disabilities, 2022.

This policy brief is a joint initiative by the ILO and ATscale to highlight the important role of AT in enhancing employment opportunities for persons with disabilities and other AT users in LMICs. The brief aims to improve understanding of the barriers that AT users and employers face in accessing AT for employment purposes and the impact of AT on accessibility, performance and career advancement. Evidence-based policy recommendations are put forward to support governments, employers, AT suppliers, organizations of persons with disabilities and other actors, all of whom have a vital role to play in strengthening the foundations of a robust AT ecosystem for employment.



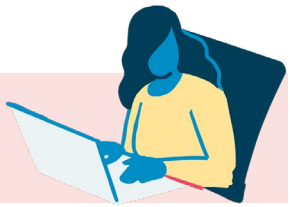
1.1 Statement of the Problem

As part of its mission to promote access to decent work for persons with disabilities, the ILO recognizes the transformative potential of Assistive Technology (AT) to act as an enabler to overcome barriers to employment and foster more inclusive workplaces. However, several challenges hinder access to AT in the employment sector:

- High costs and limited funding for AT.
- Lack of awareness and training among employers and employees about how AT can act as a reasonable adjustment to address environmental, digital, communication and task-related barriers in the workplace. Similarly, a lack of awareness and training in educational institutions which prepare the future workforce.
- Insufficient policies and regulations that mandate reasonable adjustments in the workplace and highlight the provision of AT as a critical part of this process. Where these policies do exist, problems may still arise due to a lack of enforcement, inadequate support services to provide guidance on appropriate adjustments and failure of policies to address local availability and affordability. Moreover, a significant proportion of the workforce in LMICs are active in the informal sector, which usually lacks regulatory oversight.
- Supply-chain issues in LMICs limit access to appropriate AT.

In addition, the increasing digitization of recruitment and workplace systems presents new barriers, as many of the new systems are incompatible with assistive software or fail to meet accessibility standards, effectively excluding AT users from job opportunities.

This policy brief explores emerging areas of promising practice in the provision of AT for employment purposes. A strong disability movement, advocacy campaigns, policy reforms, and market shaping have enabled some countries to expand AT access within the labour market, offering valuable insights for other LMICs that are embarking on this journey to redress global imbalances in accessing AT for employment.



1.2 Methodology

In order to better understand the current context surrounding the provision of Assistive Technology (AT) in the labour market in LMICs, a comprehensive literature review was conducted of academic literature, grey literature, webinars, online portals and knowledge platforms alongside a review of existing policies relating to non-discrimination in employment and workplace adjustments. The desk review was complemented by extensive consultations with 65 people representing a cross section of stakeholders, including: AT users, AT developers and suppliers, policy makers, development partners, multinational companies, national companies, employment services, organizations of persons with disabilities, business disability networks, workplace adjustment services and mainstream technology providers.

2 Assistive Technology and Employment

Assistive technology plays a foundational role in making workplaces accessible in the first place and provides AT users with tools to increase their employability options. It enhances the functional abilities of individuals by addressing barriers to accessing the workplace and engaging in work tasks, subsequently supporting AT users to seek, secure, and retain meaningful employment.

AT includes: physical products such as prostheses, orthoses, wheelchairs, spectacles, and hearing aids; digital tools such as software and apps that support planning and communication; or environmental adaptations such as ramps, hoists and grab rails. Within workplaces, AT may also include tools and equipment that are adapted to enable a person to perform a specific task or tasks, whether in an office environment, a factory, an agricultural setting or any other workplace.

The functional abilities in the specific context of this policy brief relate to an individual's capacity to find and retain work, and also to progress within their chosen profession, by enabling them to:

- Perform job tasks that would otherwise be difficult or impossible
- Communicate and collaborate effectively with colleagues
- Access and navigate the physical work environment
- Participate in training and professional development opportunities
- Manage time, tasks, and workflow
- Access information in alternative formats.

What is Assistive Technology and who uses it?

Assistive technology (AT) is an umbrella term for assistive products such as wheelchairs, hearing aids, prostheses, eyeglasses or digital devices, and their related systems and services. AT can facilitate people's ability to move, communicate, and see better than before.

Alongside universal inclusive design principles,[6] inclusive work policies and a disability inclusive ethos, AT is a crucial enabler that can support more people with functional impairments to access work. In the context of ageing populations, increasing prevalence of noncommunicable diseases, and evolving work modalities (such as remote and hybrid work), AT is increasingly vital for sustaining employment across the life course. AT also helps prevent people from being forced out of the workforce prematurely.

This policy brief acknowledges the challenges in distinguishing between AT used by people to meet daily functional needs in their homes and communities and that which is required for work purposes. It is particularly difficult to make the distinction in LMICs where so many people do not have access to the AT they need for essential daily functioning. Globally, less than 10 per cent of people who require hearing aids have access to them[7] and only 5-35 per cent of those needing wheelchairs report having their need met,[8] with those in LMICs most at risk of having unmet needs. The absence of structured systems for provision of AT exacerbates inequalities and the lack of reasonable adjustment processes in workplaces limits employment opportunities for AT users in LMICs.

Elijah Karue, born with a visual impairment, is able to operate a computer independently, access online resources, and shop online using screen readers and navigation aids.

Photo: ATscale/ Carlisto Ochieng

6 Universal Design involves creating environments, products, and services that are accessible, understandable, and usable by people of all ages, sizes, abilities, and disabilities. By addressing diverse needs throughout the design process, universal design ensures spaces and systems are not only functional but also enjoyable and inclusive for everyone. Source: Centre for Excellence in Universal Design.

7 WHO, Assistive Technology Fact Sheet, 2 January 2024.

8 WHO, Wheelchair Provision Guidelines, 2023.

3 Frequently Used Assistive Technology for Employment

The type of AT required will vary across different employment contexts and will be tailored to the needs of AT users, specific work tasks and the work environment. AT is not a one-size-fits-all solution: it must be personalized, context-specific, and aligned with the preferences of the user.

It is important to note that new technology is rapidly expanding the range of AT available and people with similar needs may not necessarily choose the same solution. However, the list below offers a non-exhaustive overview of commonly used AT categories in employment settings. These examples are illustrative (not prescriptive) and aim to showcase the diversity of AT technologies available for use in the workplace.

Please note that this list does not include everyday assistive items commonly in use, such as wheelchairs, hearing aids, white canes, walking sticks, orthotic supports, and prosthetic limbs.

SOFTWARE	HARDWARE
• Speech recognition software • Text-to-speech readers • Speech-to-text software • Goal-setting apps • Task-management apps • Mood-regulating apps • Closed captioning • Eye-gaze-control software • Travel aids including wayfinding apps • Note-taking apps • Mind-mapping software • Grammar software • Braille translators • Image description software • Screen magnifier software	• Large screens • Screen magnifiers • Adaptive keyboards and mice • Joysticks • Switch buttons • Headsets and sound amplification systems • Communication boards • Smartphones and tablets
FURNITURE	**MOBILITY AIDS**
• Ergonomic chairs and desks • Ergonomic aids such as footrests, monitor arms and raisers, anti-fatigue mats and arm supports • Pressure-relief cushions	• Standing frames • Grab rails • Hoists • Ramps

Many of the AT products listed above are particularly relevant to office workplaces and it is important to recognize that various other forms of AT are used in other sectors. New developments in artificial intelligence and in-built accessibility features in smartphones are transforming AT markets and offering greater access to more affordable AT solutions. Innovative adaptation of tools and equipment is also increasing access to employment for people with AT needs in agricultural and manufacturing contexts. Ultimately, ensuring access to AT in the workplace is not about prescribing a fixed set of tools, but about creating flexible, inclusive environments that empower individuals to work with dignity, autonomy, and full participation.

Assistive Technology innovations in the Agriculture Sector

The Agri-Lab model uses a Human-Centred Design approach to create a space for participatory innovation where farmers with disabilities co-design accessible agricultural tools, equipment, and work processes alongside technical experts and create AT solutions that are adapted to their specific contexts. This subsequently increases access to agricultural livelihood opportunities for more persons with disabilities.

Initially developed by Light for the World, the model has now been scaled and integrated into local agricultural planning more widely, and recognized for its impact inclusive rural development. Agri-Labs are a key component of the SPARK programme led by Light for the World, ILO and Procasur to support IFAD in advancing Disability Inclusive Rural Transformation in Burkina Faso, India, Mozambique, and Malawi. There is potential for this model to be scaled further to encourage the development of simple, cost-effective designs using locally sourced materials.

3.1 Artificial Intelligence as Assistive Technology

Artificial Intelligence (AI) offers significant potential to improve access to employment for AT users and is filling gaps in the AT market to support communication, transport, productivity and social inclusion in the workforce. AI applications are increasingly used as a form of reasonable adjustment within employment to:

- **Support the job search process.** AI can streamline job application processes and assist with formatting written text.
- **Prepare candidates for the interview process.** Career Interview Readiness in Virtual Reality (CIRVR) is a VR and AI-powered coaching system for job interviews that uses avatars, cameras, microphones, and sensors to help people with autism prepare for interviews by simulating open-ended questions and potential distractions.[9]
- **Enhance digital accessibility** through generating closed captions, alt text, speech-to-text transcription and visual descriptions. Eye-gaze-control systems enable users to control their computer via eye tracking, voice-command applications can facilitate control of the work environment as well as other tools and equipment and non-standard voice solutions exist to enable people with atypical speech patterns to use voice command technology. AI tools are being used to produce closed captioning for deaf users and audio descriptions of objects and people for individuals with visual impairments whilst wayfinding apps support people with visual impairments to navigate workplaces.
- **Improve productivity** by providing literacy support, predictive text, planning and mind-mapping tools. AI platforms can break down information in ways that can be adapted to meet the user's needs.
- **Create more interactive ways of delivering training** through augmented reality.

9 Adiani, D., et al., Multimodal job interview simulator for training of autistic individuals, Assistive Technology, April 2023.

- **Facilitate the commute to work.** AI-powered smart wheelchairs and self-driving cars can increase autonomy and independence and address the barriers that many persons with disabilities face in commuting to work.

However, alongside these opportunities, several risks need to be addressed in order to ensure equitable outcomes and avoid perpetuating further discrimination against persons with disabilities. There are concerns that, if AI screening tools are trained on historical data that replicates past hiring patterns, the tools may exclude persons with disabilities by overlooking candidates who differ from employees who were hired previously.[10,11]

Eleni Epuri uses AT to access her job assembling parts at Steinel Electronics, Moldova and workplace adjustments have been made to facilitate access.

Photo: Ion Buga/ILO

10 European Disability Forum, Artificial Intelligence, inclusive education and employment: opportunities and challenges, 2023.

11 Scott-Parker, S., AI Powered Unfair Recruitment, 2023.

Care needs to be taken to mitigate against any potential bias during the development and testing stage of AI tools, by ensuring that data sets and algorithms used to train AI are inclusive and account for the diversity of persons with disabilities. Many AI- driven tools, apps, and interfaces may not be designed with inclusive practices in mind, creating new barriers rather than removing them. For example, facial recognition tools may struggle to identify individuals with atypical facial features or expressions. Data privacy is also a concern as there is a risk that sensitive personal data collected by AI tools, such as data related to health and behaviour, could be misused if not properly secured.[12] To address these risks, it is crucial to use diverse data sets, apply universal design principles, consult with persons with disabilities during the design, testing, and evaluation phases, adopt ethical standards and audit processes[13] that enable early identification of bias, and embed robust data protection measures and inclusive design principles from the outset.

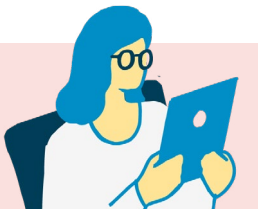
Sharing Assistive Technology solutions through AI

DISH (Disabilities Innovative Solutions Hub) is an AI-powered platform developed by EnAble India in collaboration with the Zero Project to connect persons with disabilities and stakeholders to assistive solutions, including products, processes, and programmes. By using AI and integrating data from a wide range of sources, DISH enables users to search, develop, and replicate emerging solutions to a specific question via both WhatsApp and a platform-based interface, making it easily accessible in multiple languages. The platform helps bridge knowledge gaps regarding AT by making AT solutions discoverable and scalable while offering free access to essential information and resources.

12 Bossewitch, J., et al., Digital Futures in Mind: Reflecting on Technological Experiments in Mental Health & Crisis Support (University of Melbourne, 2022).

13 Employer Assistance and Resource Network on Disability Inclusion (EARN), Use of Artificial Intelligence to Facilitate Employment Opportunities for Persons with Disabilities, 2023.

3.2 Mobile Technology as Assistive Technology



Mobile phones, other smart devices and access to the internet are frequently cited as the technologies that do most to advance the independence and the social and economic inclusion of persons with disabilities. Several research studies explore how mobile technology is being used as AT in LMICs and how smartphones can be more accessible, affordable, and effective for persons with disabilities.[14,15]

In a study on the impact of mobile phones on the lives of persons with disabilities in Kenya and Bangladesh, it was found that mobile phones play a crucial role in supporting the livelihoods of persons with disabilities by enabling financial transactions, business management, and communication with customers. From facilitating small business operations to securing loans, mobile connectivity allows individuals to work more efficiently, access essential services and engage in economic and social activities that would otherwise present difficulties due to mobility or communication barriers.[16]

ATscale, in partnership with Google and the Global Disability Innovation (GDI) Hub, jointly funded a research project to assess the feasibility and impact of providing mobile phones as AT solutions for persons with disabilities in LMICs, with a specific focus on individuals with visual and hearing impairments in Kenya, India, and Brazil. The study explored the potential of Android smartphones as effective AT for individuals with visual and hearing impairments. Preliminary findings indicate that smartphones, when paired with digital literacy and reliable internet access, can serve as powerful, multifunctional assistive products for persons with disabilities.[17]

14 International Telecommunications Union, The ICT Opportunity for a Disability-inclusive Development framework, 2013.

15 Raja, D.S., Bridging the Disability Divide through Digital Technologies World Bank Group, 2016.

16 Jahan, N., et al., Inclusion and Independence: The impact of Mobile Technology on the Lives of Persons with Disabilities in Kenya and Bangladesh, in: 2020 IEEE Global Humanitarian Technology Conference. IEEE: Seattle, WA, USA.

17 The Centre for Accessibility in the Global South, IIIT Bangalore, Global Disability Innovation Hub, UCL, Android Phones as Assistive Technology, 2025.

For individuals with visual impairments, smartphones can partially substitute traditional assistive technologies such as braille readers and standalone screen readers. Built-in tools like TalkBack, Google Assistant, and Lookout offer key functionalities to support visual navigation and access to information. For individuals with hearing impairments, smartphones can also serve as partial substitutes for hearing aids in certain cases. Features such as Sound Notifications, Live Transcribe, and Live Captions provide real-time support and accessibility. These applications can effectively complement national sign languages and other tools designed to enhance sign language communication. However, many of the accessibility features offered by mobile phones remain unused due to lack of digital skills or lack of awareness among users.[18]

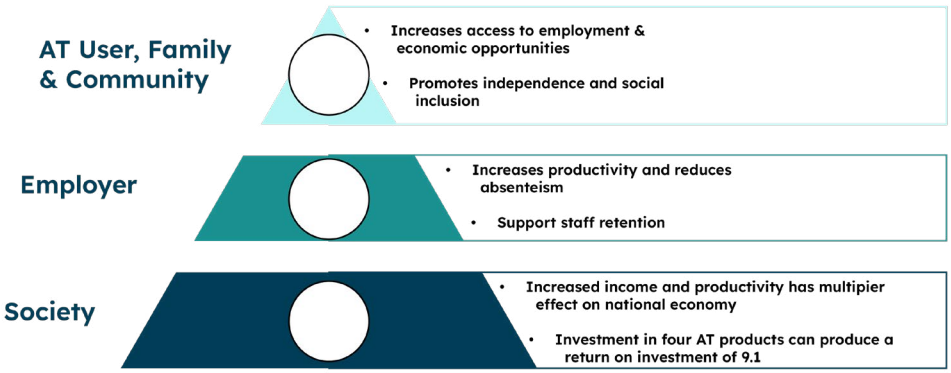
Digital skills training is essential for enabling people to maximise the potential of smartphones as AT and to make use of all of the features that smartphones offer for supporting access to employment, such as text-to-speech, speech-to-text, magnifiers, eye gaze control and wayfinding and navigation apps for people with visual impairments. Addressing this digital divide is essential for ensuring equitable access to employment and broader social participation. Smartphones present a much more affordable and accessible option than bespoke AT and are particularly valuable for micro-entrepreneurs. When combined with inclusive digital ecosystems and capacity building, mobile technology can serve as a powerful equalizer, supporting autonomy, productivity, and meaningful economic participation.

18 Barbareschi, G., et al., Bridging the Divide: Exploring the use of digital and physical technology to aid mobility impaired people living in an informal settlement. In The 22nd International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '20), October 26–28, 2020, Virtual Event, Greece. ACM, New York, NY, USA.

4 Benefits of Assistive Technology

The benefits of AT across the life course have a cascading effect that extends beyond the AT user to their family and local community, their employer or workplace and to society at large. Access to AT enhances employment opportunities, productivity, and social inclusion for individuals while contributing to reducing poverty and reliance on unpaid support.

AT has the potential to improve workforce retention, reduce absenteeism, boost economic growth and foster more inclusive, sustainable communities



Infographic:

Key benefits of the provision of AT for employment purposes

Assistive Technology generating job creation

NeoMotion enhances employment opportunities for persons with disabilities in India through its customized wheelchairs and motorized add-ons that transform wheelchairs into vehicles, enabling users to work as delivery drivers. NeoMotion have partnered with Zomato, a food delivery company, to establish the Livelihood on Wheels initiative, which trains persons with disabilities in digital skills, financial literacy, and app navigation to support their work in food delivery across 30 cities in India. The initiative has generated nearly $400,000 in income for 500 delivery partners with a goal of expanding to 1000 participants in 2025.

Beyond food delivery services, NeoMotion products have been used in diverse jobs, including supervision of farming work in rural areas, lottery sales, mail delivery and milk distribution, demonstrating the transformative impact of mobility solutions on economic independence. The motorized wheelchair also provides a solution for overcoming inaccessible transport systems and enabling people with physical disabilities to commute to work.

4.1 Individual/Household and Community Benefits of Assistive Technology:

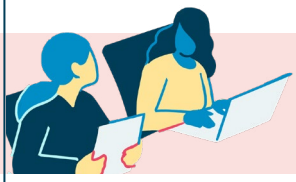
- Enhances access to work opportunities by enabling AT users to perform tasks that may have been challenging without appropriate AT.
- Enables AT users to overcome barriers to finding out about and applying for job opportunities, commuting to interviews and workplaces, and progressing and engaging in professional development opportunities.
- Facilitates social inclusion in the workplace.
- Based on investment in four AT products (hearing aids, prostheses, eyeglasses, and wheelchairs), research reveals that access to AT can impact lifetime earning potential in LMICs yielding about US$100,000 in average increased income across the lifetime of a child who receives AT[19] by enhancing access to education and employment.
- Boosts individual productivity, allowing users to earn more in their job. ATscale estimates that access to the four focus products can increase an AT user's productivity by average 16 per cent.[20]
- Increase in the income of individuals can help offset some of the other additional costs associated with disability, such as higher healthcare and transport costs, and can contribute towards breaking the cycle of poverty and disability.
- Enables users to have a longer working life by mitigating some of the challenges associated with ageing and by improving health outcomes. An ongoing source of income is vital in countries that have limited social protection systems in place for older people.
- Gives AT users more choice as to their career path.

19 ATscale, The Case for Investing in Assistive Technology, 2020.

20 ATscale, The Case for Investing in Assistive Technology, 2020.

- The push towards more localized production models for AT can also present employment opportunities for AT users in this growing market at design, production and maintenance stages as more attention is focused on the sustainability of AT provision models. Research into localized production models explores whether a circular model of production, placing end users closer to the AT value chain, could be a more sustainable approach.[21]
- Meeting the unmet need for AT can generate nearly US$2 trillion in additional family income by creating time for family caregivers to engage in paid work.[22] By enabling users to perform more daily tasks independently and to engage in employment, AT reduces reliance on unpaid family support – particularly support from women and girls – allowing them to pursue education and employment opportunities.
- Research in India on the correlation between access to AT and employment found that the provision of AT significantly increases labour force participation among persons with disabilities, with a 26.6 per cent increase overall and an 86.7 per cent rise in urban areas. However, the same research found that accessing appropriate AT remains a challenge, and that improvement of literacy, vocational skills, and infrastructure are also crucial enablers for enhancing the employment opportunities of people with disabilities.[23]

4.2 Employer-level Benefits of Assistive Technology:



- Use of Assistive Technology (AT) reduces turnover and absenteeism. A Microlink survey of 3000 employees found that both line managers and employers who had received workplace adjustments (including provision of AT) reported increases in productivity as well as a significant drop in absenteeism in the 12 months following a workplace adjustment.[24]

21 Oldfrey, B. et al., More Environmentally Sustainable Models of Product Design, Manufacture and Service in a Post-COVID World?, Sustainability, 2021, 13(19), 10867.

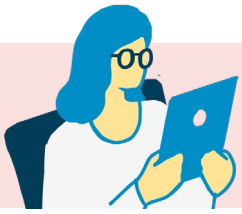
22 ATscale, The Case for Investing in Assistive Technology, 2020.

23 Rajasulochana, S.R. et al., Does access to assistive technologies enhance labour force participation amongst the disabled population? Evidence from India, International Journal of Manpower, July 2024.

24 Microlink, Workforce Presentation, 2016.

- Implementing processes to provide AT helps to create a supportive and enabling workplace for all existing staff (with and without disabilities).
- Use of AT positions organizations/employers as an attractive workplace for a diverse talent pool, enhancing reputation and competitiveness.
- In countries where quotas exist for hiring persons with disabilities, the provision of AT supports companies to meet these quotas in a meaningful and sustainable way.
- Normalizing the presence and use of AT in the workplace enhances employee engagement and psychological safety, improves team morale and reduces stigma. It also helps to mitigate risks associated with non-compliance with employment laws.
- AT supports the retainment of qualified staff. The cost of doing nothing can be higher than the cost of providing AT if experienced staff members leave a company because they cannot access AT, making it necessary to hire and train new staff members.
- Research by Accenture analysing disability inclusion practices and financial performance across 140 companies in the United States found that companies which prioritize disability inclusion outperform peers, achieving 28 per cent higher revenue, double net income, and 30 per cent higher economic profit margins.[25] The provision of AT is one of the key enabling factors that the report highlights as crucial for building an inclusive workplace.

4.3 Society-level Benefits of Assistive Technology:



- The economic benefits of providing AT extend beyond individual users through a multiplier effect. Higher employment and productivity among AT users lead to greater household incomes, increased tax revenues and stronger community spending, generating a virtuous cycle of sustained national economic growth.

25 Accenture, Getting to Equal: The Disability Inclusion Advantage, 2018.

- Research by ATscale shows that provision of AT to everybody who needs it worldwide would generate more than US$10 trillion in economic benefits over the next 55 years.[26] The Accenture report states that, in the US, if only 1 per cent more persons with disabilities joined the workforce, US GDP could increase by up to US$25 billion.[27]
- Investment in four AT products (hearing aids, prostheses, eyeglasses, and wheelchairs) can produce a return on investment of 9:1.[28]
- Ability of AT users to access work and lead more independent and healthy lives reduces their reliance on social welfare and healthcare systems.
- Further interest in AT stimulates market demand for AT products and services and can contribute to increased job creation in the AT sector itself and its broader supply chain.
- Use of AT contributes to more inclusive societies where everyone is enabled to participate and contribute to their full potential across the life course.

4.4 An Enabling Environment is Crucial

It is important to understand that the benefits of AT, which have been described above, cannot be achieved simply by the provision of AT. In order for AT to be used effectively, it needs to be complemented by several other factors: accessible digital and physical environments that apply universal design principles, a disability-inclusive workplace, and training in digital skills.

26 ATscale, The Case for Investing in Assistive Technology, 2020.

27 Accenture, Getting to Equal: The Disability Inclusion Advantage, 2018.

28 ATscale, The Case for Investing in Assistive Technology, 2020.

Socio-economic impact of eyeglass provision

The largest recorded impact of an AT intervention on productivity and income is seen in two studies related to the provision of affordable reading glasses.[29,30] The gains are particularly notable among women, who constitute a large portion of the workforce in industries like tea picking and garment manufacturing. Correcting near-vision impairment allows individuals to work longer, improve product quality, and return to work after periods of inactivity.

A randomized control trial in Assam, India, found that providing US$1.80 reading glasses to ageing tea pickers increased their productivity by 22 per cent, with those aged over 50 seeing a 32 per cent boost. The study highlighted the economic and social benefits of improved vision, where increased production leads to higher earnings, reducing household and community poverty levels and positively impacting the health and wellbeing of family members.[31]

The THRIVE study in rural Bangladesh revealed that provision of reading glasses increased earnings by 33 per cent, helping economically inactive individuals to return to work and improving overall quality of life. Study participants included workers in agriculture, artisan crafts, teachers, tailors, shopkeepers, and mechanics. With 50 per cent of people aged 35-65 experiencing presbyopia, the study demonstrates the vast economic potential of affordable vision correction.[32] A further study by Orbis found that unaddressed near-vision impairment among female garment workers in Bangladesh is linked to lower monthly salaries, with over 20 per cent of women aged 30-35 already affected despite being in their prime working years and those living in rural areas being particularly impacted. Provision of affordable glasses could boost earnings by US$70 per year, benefiting both workers and factory productivity while helping to lift more women out of poverty.[33] The research suggests that investing in accessible eye care represents a cost-effective strategy for poverty reduction and economic development in these regions.

29 BRAC, New report: Reading glasses boost income by a third in low-income communities, 2024.

30 Orbis, Glasses study shows huge productivity boost for workers, 2018.

31 Orbis, Glasses study shows huge productivity boost for workers, 2018.

32 Sehrin, F. (2024) The effect on income of providing near vision correction to workers in Bangladesh: The THRIVE (Tradespeople and Hand-workers Rural Initiative for a Vision-enhanced Economy) randomized controlled trial, PLoS ONE 19(4): e0296115, 2024

33 Orbis, Better Eye Care Could Boost Female Garment Workers' Pay, 2022.

5 Barriers to Accessing Assistive Technology in Employment

Key barriers that hinder access to AT include issues related to awareness, affordability, availability, and usability.
Even when employers have the will to support access to AT as part of a reasonable adjustment process, they encounter a number of systemic challenges involving policy, funding, and coordination that limit their ability to provide AT.

At an intersectional level, these barriers are amplified for women, people in rural areas, and underrepresented groups of persons with disabilities who have faced greater challenges accessing education and, subsequently, employment opportunities.

5.1 Barriers for Assistive Technology Users

- **Lack of Awareness and Information:** Many people, including potential AT users, employers, and government officials, are not aware of the AT, which is available, or of the potential benefits of AT in improving employment outcomes. Such lack of awareness is more prevalent in rural areas. There is also limited awareness within vocational colleges of how equipment can be adapted to enable an AT user to engage more effectively in some vocations. This is further amplified by inadequate exposure of children and young people to AT in education settings. Many people do not know where to look for advice on AT for want of a consolidated information platform to share solutions.
- **Affordability:** The cost of AT, driven by factors such as importation, taxes, and distribution, makes it unaffordable for many, especially in LMICs where persons with disabilities face greater challenges accessing paid employment. Those living in rural areas are further disadvantaged as availability of products is often limited to urban locations and the cost of travelling to a city is in itself prohibitive.
- **Lack of Maintenance, Repair, and Support Services:** Even when individuals are able to access AT, the absence of reliable maintenance and technical support services can significantly undermine its sustained use. Breakdowns or malfunctions without access to local repair services, spare parts, or trained technicians can lead to long periods without functional AT, jeopardizing employment continuity.
- **Digital Access and Skills:** Many persons with disabilities remain digitally excluded due to inaccessible websites and unaffordable technology. A lack of digital skills required by employers further reduces employment opportunities even if accessible systems are in place.

- **Systemic and Attitudinal Barriers:** Social prejudices and stigma also deter individuals from using AT. A recent survey of AT users found stigma to be the second largest barrier to their use of AT.[34] Some employees are concerned about negative reactions from supervisors if they request workplace accommodations.[35] Even when a workplace adjustment process is in place, persons with disabilities may fear that they will not be hired if they disclose their disability or request AT at the recruitment stage. A Deloitte study across 20 countries found that workplace accommodations that are highly specific and tailored to individual needs, such as assistive technologies, tend to have the highest rejection rates. For example, alternative communication methods were requested by 30 per cent of respondents but rejected in 63 per cent of cases and assistive software solutions had a 27 per cent request rate, yet 63 per cent were denied.[36] Cost and implementation challenges were cited as significant factors in the rejection of accommodation requests.
- **Inequity in access:** Huge inequalities play out between persons with disabilities who have been able to access an education and who are therefore more likely to obtain roles in larger companies with systems in place to provide AT, on the one hand, and persons with disabilities who work in the informal sector, on the other hand. Research shows that women with disabilities are doubly disadvantaged when it comes to accessing AT for employment purposes as they face poorer employment and livelihood outcomes[37] due to lower levels of education, stigma and reduced opportunities to access work. They are also more likely to have unmet AT needs, compared to men with disabilities.[38] Women with disabilities who lack access to AT are more likely to be excluded from the workforce than other women.[39]

34 IDA & GDI Hub, Navigating the AT Ecosystem as Users: Findings from IDA's Assistive Technology Survey, 2024.

35 Deloitte, Disability Inclusion @ Work 2024: A Global Outlook, 2024.

36 Deloitte, Disability Inclusion @ Work 2024: A Global Outlook, 2024.

37 Bechange, S., et al., Livelihood outcomes in a cohort of youth with disabilities following participation in an economic empowerment programme in rural Uganda, Disability and Health Journal, Volume 14, Issue 3, 2021.

38 de Witte, L., et al., Inequities in access to assistive technology: a call for action, The Lancet Public Health, Volume 10, Issue 1, e4 - e5, 2025.

39 ATscale, The Case for Investing in Assistive Technology, 2020.

Inequities accessing Mobile (Smartphone) Technology

Smartphone ownership is more widespread in high-income countries than in low-income countries, so persons with disabilities living in the latter countries are less likely to benefit from the accessibility features (screen readers, magnification, text-to-speech, customizable display settings, etc.) that enable smartphones to be used as a form of AT. Also, younger people under the age of 35 have greater access to such accessibility features as they have a higher likelihood of owning smartphones.[40] Women in LMICs are less likely to have access to smartphones, particularly women with disabilities, those living in rural areas and women with low levels of literacy.[41] Research in Kenya and Bangladesh revealed a significant gap in access, ownership, and usage of mobile phones between people with and without disabilities, since affordability issues and lack of awareness of accessibility features limit the value of mobile phones as assistive technologies. The same research found that 70 per cent of persons with disabilities who do own mobile phones have basic phone models, which lack many or all of the accessibility features of smartphones.[42]

40 Silver, L., Smartphone Ownership Is Growing Rapidly Around the World, but Not Always Equally, Feb 5 2019, Pew Research Centre.

41 GSMA, The Mobile Gender Gap Report, 2023.

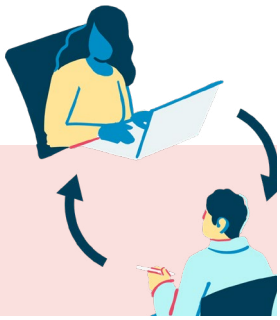
42 GSMA, Understanding the mobile disability gap: Summary of findings from fieldwork in Kenya and Bangladesh, 2019.

5.2 Barriers for Employers

- **Digital Inaccessibility:** A digital divide exists that excludes many AT users from accessing communication, services and information. The divide is exacerbated by the many public and private sector platforms, which do not fully comply with accessibility standards and therefore are not compatible with AT products such as screen readers, and this problem is made acute by under-provision of suitable platforms by employers. One of the most significant barriers facing people with visual impairments in workplaces is the lack of universal design in many administrative software solutions such as online job-application platforms or CRM systems, limiting accessibility and the ability to access a system independently. This is partly due to a lack of regulation and insufficient involvement of people with impairments in the design process.[43]
- **Lack of Inclusive Hiring Practices and Disclosure Support:** Recruitment processes often do not encourage or accommodate disclosure of AT needs. Fear of discrimination discourages AT users from self-identifying as requiring AT, especially when job descriptions, interviews, and onboarding lack inclusive protocols.
- **Lack of Knowledge and Training for Employers and HR Teams:** Many employers, including HR professionals and line managers, lack practical training or technical guidance on how to facilitate selection of appropriate AT and to support its use in the workplace. This leads to underuse or poor implementation of AT even when policies exist.
- **Inadequate Workplace Infrastructure:** Workplace infrastructure is not always designed to accommodate AT users, and many employers lack awareness of how to integrate AT solutions effectively.
- **Financial Constraints:** AT is often viewed as a costly adjustment. Additionally, a lack of government incentives and supportive policies can discourage employers from investing in AT-friendly work environments.

43 Halbach, T., et al., The Role of Technology for the Inclusion of People with Visual Impairments in the Workforce. In: Antona, M., Stephanidis, C. (eds) Universal Access in Human-Computer Interaction. User and Context Diversity. HCII 2022. Lecture Notes in Computer Science, vol 13309. Springer, Cham. 2022.

- **Procurement Processes:** Cumbersome procurement processes at large employers may discourage them from buying small batches of specialized AT. Large organizations need proper governance and supply chain compliance, which can be expensive, making it difficult for them to deal with specialist or small companies selling AT. It can also take several months of negotiations and planning to bring a product that does not exist locally into a country.
- Compliance and Security Concerns: Employers may be hesitant to introduce new AT software due to concerns about ICT security and data protection requirements. New software integration requires thorough compliance checks. While compliance can be expensive for small and medium sized entreprises (SMEs), they often have greater flexibility and fewer bureaucratic hurdles compared with larger companies, allowing them to adapt more quickly to meet the AT needs of employees with disabilities.



5.3 Barriers within the Assistive Technology Ecosystem

- **Availability and Supply Chain Issues:** In a global survey of AT users, only 17 per cent of respondents felt they had access to a good supply of AT.[44] Many LMICs lack domestic or regional manufacturers and suppliers of certain AT products. This results in a reliance on expensive imports and limited availability of a number of appropriate products.
- **Usability and Appropriateness:** Donated AT may not be not tailored to an individual's needs and may do more harm than good in some cases. AT devices and programmes are often abandoned because they are not properly suited to the individual or to the tasks that the individual needs to perform. Additionally, many assistive technologies are designed and developed in high-income countries without considering the context and needs of users in LMICs.
- **Lack of Expertise and Support:** Low workforce capacity in AT maintenance and repair services affects the usability of AT as does the inadequate number of professionals with expertise in conducting assessments and providing advice on AT that is suitable for use in workplaces.

44 IDA & GDI Hub, Navigating the AT Ecosystem as Users: Findings from IDA's Assistive Technology Survey, 2024.

- **Provision of AT is often fragmented:** There is often a lack of coordination between those delivering AT[45] (NGOs, faith-based organizations and state-run structures across different sectors including employment, health and humanitarian response). This results in fragmented procurement systems and a lack of clear responsibilities within government departments.
- **Inconsistent Standards and Regulations:** The absence of national specifications, standards, or supply chain infrastructure for assistive products can lead to the provision of poor-quality products.
- **Inadequate Integration in Livelihood Planning:** Many NGOs running livelihood programmes recognize that AT is needed but do not have a specific policy for its sourcing or, when AT has been provided, they are unable to find local support for maintenance and repairs.
- **Inadequate Political Will:** AT is often not a priority for governments due to competing issues. When AT is considered, discussions are often focused on rehabilitation rather than workplace inclusion. A lack of consistent political commitment and inadequate funding and resources hinder access to AT.
- **Policy Challenges:** Insufficient policies and guidance on AT as a workplace adjustment can hinder the integration of AT, and policies mandating reasonable accommodations are often poorly enforced.
- **Limited Research, Data, and Evidence on AT and Employment:** There is a lack of disaggregated data on the employment outcomes of AT users, which limits evidence-based policymaking, programme design, and investment decisions. Most AT related data remain siloed in the health or education sectors.

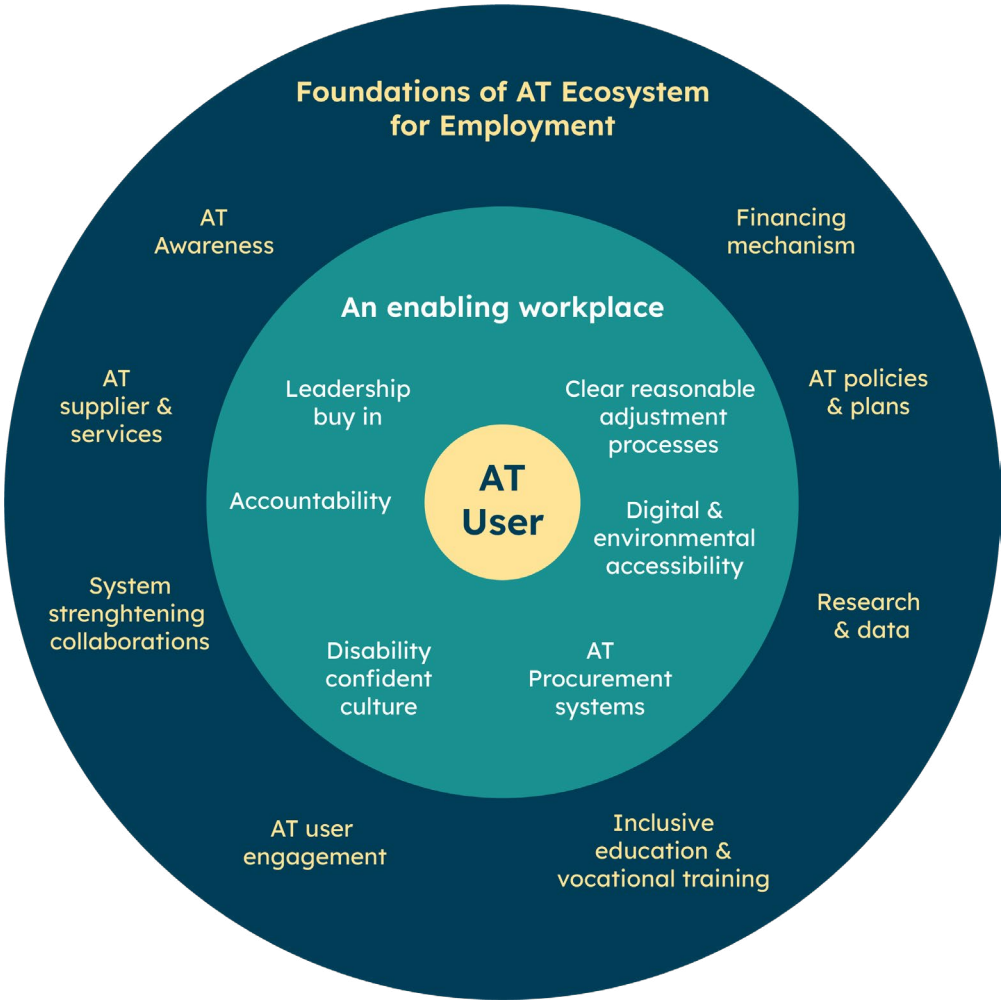
45 CHAI, Catalysing AT access: Scaling rehabilitative services and increasing access to AT in Kenya, 2021.

6 Building Enabling Workplaces and an Assistive Technology Ecosystem for Employment

This section presents an overview of the contributing factors, which are required in order to create an enabling workplace that facilitates access to AT, and describes the foundations of an AT ecosystem, which supports and enables both employers and AT users to obtain affordable and appropriate AT. Examples of current and emerging practices in building an AT ecosystem for employment are cited within these foundational elements.

6.1 An Enabling Workplace

There is a need to recognize the different formal and informal workplace contexts that exist and the diverse entry points for advancing access to AT across all employment sectors to ensure that AT users are not limited in their career choices. Additionally, systems should be in place that enable people who have had less exposure to education to acquire the AT they need in order to enter the labour market.



Infographic:

Constructing an enabling AT ecosystem with the AT user at the centre.

6.1.1. Formal Employment

Clear Reasonable Adjustment Processes

Within multinational companies, the provision of AT is largely recognized as part of the reasonable adjustment process. However, the approach and processes used to request AT differ between companies, as does the success rate in securing appropriate AT. Promising practices within multinational companies include a single point of entry for workplace adjustment management services with a catalogue of items that have been checked for compliance with the companies' IT and security systems and a dedicated service manager responsible for the adjustment process,[46] freeing line managers who may not have relevant experience in this area. Streamlined processes simplify and accelerate AT requests, enabling the AT user to perform in their role from the outset.

Digital and Environmental Accessibility

For AT to be used as intended, it is recognized that the IT infrastructure and physical environment need to incorporate universal design principles and comply with accessibility standards such as Web Content Accessibility Guidelines for digital platforms.

Streamlining Access to Assistive Technology

GSK's Workplace Adjustment Service Line streamlines the process of securing AT through a trust-based, centrally coordinated system managed alongside Microlink (a workplace adjustment provider) with a clear list of approved software and hardware. Employees can self-refer via a centralized mailbox, where a specialist team triages requests, assesses needs, and implements solutions without requiring managerial involvement. The service, currently available in nine major markets, aims to expand globally, including in LMICs.

46 Scott-Parker, S., & Siabi, N., Everyone wins a Balloon: The Business Value of Adjustment Management, 2025.

AT Procurement Processes

Workplace adjustment providers can address the supply, procurement, and AT expertise challenges that public and private sector organizations face by facilitating implementation of the workplace adjustment process. This can be done by streamlining assessments, identifying barriers, and providing solutions. The benefits of a systematic approach to workplace adjustments include a significant reduction in costs and timelines compared to an ad hoc approach.

Disability-inclusive Work Culture

Employers should be enabled and encouraged to create an inclusive environment where employees with disabilities feel valued and supported, fostering a culture that removes barriers, ensures accessibility, and provides appropriate adjustments so that employees with disabilities can fully participate and contribute in the work environment. Building employee confidence to disclose AT needs without fear of discrimination is also essential and is supported by self-identification campaigns in some companies. Employee resource groups can play a vital role by contributing to strengthening a disability inclusive work culture and offering feedback on any issues in acquiring AT.

Facilitating Access to Appropriate Assistive Technology

Accenture India has established an Accessibility Centre equipped with a wide range of assistive technologies, including specialized keyboards, Braille displays, screen readers, and sign language applications. Staff are available to guide users in selecting suitable devices, which can also be sent to other offices, and a structured process is in place to accommodate special requests beyond the standard list.[47]

47 India Business Disability Network and V-shesh, Inclusion Best Practices for Corporates: Key Learnings from India Initiatives of Four Champion Companies in IT/ITEs Sector, 2021.

Accountability

Where streamlined reasonable adjustment processes exist, it is considered good practice for them to be monitored to collect data on cost, type of AT requested and turnaround time from request to delivery, with feedback mechanisms in place to assess employee satisfaction with the process and to gauge suggestions for improvements.

Accessing Assistive Technology in Manufacturing Industries

While substantial advances have been made in supporting access to AT in office environments and particularly within the technology sector, less progress has been made in the manufacturing sector. A study by the Indian Business Disability Network in partnership with V-shesh examined the disability-inclusion practices of four manufacturers in India. The study found that Disability Employee Resource Groups help to create a safe and inclusive work culture when supported by management, and that efforts to improve access to reasonable adjustments focus on a centrally funded process with clear standard operating procedures and leadership oversight.
The Enablement Passport is used by some companies to encourage employees to disclose disabilities and to request necessary adjustments including adjustments to their work station and AT.
While companies recognize AT as a critical equaliser for inclusion, systems ensuring access to AT require further development.[48]

48 India Business Disability Network, (in partnership with V-shesh) Enabling Inclusive Make in India: Best Practices in Disability Inclusion in Manufacturing Sector, 2022.

Leadership Buy-In

Several National Business Disability Networks have recognized buy-in by senior leadership, a single-point workplace adjustment process, and a centralised budget as key enablers in facilitating access to AT.[49,50]

Promoting Reasonable Adjustment within the Business Community

Safaricom, Kenya, has a workforce of close to 6600 people including 180 persons with disabilities. The company trains managers on inclusive leadership and supports access to AT as part of their reasonable accommodation process which covers limited costs for assistive devices with some additional coverage provided under company medical insurance.

They do not yet have a streamlined process in place for accessing AT and have experienced some challenges in procuring good quality AT. Safaricom has played a significant role in demonstrating the feasibility of reasonable adjustments without high costs in Kenya and they mentor other companies through their role as Chair of the Kenya Business and Disability Network. Safaricom also advocates for disability inclusion through initiatives such as the Disability Charter for Change, which aims to eliminate stigma and discrimination, promote economic empowerment for persons with disabilities, and improve accessibility and availability of AT.

49 Lightfoot, D., Five steps for creating a disability inclusive workplace in 2025, 2025.

50 India Business Disability Network and V-shesh, Inclusion Best Practices for Corporates: Key Learnings from India Initiatives of Four Champion Companies in IT/ITEs Sector, 2021.

6.1.2 Informal Employment

Whilst evidence exists of employers supporting access to AT for those working in multi-national companies and larger organizations in LMICs, access remains extremely limited for people working in small and medium-sized enterprises and options are even more restricted for AT users in the informal economy.

The informal sector, which accounts for the majority of employment in Africa (over 85 per cent) and Asia (68.2 per cent),[51] is often the primary source of livelihood income for persons with disabilities. Persons with disabilities are much more likely than those without disabilities to work in the informal economy and to be self-employed,[52] particularly in LMICs, due to a number of environmental, institutional and attitudinal barriers that have impacted access to education, training and work opportunities. As well as being associated with lower earnings,[53] informal jobs lack security, social protection, and benefits.

A significant number of persons with disabilities in the informal sector in LMICs lack access to appropriate AT, particularly in rural areas in countries where agriculture dominates the economy. In Kenya and Malawi, for example, the agricultural economy employs up to 80 per cent of the population[54,55] and in Kenya, the prevalence rate of disability in rural areas is double that in urban areas.[56] There is also a gender imbalance with more men than women employed in the formal sector in Africa.[57] The absence of disability-inclusive approaches in the informal sector compounds the barriers faced by persons with disabilities, limiting opportunities for economic participation and personal autonomy.

51 ILO, Women and men in the informal economy: A statistical picture. Third edition, 2018.

52 ILO, New ILO database highlights labour market challenges of persons with disabilities, 2022.

53 ILO, New ILO database highlights labour market challenges of persons with disabilities, 2022.

54 Sightsavers, Kenya Global Labour Programme Impact Evaluation Baseline Study Report, 2023.

55 Food and Agriculture Organization, Country Fact Sheet on Food and Agriculture Trends: Malawi, 2015.

56 Sightsavers, Kenya Global Labour Programme Impact Evaluation Baseline Study Report, 2023

57 James Sumberg et al., Formal-sector employment and Africa's youth employment crisis: Irrelevance or policy priority? Development Policy Review April 2019.

Given these statistics, it is imperative that AT be made available to those who require it in order to access work in the informal sector. Addressing this issue requires tailored policies and programmes that improve access to AT and related support services for those engaging in labour market activities outside the formal sector.

6.2 Foundations of an Assistive Technology Ecosystem for Employment

Beyond the workplace, the foundations described in this section are key to creating an AT ecosystem for employment that makes it easier for both AT users and employers to access the AT required for diverse employment sectors.

6.2.1 Financing Mechanisms

The table below offers a non-exhaustive list of global financing mechanisms for AT for employment. It is generally desirable to combine funding of reasonable adjustments (including provision of AT) by employers with a state-funded system. However, it is noteworthy that diverse funding models have been introduced in certain LMICs to bridge the gap until such a balance can be achieved. In any case, it is important to recognize that the additional costs associated with purchasing AT for use in the workplace should, as far as possible, not fall on persons with disabilities who already face increased costs of living associated with disability.

Mohamed's prosthesis enables him to work on his sewing machine.

Photo:
Humanity & Inclusion

FINANCE MECHANISM	EXAMPLES
Government grants and national insurance schemes	Nigeria's National Access to Work Scheme, was launched in January 2025 with the aim of boosting labour force participation and economic inclusion of persons with disabilities. Inspired by the UK's Access to Work programme and tailored to Nigeria's context, the scheme supports persons with disabilities in securing and retaining formal employment by providing grants for AT, workplace adjustments, and technical assistance. Developed by the National Commission for Persons with Disabilities (NCPWD) with support from TAF Africa and Sightsavers, the scheme follows a 'shared responsibility' model, where the government covers most costs while employers handle maintenance costs. The initiative is funded primarily through the NCPWD's annual budget and supplemented by contributions from organizations and international donors.
	SG Enable administer the Job Redesign Grant Change to on behalf of the Workforce Singapore (WSG) and the Ministry of Social and Family Development (MSF). The grant supports employers to hire and retain persons with disabilities by reimbursing up to 90 per cent of job redesign costs including Change to AT and workplace adjustments capped at SGD$20,000 per employee with a disability. In addition, the Assistive Technology Fund, run by the Ministry of Social and Family Development, provides subsidies, based on household per capita income, of up to 90 per cent (with a lifetime cap of SGD$40,000) for purchasing, upgrading, or repairing AT used for early intervention, education, employment, training, rehabilitation or independent living.
	Australia has two key schemes providing holistic support to help persons with disabilities access employment. The National Disability Insurance Scheme (NDIS) provides funding and support to persons with disabilities who require long-term assistance to achieve their goals, which may include working towards employment and may encompass skill development and AT for daily life and work. The second scheme, the JobAccess hub, is a one-stop shop offering comprehensive disability employment support for persons with disabilities, employers, and service providers. Run by the Department of Social Services, JobAccess provides expert advice, employer engagement services, and funding through the Employment Assistance Fund (EAF), which reimburses workplace modifications, AT, and support services. The programme also provides free Workplace Modification Assessments, which recommend tailored solutions to ensure that employees with disabilities can perform their roles effectively.
	Norway's Department of Assistive Technology, under the National Labour and Welfare Administration, operates a holistic system for AT provision based on rights to access AT outlined in the Act on Social Security. The system ensures financial support for the most cost-effective and appropriate AT solutions. Local authorities handle healthcare, social services, and rehabilitation, with 18 AT centres nationwide providing expertise in assessment, procurement, and maintenance. Employers are required to make workplace adaptations under the Work Environment Act, but financial support for AT, machinery adjustments, and environmental modifications is available through the national insurance scheme, including grants for self-employed individuals.

Reasonable adjustment processes	Many multinational companies and some larger companies and small and medium-sized enterprises cover AT under reasonable adjustment policies. It is considered best practice to fund adjustments from a centralised pot and to have a single-entry point for reasonable adjustment requests.
Private partnerships and loans	Corporate Social Responsibility funds and donations are leveraged to support AT projects such as NeoMotion's Livelihood on Wheels project which provides motorized wheelchairs to people with physical disabilities, enabling them to access a range of livelihood options. NeoMotion are also exploring other innovative financing models, such as partial grant funding with the remainder paid for by the recipient who can access low-interest loans allowing them to purchase AT over a 36-month period.
NGOs	Some NGOs working on economic empowerment and livelihood programmes, such as Light for the World in their We Can Work programme, have incorporated a budget for purchasing AT for participants.
Charities and faith-based organizations	AT is donated by charitable bodies but is not always tailored to individual need or accompanied by the necessary training and maintenance support.

6.2.2 AT Policy Framework

The global policy framework for AT is significantly shaped by the UN Convention on the Rights of Persons with disabilities (CRPD), which recognizes AT as a fundamental human right. Articles 26 and 27 refer explicitly to the provision of AT in the workplace, emphasising the elimination of barriers and the need for reasonable accommodations as well as the obligation of States Parties to promote the use, and availability of AT, whilst Article 4 highlights the importance of research, development, production, and distribution of affordable AT. The African Disability Protocol asserts that state parties should promote the use of appropriate and affordable AT whilst Article 19 on the Right to Work recognizes the role of the state in ensuring that persons with disabilities access reasonable accommodations in the workplace.[58]

Many countries have translated the principles of the CRPD into national legislation, with 62 out of 70 countries surveyed by WHO for their Global Report on Assistive Technology reporting at least one piece of legislation on access to AT. Most of these countries include AT in health or social services legislation. The Report found that 63 per cent of countries had three or more ministries managing AT.[59] Notably, the provision of AT in employment is also considered under employment policies relating to reasonable accommodations and 113 countries, including 69 LMICs, have legislation mandating reasonable accommodations for workers with disabilities.[60] Reasonable adjustments are defined as adaptations that are made to work tasks, processes and the workplace environment as well as the provision of assistive devices in the form of equipment and tools that enable an individual to carry out their job on an equal basis with others.

Despite the presence of legal frameworks, the translation of policies into effective programmes, funding mechanisms and comprehensive service delivery remains a challenge in many countries.

58 African Union, Protocol to the African Charter on Human and People's Rights on the Rights of Persons with Disabilities in Africa, 2018.

59 WHO & UNICEF, Global Report on Assistive Technology, 2022.

60 WORLD Policy Analysis Centre, Are employers required to guarantee reasonable accommodation to workers with disabilities? 2021.

Country Capacity Assessments in seven African countries revealed limited financing in national budgets and significant gaps in service provision and workforce training.[61] Furthermore, AT specifically required for work purposes is often not covered under existing state-run financing mechanisms for AT for other daily functional needs.

Access to AT as a form of disability support service is recognized by the UN Partnership on the Rights of Persons with disabilities (UNPRPD)[62] as a vital element of disability inclusion and the promotion of autonomy within all aspects of daily life including work. UNPRPD state that the additional costs of disability such as those associated with purchasing AT must be considered in policy and programme planning in order to reduce the financial burden on persons with disabilities and prevent further exclusion. They propose that funding should be supported through a combination of social protection measures, public disability services, strong accessibility standards, reasonable accommodations, and robust legal and policy frameworks.[63] These measures collectively reduce the financial burden on individuals and promote equity in access to opportunities.

Farmers with disabilities in Machinga district showcasing carts/trolleys produced from AgriLab with support from the IFAD-funded Programme for Rural Irrigation Development (PRIDE) in collaboration with SPARK Project.

Credit: Procasur

61 CHAI, Final Report: Assistive Technology Country Capacity Assessment in seven African Countries using WHO Assistive Technology Assessment-Capacity Tool, 2020.

62 UNPRPD is now formally known as the Global Disability Fund.

63 UNPRPD, The preconditions necessary to ensure disability inclusion across policies, services, and other interventions, 2023.

6.2.3 Research and Data

Research devoted specifically to AT and employment has been limited, with existing studies often focusing on health or daily living rather than employment inclusion and outcomes. While Country Capacity Assessments (CCAs) and rapid assistive technology assessments (rATAs) do not specifically focus on AT in employment, they provide an understanding of the AT landscape in terms of policies, supply challenges and procurement systems and inform policy decisions and coordination in the countries where they are conducted.

Although research has been conducted in LMICs highlighting the significant economic benefits for productivity and income of providing affordable reading glasses, there is a dearth of research that can provide an evidence base to support investment in other forms of AT and how it transforms access to labour markets. Research has been carried out to examine livelihood outcomes for persons with disabilities following economic empowerment interventions that include the provision of AT.[64] However, this was part of a wider range of programme activities that included vocational and business skills training and start-up kits, so it is difficult to ascertain the direct influence of AT on the positive outcomes observed on young people's livelihoods. This highlights a wider challenge of measuring the impact of AT on employment since a number of components, such as environmental accessibility and stigma-free workplaces, need to accompany the provision of AT in order to maximise its positive impact.

There is also a notable lack of data on AT needed for employment purposes. In 2022, the Ministry of Labour in Moldova launched a project to develop an assistive product list (APL) for employment to promote workplace inclusion for persons with disabilities.

64 Bechange, S., et al., Livelihood outcomes in a cohort of youth with disabilities following participation in an economic empowerment programme in rural Uganda, Disability and Health Journal, Volume 14, Issue 3, 2021.

Moldova enlisted the support of WHO, which worked with the Ministry to adapt the rATA to include questions related specifically to employment. Data from the rATA was then used to inform the APL for employment.

Research gaps remain in the following areas:

- Effectiveness of AT in helping people to access and retain work
- Cost-benefit of AT in the workplace
- Longitudinal studies on the impact of AT on employment outcomes including productivity and economic independence
- Effective and sustainable funding models for AT in LMICs
- Data on unmet AT needs for employment
- Engagement of AT users in the production of AT and the potential of this emerging market to create more inclusive job opportunities
- Impact of smartphone accessibility features on employment opportunities for persons with disabilities in LMICs
- Gender-disaggregated and intersectional data
- Social and attitudinal factors affecting AT use in workplaces

6.2.4 Vocational Training

There is some evidence of Organizations of Persons with Disabilities (OPDs) and development partners liaising with Technical and Vocational Education and Training (TVET) colleges to expose youth to AT at an earlier age to demonstrate its potential to enhance work opportunities. This is complemented by creative thinking around how equipment and tools can be adapted to enable persons with disabilities to access courses and vocations.

- Humanity and Inclusion are working with TVETs to create more accessible opportunities for vocational training by incorporating AT such as mobile applications and whiteboards into the classroom as well as adapting equipment and tools relevant to diverse vocations.
- Youth4Jobs runs skill building and livelihood programmes for youth with disabilities across India, using AI and AT through initiatives such as the Swaraj Ability job platform and Smart

Inclusion Centres. These centres, established in colleges and universities, showcase AT and raise awareness of its potential, offer training, job placement support, and employer connections, helping students with disabilities to gain skills and employment in sectors such as IT, manufacturing, and retail. Youth4Jobs also works with companies to raise awareness about AT and they are developing a virtual showcase to further promote AT.

- The IT Bridge Academy, hosted by Kenya's National Industry Training Authority and delivered by Sightsavers in partnership with United Disabled Persons of Kenya, provides inclusive IT education for young persons with disabilities. The model has now expanded from Kenya to Nigeria. Graduates earn a Cisco Certified Network Associate certification, boosting their career prospects. The Academy ensures that adjustments are in place to meet students' needs and has offered screen reader software as well as customized hearing aids and other assistive devices. In addition, companies such as MTN in Nigeria run internship opportunities for graduates of the Academy and have provided AT for their interns.
- Changsha Vocational and Technical College in Hunan, China, runs a vocational training programme on Visual Communication Design and Vehicle Inspection and Maintenance to enhance job opportunities for jobseekers who are deaf. The programme incorporates real-time speech-to-text sign language translation and augmented reality for accessible learning, and collaborates with government, businesses, and schools to support career planning and inclusive recruitment.

6.2.5 Valuing User Engagement in the Assistive Technology (AT) Sector

- Promising practices in user engagement include examples of AT users having the opportunity to be actively engaged in AT production, servicing and retail rather than being only recipients of AT. The AT eco-system represents a growing market area that has the potential to offer employment opportunities for persons with disabilities alongside creating products that enhance access to work.
- Living Dignity for the Blind, a Myanmar-based OPD, empowers people with visual impairments to achieve greater independence and secure tech-related jobs through the provision of

decentralised training in smartphone and computer usage, AT, and digital skills. The organization has expanded across multiple remote regions, offering specialised training in fields such as audio engineering, digital finance, and online safety, while also setting up resource rooms for students with visual impairments in schools and universities. Innovations by the OPD address unmet need in the country and include a Myanmar-language text-to-speech system, an accessible Android keyboard, and a widely used 'money reader' app. Graduates of the programme have found diverse employment opportunities, including as app developers, computer trainers, audio engineers, and YouTubers.

- Shonaquip Social Enterprise (SSE), which is based in South Africa, enhances mobility and inclusion through the provision of AT-related products, services and training while also furthering the reach of its work by contributing to the creation of a more inclusive ecosystem that employs and upskills persons with disabilities and their families. The organization emphasises the importance of creating a workplace culture that values diversity and provides the necessary support for all individuals to thrive in their roles. It offers strong internal support through a buddy system, mentoring and coaching. As a social enterprise, the organization cannot afford to provide all of the AT that is needed, but leverages its team of therapists and social workers to ensure that staff members acquire what they need through the government health system and raises funds for AT when necessary.
- Enable India uses its experiences supporting persons with disabilities to access employment by innovating assistive solutions that will enable more people to enter the workforce. The OPD developed Project Discovery, an initiative that showcases and scales grassroots solutions through the creation of a YouTube channel, which hosts over 6,500 videos of assistive solutions sent in by project participants. Videos include solutions for the workplace in low-resource settings. Enable India's commitment to ensuring that persons with disabilities are at the heart of their work is reflected in the fact that 50 per cent of its workforce are persons with disabilities.
- Deaftronics, a social enterprise in Botswana, produces low-cost, solar-rechargeable hearing aids and provides employment to persons with disabilities assembling, repairing and distributing the hearing aids as part of its micro-enterprise scheme.

6.2.6 System-strengthening Collaborations

Global initiatives are actively working to enhance AT ecosystems, making AT more accessible and affordable for both employment and daily living. AT2030 focuses on understanding and documenting effective strategies for improving AT access, providing insights to guide government actions in strengthening AT systems. ATscale complements this by advocating for policy improvements, mobilising investments, and addressing market barriers to build sustainable AT markets. By analysing key AT markets such as eyeglasses, hearing aids, prostheses, and wheelchairs, using USAID's Market Shaping Pathway framework, experts have identified critical interventions, including support for LMIC governments in developing comprehensive AT policies and Assistive Product Lists (APLs), strengthening procurement mechanisms for coordinated purchasing, and improving product quality assessment and dissemination. Fostering market transparency through reports and creating an enabling environment through awareness campaigns, workforce training, and service infrastructure development are also essential for advancing access to AT.[65]

Participants at meeting of the ILO Global Business Disability Network conference in November 2024.

Credit: ILO

65 Savage, M., et al., Applying market shaping approaches to increase access to assistive technology in low- and middle-income countries. Assistive Technology, 33(sup1), 124–135. 2021.

Coordinated efforts with partners such as Clinton Health Access Initiative (CHAI) have supported governments in Indonesia and Kenya to conduct Country Capacity Assessments, leading to policy changes and stronger AT systems.

Several countries have made significant strides in AT access as part of these initiatives. Zimbabwe removed customs duty on AT in 2019 and eliminated VAT on locally sold AT in 2024, alongside forming an AT technical working group, which developed an AT strategy, created a priority list of 55 assistive products and improved data collection systems. AT2030, in collaboration with the Global Disability Innovation Hub and UNICEF, facilitated the addition of hearing aids to the UNICEF Supply Catalogue in 2021, resulting in substantial cost reductions. A successful joint global tender with WHO enabled large-scale purchasing at competitive prices, demonstrated by a 94 per cent price reduction in Rwanda, which allowed for the procurement of 1,200 hearing aids in a pilot programme.[66] This approach not only makes AT more affordable but also strengthens local capacity by training professionals in fitting and testing, ensuring long-term sustainability and improved accessibility.[67] Initiatives of this kind help to aggregate demand, enable better prices to be negotiated and ensure that products are of good quality, and such approaches can be replicated for employment-related AT.

6.2.7 Supporting AT Suppliers to Scale Assistive Technology Solutions

Various organizations are working to strengthen local AT ecosystems, support innovation, and scale impactful AT solutions. AT4D (Assistive Technologies for Disability Trust) in Kenya builds on the success of Africa's first AT accelerator, Innovate Now, to drive the development of affordable, high-quality AT across the continent. Innovate Now's third cohort focused on Inclusive Employment, supporting start-ups that address employment barriers for AT users. AT4D provides venture-building support through mentorship, funding, peer networks, and policy engagement, while also collaborating with governments to improve AT policies.

66 AT2030, How AT2030 has facilitated a 94 per cent price reduction to power access to life-changing hearing aids, March 4, 2024.

67 UNICEF, UNICEF supplies hundreds of children with life-changing hearing aids, 24 June 2022.

Other global initiatives are also promoting low-cost AT innovations that have the potential to reach a wider audience. Tikkun Olam Makers (TOM) mobilises communities of makers, designers, and engineers to create and share open-source, affordable assistive solutions, including those related to employment, ensuring that all developments are freely accessible on their platform. The Once Foundation's Accessibilitas platform promotes universal accessibility by providing free access to 3D-printed designs for assistive products, including those for workplace use. The Zero Project identifies and shares innovative solutions that enhance the daily lives of persons with disabilities, including solutions focused on ICT and employment. Through its conferences and online platform, the Zero Project showcases emerging innovations, which have the potential to be replicated elsewhere. This is further encouraged through their Scaling Solutions Programme which supports the expansion of successful disability-focused innovations by providing individualised scaling support, training, mentoring, networking, and visibility.

6.2.8 Raising Awareness of Assistive Technology (AT)

It is recognized that awareness raising needs to take place at multiple levels to increase understanding of what AT exists and how it can enhance employment outcomes. These interventions target AT users, caregivers, employers, policy makers, community leaders and industry leaders, among others.

The table below depicts the range of actors who play significant roles in advocacy and raising awareness of the potential of AT to transform workplace inclusion:

STAKEHOLDER	EXAMPLE OF EMERGING PRACTICES
Organizations of Persons with Disabilities (OPDs)	Global, regional and local OPDs are instrumental in advancing AT advocacy and policymaking. The International Disability Alliance (IDA), Global Disability Innovation Hub, AT2030 and ATscale are implementing initiatives to empower OPDs, including research fellowships and microgrants for local advocacy, capacity-building and activities promoting AT in specific sectors such as employment. In Kenya, the United Disabled Persons of Kenya (UDPK) has worked with the government to develop an Assistive Product List and a training curriculum while also integrating AT into livelihood programmes. In addition, the African Disability Forum works with partners to ensure that AT needs are incorporated into livelihood initiatives, while the Pacific Disability Forum (PDF) advocates for AT inclusion in national policies and budgets across the Pacific region, emphasizing the role of AT as a precondition for inclusion in health, education, and employment. PDF collaborated with WHO to develop a regional Assistive Product List and advocates for government responsibility for AT procurement and maintenance.
AT Service Providers	AccessTech Innovations in Nigeria simultaneously tackles lack of awareness of AT and low digital literacy by providing digital skills training and creating an AT Experience Centre in Lagos, initially funded by Microsoft. The Centre allows users to test devices before purchase and to access training in order to maximise their benefits. AccessTech Innovations has delivered training specifically on AT and entrepreneurship to young women with disabilities and its online training offer is accessed by people across Africa. The organization also advocates for digital accessibility, sells AT procured both nationally and internationally, and partners with AT manufacturers, building technical expertise to provide a nationally based maintenance service, ensuring accessibility and usability for AT users.
Employment Services	SG Enable, Singapore's focal agency for disability inclusion in employment, raises awareness about AT among persons with disabilities and employers through initiatives such as Tech Able, which offers an AT assessment centre, library, and loan service. Under its Enabling Mark accreditation scheme, SG Enable also raises awareness of AT as part of broader disability inclusion efforts with employers. Similarly, Colombia's Comfama Employment Service emphasizes the role of AT in improving employment opportunities for persons with disabilities, both internally within their organization and among the jobseekers and employers they support. In the UK, Microsoft partnered with the Department for Work and Pensions (DWP) to train 26,000 work coaches in accessibility tools, supporting jobseekers with disabilities to leverage technology for more inclusive job searches.

UN and Development partners

INGOs such as Light for the World, CBM Global, Sightsavers and Humanity & Inclusion play a crucial role in raising awareness among mainstream employers and partners about AT as a reasonable accommodation, with Sightsavers also supporting National Business Disability Networks and advising on AT's potential. CBM Global recognizes AT as a fundamental precondition for inclusion in its approach to inclusive livelihoods and integrates AT considerations into its programme, advocacy and advisory work. The UN Disability Inclusion Strategy has significantly advanced disability inclusion across the UN system, with its accountability framework incorporating indicators on reasonable accommodations, accessibility, and employment. Additionally, UN entities such as UN Volunteers have adopted their own disability inclusion strategies and work with host institutions to raise awareness of AT, provide practical guidance and offer a Reasonable Accommodation Fund when volunteer host organizations have budgetary constraints.

Light for the World integrates AT into its inclusive employment programmes, particularly through the We Can Work programme, funded by the Mastercard Foundation, which promotes employment of youth with disabilities across seven African countries. The programme supports partners in enhancing disability inclusion, ensures budget provisions for AT and professional assistance, and offers three career pathways: formal employment, technical skills, and entrepreneurship. There are plans to hire an AT thematic expert to further support this work. We Can Work also explores vocational training and employment opportunities within AT value chains and advocates for purchase of locally produced AT where feasible while acknowledging challenges in local product availability and support services. Additionally, Light for the World developed the CapAble online platform to provide AT guidance for scholars and universities, and the ReferAll app in Uganda, which connects persons with disabilities to essential services, including AT providers.

Initiatives Supporting Disability-inclusive Business

Several initiatives are raising awareness of AT by engaging businesses and employees in discussions on disability inclusion. Global and National Business Disability Networks, supported by the ILO, advocate for access to AT at all stages of the employment process, emphasising the role of AT in attracting and retaining talent. The Valuable 500, a CEO-led collective, integrates disability inclusion into board agendas, encouraging companies to drive innovation in AT provision and share best practices. Additionally, Purple Space supports Employee Resource Groups across 57 countries, providing a platform for employees with disabilities to share experiences, access online resources, and participate in learning sessions on workplace adjustments, including AT accessibility.

7 Conclusion and Key Recommendations

Building a system that facilitates affordable and easy access to AT for the millions of people in LMICs who require AT to enter the labour market and retain work, necessitates disability-inclusive workplaces with clear systems in place to support reasonable adjustments as well as the foundations of a broader AT ecosystem.

Within this ecosystem, governments, employers, policymakers, investors, NGOs, AT providers, and organizations of persons with disabilities must work together to raise awareness, improve affordability, enhance supply chains, promote user-centred design, and implement and regulate policies that increase access to AT across all employment sectors. Solutions need to be context-specific, with interim measures in place while systems are being strengthened, particularly for the many AT users working in rural areas and the informal sector. Grassroots innovations can play a crucial role in developing scalable AT solutions tailored to low-resource settings. Where progress has been made in building strong AT ecosystems in LMICs, it has been driven by a combination of factors, including an active disability movement, the presence of AT innovators and suppliers, employer commitment, favourable policies and committed government support.

The recommendations below propose actions to build on existing foundations, strengthening an AT ecosystem that can support AT users to access the AT they require and make it easier for employers to facilitate access to AT for their staff.

Recommendations for Governments:

- **Designate a Lead Agency for AT in Employment:** Identify and designate a specific government agency (e.g., Ministry of Labour / Employment) to take the lead in driving national efforts on AT and employment.
- **Establish Cross-Sectoral Leadership:** Form a coordination committee under the lead agency with strong leadership across sectors, which will drive development of national policy frameworks to promote research, access, funding, training, and awareness of AT for employment. In order for access to AT to extend across all employment sectors, it is important to involve ministries that cover education, health, rural development and agriculture, as well as local government and other relevant decision-makers.
- **Develop Inclusive Policy and Regulations:** Involve diverse stakeholders, including AT users, employers, and providers, to foster collaboration and effective policy-making.

Review and revise existing employment and disability policies to ensure they explicitly capture the role of AT in fostering inclusion and accessibility in the workplace.

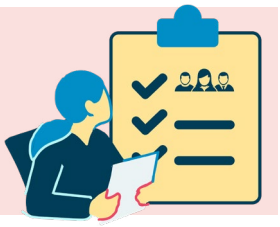
- **Raise awareness of the Value of AT as a Workplace Adjustment:** Promote the use of AT as a crucial enabler in workplace accommodation processes. Establish AT experience centres and centralized 'one-stop shops' to simplify access to information and services and place value on grassroot AT solutions that have the potential to be scaled in low-resource settings.
- **Strengthen Global Supply Chains:** Engage with international trade organizations to reduce tariffs and enhance the availability and affordability of employment-related AT through inclusive trade policies.
- **Develop an Assistive Product List (APL) for Employment:** Based on an assessment of AT needs across different employment sectors, produce an APL for employment featuring safe and proven AT. Regulate standardisation in AT production and compliance with disability accessibility standards and incentivise high-quality local production of AT products on the APL in order to reduce costs. Build partnerships and networking opportunities between government, the public and private sectors, AT suppliers, OPDs and NGOs to support, co-create and scale AT solutions and strengthen local supply chains across diverse employment sectors.
- **Expand Funding Mechanisms for AT:** Introduce grants, subsidies and tax relief, to improve affordability of AT provision for workers engaged in both formal and informal employment. A number of different funding mechanisms such as low-interest loans and micro-credits may need to be implemented in the interim whilst working towards a more desirable solution based on employers funding AT as a reasonable accommodation and a state funded 'one-stop shop' for accessing AT for employment purposes.
- **Strengthen Workforce Capacity:** Build workforce capacity in the AT sector to enable local maintenance and repair of AT and ensure that healthcare and rehabilitation workers are adequately aware of AT solutions for employment purposes.
- **Promote Early AT Awareness across the Life Course:** Ensure that youth with disabilities are aware of the transformative potential of AT to support access to employment and that they have the necessary skills to use AT software by introducing AT products and digital skills training in schools and vocational colleges.

- **Enhance Employer Readiness:** Challenge workplace stigma and attitudinal barriers by raising awareness amongst AT users, employers and employer support services of the capacity of AT to enhance access to work. To increase employer awareness, it is important to develop employer training programmes, provide guidance on reasonable accommodations, and promote universal design principles in workplace technologies. Additionally, provide support to employment services, civil society organizations and OPDs to raise awareness of AT amongst employers at local and national level.
- **Improve Data & Research:** Centralise AT service mapping and collect data to evidence the needs of AT users in employment and identify current gaps in provision by including indicators on employment in future Rapid Assistive Technology Assessments and Country Capacity Assessments in order to inform AT-related policies, planning and resource allocation. The Washington Group / ILO Labour Force Survey Disability Module includes questions on barriers to employment and modifications to workplaces and work tasks and can be inserted in Labour Force Surveys as well as population-based surveys that collect data on employment. This can be accompanied by further qualitative data collection to assess unmet need, type of AT required in employment settings and barriers to accessing AT.
- **Recognize Caregivers as Enablers:** Design policies and training that support family caregivers in the use and maintenance of AT, especially in contexts where formal services are limited.

A woman using AT to access work at a factory.

Photo: Motivation/ ©David Constantine

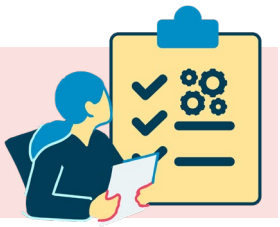
Recommendations for Employers (in Consultation with Employees and Employee Resource Groups):



- **Establish Leadership Buy-in:** Prioritize disability inclusion at the leadership level by assigning senior focal persons who are accountable for the implementation of inclusive policies and workplace adjustments.
- **Implement Policies & Processes:** Develop clear, widely communicated policies on workplace adjustments that recognize AT as an enabler and ensure a stigma-free AT request process with centralised budgets and standards for timely and effective delivery of AT. Where employers are unable to fund AT and no state funding is available, employers should explore other funding options such as facilitating access to low-interest loans to support employees in obtaining AT.
- **Raise Awareness:** Provide training for employees on disability inclusion and the importance of understanding and implementing AT effectively to reduce stigma around the use of AT in the workplace and to enable employees to feel safe expressing their AT needs. Publicise available workplace adjustments through catalogues of compliant products and tools. Support Employee Resource Groups to feed into these processes.
- **Apply Inclusive Design, Technology & Digital Security:** Embed accessibility into IT systems and procurement processes, promote universal design principles, and ensure that workplace software, platforms and tools (e.g., HR systems, job portals, productivity apps) are accessible to AT users and meet cybersecurity and data protection standards.
- **Collaborate:** Foster partnerships between organizations to share reasonable adjustment expertise and leverage supplier relationships for more affordable AT. A coordinated approach to establishing both supply and demand for workplace AT in LMICs is required and organizations with experience in advising on and procuring workplace AT can contribute to facilitating this process through navigating compliance, governance, and infrastructure challenges, and negotiating with suppliers.

- **Monitor:** As part of the reasonable adjustment process, develop monitoring systems that collect data on AT needs, costs and employee satisfaction with the AT request process, and document impact of providing AT on staff absenteeism, retention and productivity.

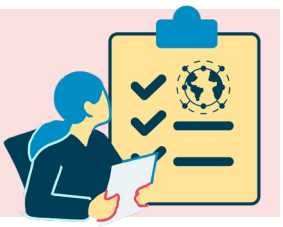
Recommendations for Assistive Technology Suppliers:[68]



- **Expand AT Awareness & Accessibility:** Establish AT training programs, experience centres, and mobile AT hubs to reach urban and rural areas, while leveraging social media, expositions and career fairs to showcase AT solutions for employment. Invest in marketing budgets to build visibility and demand.
- **Strengthen the Evidence Base:** Collect data on AT usage to build a business case for investment by demonstrating impact on employment outcomes.
- **Promote Inclusive AT Production:** Encourage inclusive workplace practices in AT production by enabling AT users to benefit from employment opportunities in the growing AT market.
- **Ensure Accessibility:** AT developers need to consult with persons with disabilities in the workplace to complete the feedback loop in product design and to adjust products accordingly. AT software should comply with accessibility standards to simplify the integration of AT for employers.
- **Avoid Perpetuating Exclusion in AI tools:** In order to ensure that AI systems are inclusive, it is essential to use diverse data sets, apply universal design principles, and involve persons with disabilities throughout the design and testing phases. Adopting ethical standards, implementing audit processes to detect bias early, embedding strong data protection measures and regularly updating tools can help prevent discrimination and ensure that the technology is accessible to all.
- **Leverage Mobile Technology:** Close the disability gap in mobile usage by enhancing affordability and accessibility of devices while strengthening digital literacy programmes to help AT users maximize accessibility features in mobile technology, which enable phones to be used as AT for employment purposes.

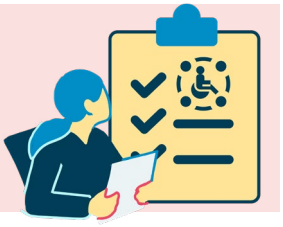
68 This includes developers, manufacturers and retailers of AT.

Recommendations for Industry Associations and Global Business and Disability Networks:



- **Promote Good Practices & Knowledge Sharing:** Develop and share guidance on AT use and workplace adjustment processes to enhance the capacity of employers to effectively facilitate access to AT.
- **Foster Collaboration & Scale Impact:** Organize networking opportunities among companies to showcase successful AT initiatives in order to inspire broader adoption. Encourage collaboration among companies to build supply and demand and achieve economies of scale in acquiring AT.

Recommendations for the Disability Movement and Organizations of Persons with Disabilities:



- **Increase Awareness & Advocacy:** Sensitise employers, policymakers, AT users, and the public about AT, including built-in accessibility features, through training and dialogues while advocating for import duty waivers, tax relief, funding mechanisms, and policy reforms to enhance affordability and accessibility.
- **Strengthen Collective Action:** Ensure that persons with disabilities understand their rights and can negotiate for access to AT in the workplace whilst encouraging NGOs, CSOs and other partners to collectively advocate for effective AT systems. Monitor compliance of State Parties with CRPD articles relating to provision of AT and make use of CRPD monitoring processes.
- **Enhance Workplace Accessibility:** Conduct accessibility audits and support employers in meeting accessibility standards to ensure optimum use of AT.

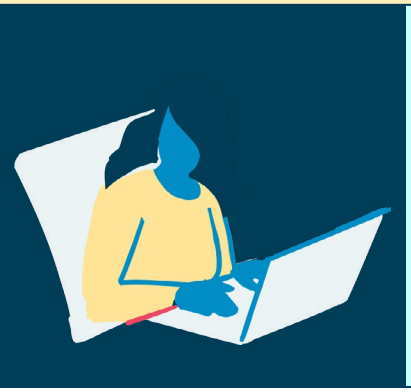
- **Expand Outreach & Data Collection:** Foster peer-to-peer AT support networks and leverage social media to reach underserved areas and collect data, including citizen-generated data, to highlight gaps in availability of AT for employment and to inform user-centred AT solutions.

Recommendations for Development Partners:

- **Strengthen Collaboration & Advocacy:** Engage in coordinated AT advocacy programmes, consult with AT users and OPDs in livelihood initiatives, and support OPDs in advocacy to expand AT access and influence policy.
- **Integrate AT into Livelihood Programmes:** Implement sustainable mechanisms to support access to AT in economic empowerment and livelihood programmes.
- **Leverage Data & Evidence:** Use data from inclusive livelihood programmes to demonstrate the impact of AT on employment outcomes and conduct longitudinal studies to gather evidence on the long-term effects of AT provision on job retention, employment rates and salaries. Showcase examples of AT being used successfully in the informal sector to encourage scalability and broader impact.

Assistive farming tools developed in AgriLab in Cambodia, PAFID.

Photo: PAFID



Annex 1: List of Assistive Technology by Impairment Type

The following list of frequently used assistive technology products is intended to provide examples of the wide range of AT options used in employment settings rather than prescribe specific solutions. This list is non-exhaustive and as highlighted in the policy brief, the choice of AT selected will vary depending on the user's individual circumstances, the type of work tasks they engage in, and the work environment, emphasising that AT must be personalised, context-specific, and aligned with user preferences and regularly updated to reflect changing needs. It is also important to note that not all items fall neatly into one category and some AT products are repeated in different sections as they may be required by people with diverse disabilities. For example, text to speech software can be a valuable tool, both for people with physical disabilities and people with intellectual disabilities, who may each face challenges typing long text. With technology evolving so rapidly, the range of available AT that can be used to support access to work continues to grow.

A Zomato driver using the Neobolt to make food deliveries, India. The programme onboarding process includes training on smartphone usage and the Zomato app.

Credit: NeoMotion

Note: This list excludes commonly used daily living aids such as wheelchairs, hearing aids, white canes, walking sticks, orthotics, and prosthetics etc.

VISUAL	PHYSICAL
• Braille translators • Image description software • Screen magnifier software • Text to speech readers • Large screens • Screen magnifiers • Hand held magnifiers • Wayfinding applications • Audio alert systems	• Eye gaze control software • Speech to text software • Adaptive keyboards, joysticks and mice • Switch buttons • Standing frames • Grab rails • Hoists • Ramps • Ergonomic chairs and desks • Ergonomic aids such as footrests, monitor arms and raisers, anti-fatigue mats and arms supports • Pressure relief cushions • Speech recognition software
HEARING	**COMMUNICATION**
• Closed captioning • Headsets • Assistive listening systems • Visual alert systems • Speech to text software	• Communication boards • Text to speech software • Speech generating devices • Augmentative and alternative communication (AAC) apps
INTELLECTUAL AND DEVELOPMENTAL	**MENTAL HEALTH**
• Speech to text software • Travel aids including wayfinding apps • Note-taking apps • Mind mapping software • Literacy software • Goal Setting apps • Task and time management software • Visual planning prompts • Memory aids	• Mood regulating apps • Mind mapping software • Goal Setting apps • Task and time management software

ATscale
GLOBAL PARTNERSHIP FOR ASSISTIVE TECHNOLOGY

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