February 2025

Disability Innovation 101: Business Models and Markets

DSS: **Online Training Course – Module 2**

UKaid
from the British people

Transforming
Energy
Access

Agenda

Global Disability Innovation Hub

1. **Introduction**
   GDI Hub, team, housekeeping
2. **Disability innovation - Overview**
3. **Market challenges and opportunities**
4. **Ecosystem interventions**
5. **Summary + Next steps**
   Feedback, triage clinic

Acknowledgement

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1 Introduction

GDI Hub: Introduction

Global Disability Innovation Hub

Global Disability Innovation (GDI) Hub accelerates ideas into impact for a more just world—for disabled people, and all people.

41+ countries | 37 million people | 100+ partners

Growing new technologies & ecosystems I Supporting & scaling innovations I Strengthening systems I Pioneering research I Sharing knowledge I Building partnerships I Taking risks

Bringing together world leading academic research and practice-led delivery to address global challenges

Module 1: Recap

Global Disability Innovation Hub

What is disability and disability inclusion?

- **Disability is diverse** and a part of being human. It arises from barriers that should be reduced and removed.
- **1 in 6 people (16%) globally have a disability,** 80% live in LMICs.

Key enablers for disability inclusion

- Disability confidence
- Engaging persons with disabilities
- Accessibility
- Reasonable accommodations
- Disaggregated data

The case for action

- Disability inclusion is **a process, not a project.**
- Disability inclusion **makes sense in development and in business.**

Potential action for TEA partners:

- Conduct disability inclusion **training and awareness workshops** for all staff.
- Prepare and adopt **policies** for disability inclusion and reasonable accommodations.

Training Module 2: Delivery Team

Global Disability Innovation Hub

Ben Hardman
Head of Innovation Ecosystems
ben.hardman@ucl.ac.uk

(Presenter)

Daniel Hajas
Innovation Manager
d.hajas@ucl.ac.uk

(Presenter)

Bala Nagendran M
Inclusive Climate Researcher
b.nagendran@ucl.ac.uk

(Thematic Lead & Moderator)

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Module 2: Overview

Disability Innovation 101 - Business Models and Markets

Disability innovation

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Innovation is the successful exploitation of new ideas.

Disability Innovation means taking new ideas and turning them into successful products, services, or ways of thinking that improve the lives of people with disabilities and those around them.

Source: Main Energy Co. Ltd

Disability innovation = Generating value for real lives

Global Disability Innovation Hub

Value of innovation:

For users (with disabilities), value means **enabling everyday tasks** - communicating, moving, working, etc.

- **2.5 billion people** globally need Assistive Technology (AT) - Less than 10% in LMICs have access, due to unaffordability

Addressing this market gap requires

innovative financing and service delivery models:

- **Co-design** with users to ensure relevance and adoption
- Repair and **servicing networks**
- **Cross-sector alliances** (e.g., startups, NGOs, government)
- Partnerships to create **shared product/service value**

Energy access programmes could enable creating shared product/service value

Disability inclusion and innovation for energy access

Global Disability Innovation Hub

Sector-wide integration:

Mainstreaming disability inclusion across all clean energy products, services, and systems.

Source: Mphamvu

Powering AT: Energy access

stakeholders have a huge potential to further AT research, innovation, and reach.

This module will primarily focus on 'Powering AT'

Source: Heliantha

Assistive Technology (AT)

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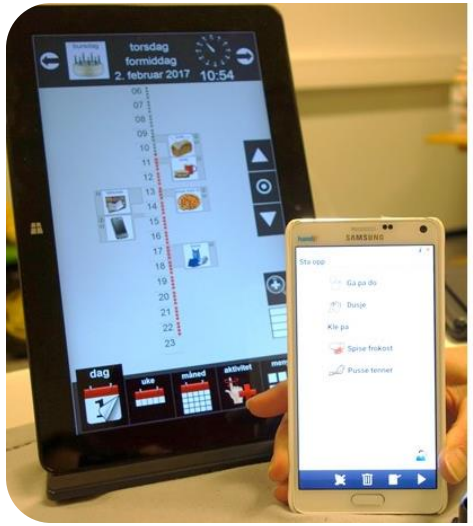
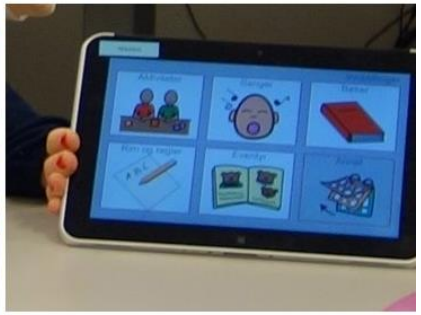
Any equipment, software, or hardware which **enhances the ability of people with disabilities** to perform daily tasks and a wide range of activities.

Access to AT **maximizes a person's ability** to live a life of dignity, practice self-care and support, communicate, improve literacy, access education and employment, and participate in society.





Source: AT2030/GDI Hub

Powering Assistive Technology (AT)

Developing affordable and sustainable adaptations or alternatives for the **22 energy-based (out of 50), WHO-listed priority assistive products** is an opportunity for research, business, and impact.

- **The AT2030 Programme led by GDI Hub and funded by UK Aid focuses on research and delivery for five of the fifty products from the WHO-priority AT list:** hearing aids, prostheses, wheelchairs, eyeglasses, and assistive digital products and software.

Source: AT2030/GDI Hub

- Alarm signallers with light/sound/vibration
- Audio players with DAISY capability
- Braille displays (note takers)
- Closed captioning displays
- Communication software
- Deafblind electronic communicators
- Fall detectors
- Gesture to voice technology
- Global positioning system (GPS) locators
- Hearing aids (digital) and batteries
- Hearing loops/FM systems
- Keyboard and mouse emulation software
- Magnifiers, digital hand-held
- Personal digital assistant (PDA)
- Personal emergency alarm systems
- Prostheses, lower limb (not all)
- Recorders
- Screen readers
- Simplified mobile phones
- Video communication devices
- Watches, talking/ touching
- Wheelchairs, electrically powered

Module 2: Key messages

1. Disability innovation practices have **replicable and scalable learnings** to offer for energy access programmes and businesses.

2. Energy access interventions could/should **expand the reach of assistive technology** through inclusive business models, inclusive ecosystems, and inclusive design.

Source: Practical Action

Market Challenges and Opportunities in Disability Innovation

What are the gaps between need and demand? (1)

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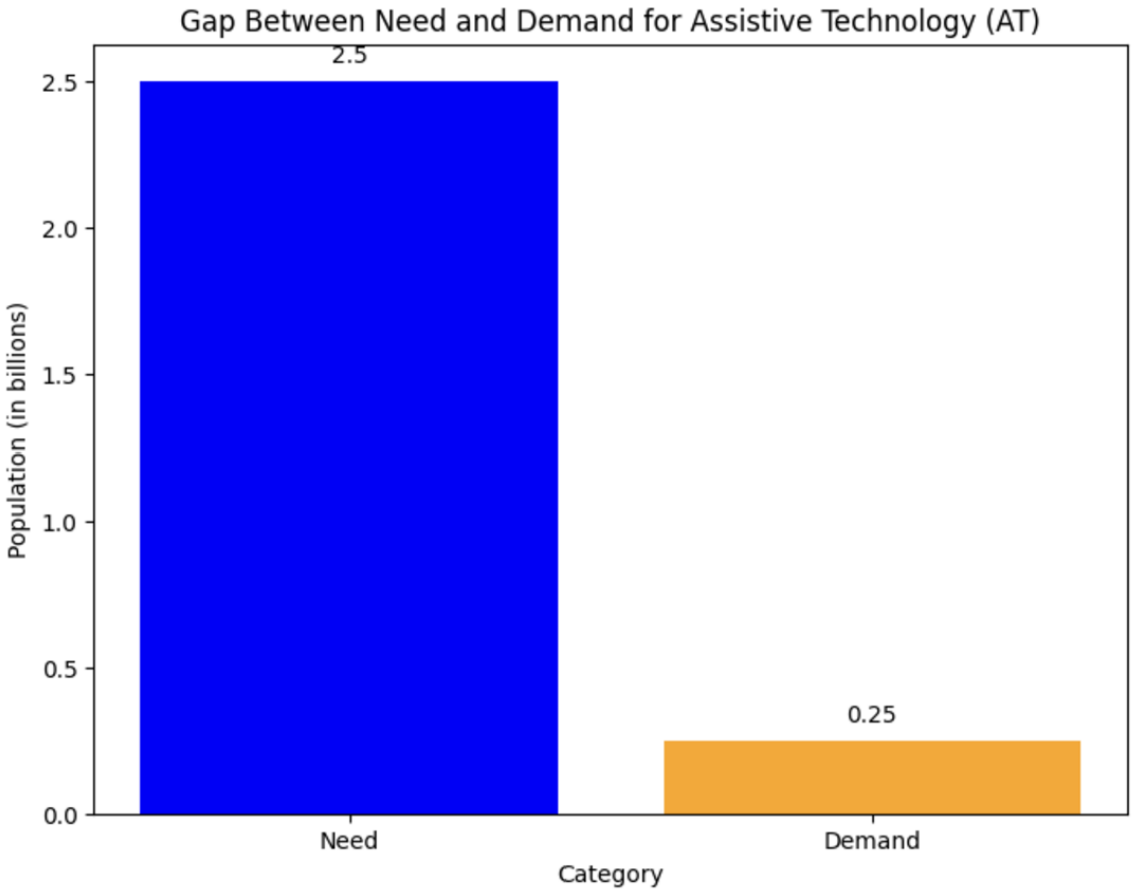
User Need: Refers to the population requiring AT to enhance their quality of life.

- **Example: 2.5 billion people globally need AT.**

Demand: Refers to those who can access/afford AT.

- **Example: Less than 10% in LMICs have access due to unaffordability.**



Source: WHO

What are the gaps between need and demand? (2)

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Affordability:

High costs limit access in low-and-middle income countries (LMICs).

Awareness:

Lack of information on available AT solutions.

Infrastructure:

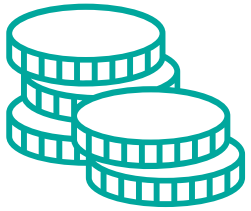
Insufficient repair and servicing networks.

Source: GDI Hub

A multi-billion-dollar market potential

Government-driven models:

- **Governments as key buyers** in healthcare systems (B2G).
- Example: Procurement for national disability inclusion policies.



Emerging markets:

- **AT affordability programs** can unlock significant demand in LMICs.
- Return-on-investment on AT initiatives is estimated at 9:1.

Powering AT: Clean energy access markets can leverage and complement the benefits of AT-markets.

What is needed to unlock the market potential?

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Thinking beyond devices/products and strengthening service ecosystems.

Key services:

- **Fitting:** Customising devices for individual needs.
- **Training:** Ensuring effective use.
- **Maintenance & repair:** Prolonging device lifespan.

For example, a hearing aid's impact diminishes without proper fitting and regular servicing.

Source: TechReview Africa

How can TEA partners embrace disability innovation?

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A. Rethinking **business models**
B. Driving impact through **open innovation**
C. Placing **community** at the heart of innovation

Learnings from disability innovation research and practices.

Source: GDI Hub

A. Rethinking business Model

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Beyond B2C and B2B: Emerging **hybrid models**

leverage partnerships to create shared value.

Source: Solar Ear

Case 1 – SolarEar:

- **A solar-powered hearing aid company,** implements a pay-as-you-go model to allow **incremental payments** and make the **technology accessible** to those unable to afford upfront costs.

Case 2 - Dragon Anywhere:

- **A speech recognition software, offers a subscription-based mobile application,** enabling users to dictate and edit documents on the go.

Source: Nuance

B. Driving impact through open innovation

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What is open innovation?

- **Collaboration** across organisations to share ideas, data, and technology.
- Encourages **rapid prototyping and scaling**.
- **Example: The Centre for Digital Language Inclusion (CDLI)** – transforming communication for people with speech and language impairments through community-driven solutions in Africa.

Examples:

- **Open-source designs** for prosthetics, allowing local adaptation.
- **Crowdsourced problem-solving**, e.g., hackathons for AT development.

Centre for Digital Language Inclusion

UCL · Global Disability Innovation Hub · AT2030 · UKaid · University of Ghana · TalkingTipps · Keio Media Design

C. Placing community at the heart of innovation

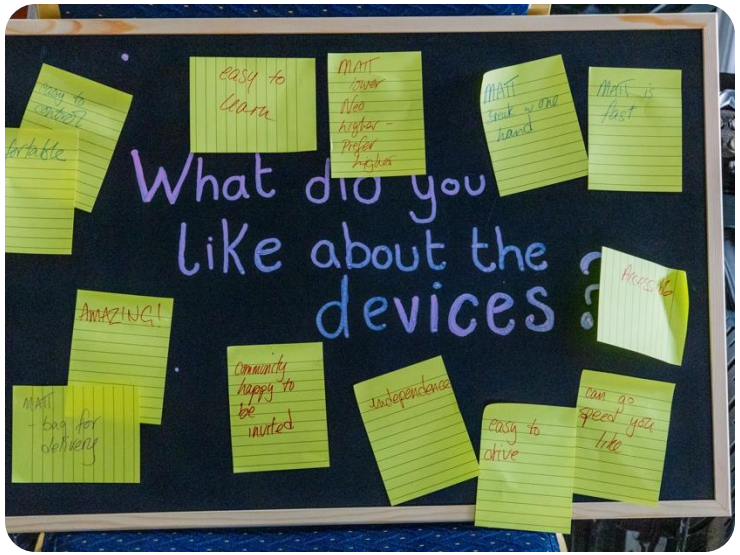
Global Disability Innovation Hub

The role of community:

- **Co-designing with users** ensures relevance and adoption.
- **Peer networks** amplify awareness and training.
- **Strengthened ecosystems** ensure long-term impact and sustainability.

Partnerships:

- **Cross-sector alliances** (e.g., startups, NGOs, government).
- Example: **Partnerships with disabled-persons organisations (DPOs)** in the AT2030 programme.



Source: GDI Hub

Case study 1: Mobility through creative business models (Matt and NeoMotion)

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Overview:

Matt (Colombia) and NeoMotion (India) are pioneering models for wheelchair mobility through **electric attachments** and wheelchair customisation.

Their unique business models focus on affordability, customisation, and local partnerships.

Source: Neomotion

Case study 1: Key components – Matt (Colombia)

Global Disability Innovation Hub

Product innovation: **Electric attachments** for manual wheelchairs, turning them into electric-powered devices.

Business model: Operates a **"Ride-to-Own" scheme**, allowing users to pay in instalments, democratising access.

Community empowerment: **Works with community organisations** and employers to expand affordability and access.

Source: GDI Hub

Case study 1: Key components – NeoMotion (India)

Global Disability Innovation Hub

Product innovation: Custom-built wheelchairs with the option to add NeoBolt, **a motorised add-on** that converts a wheelchair into a motorbike-like vehicle.

Customisation and localisation: **Customised for each user,** based on their physical needs and local road conditions.

Employment and local manufacturing:

Local production **supports jobs** and reduces import dependency, enabling sustainability.

Source: NeoMotion

Case study 1: Takeaways

Global Disability Innovation Hub

Empowerment through ownership: The **"Ride-to-Own" model** employed by Matt makes high-cost electric attachments more accessible to users, enabling incremental payments.

Customised solutions: NeoMotion's **tailored approach** ensures that wheelchairs meet the unique physical, cultural, and environmental needs of users.

Cross-Sector synergies: By **partnering with energy and mobility access initiatives,** like E-Bikes Africa in Kenya, Neomotion and Matt have successfully introduced affordable, electric-powered solutions into regions with limited infrastructure.

Source: GDI Hub

Case study 2: Merging mainstream demand with free AT access (Be My Eyes)

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Overview:

Be My Eyes is a mobile application that connects blind and low-vision individuals with sighted volunteers for visual assistance via live video calls.

The platform also **generates revenue** by partnering with businesses that provide accessible customer service through the app.

Source: GDI Hub

Case study 2: Key components - Be My Eyes

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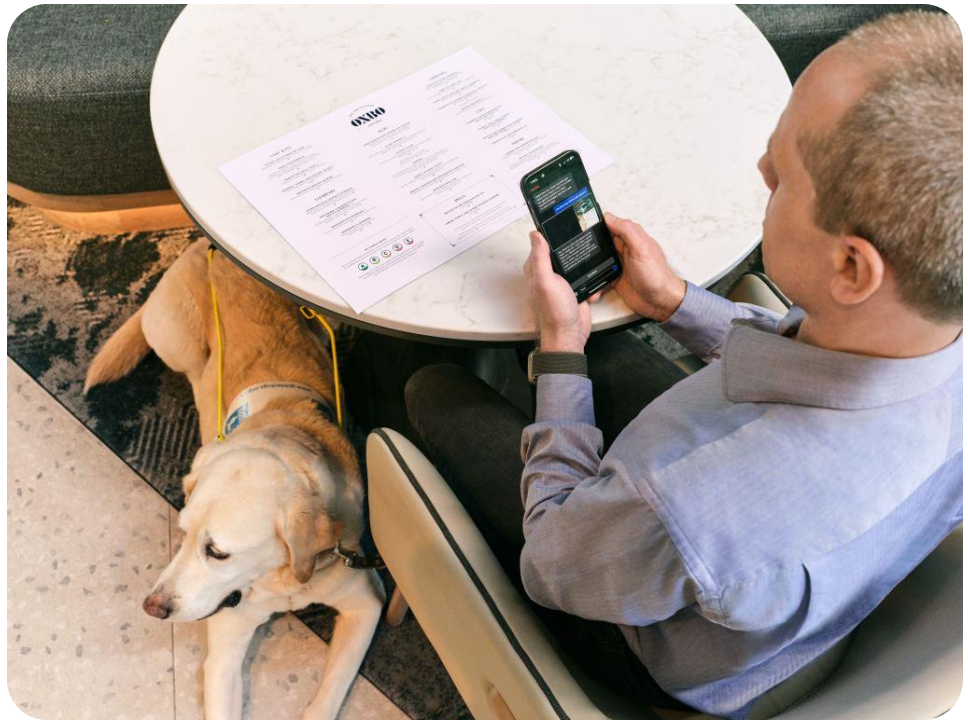
B2C model: **Free services** for blind and low-vision users, removing financial barriers and fostering widespread adoption.

B2B model: **Revenue from businesses** like Microsoft, which offer customer support through the app, enabling financial sustainability.

Scalability: A growing user base **increases value** for both individuals and business partners, driving expansion.



Source: Value Your Eyes

Case study 2: Takeaways

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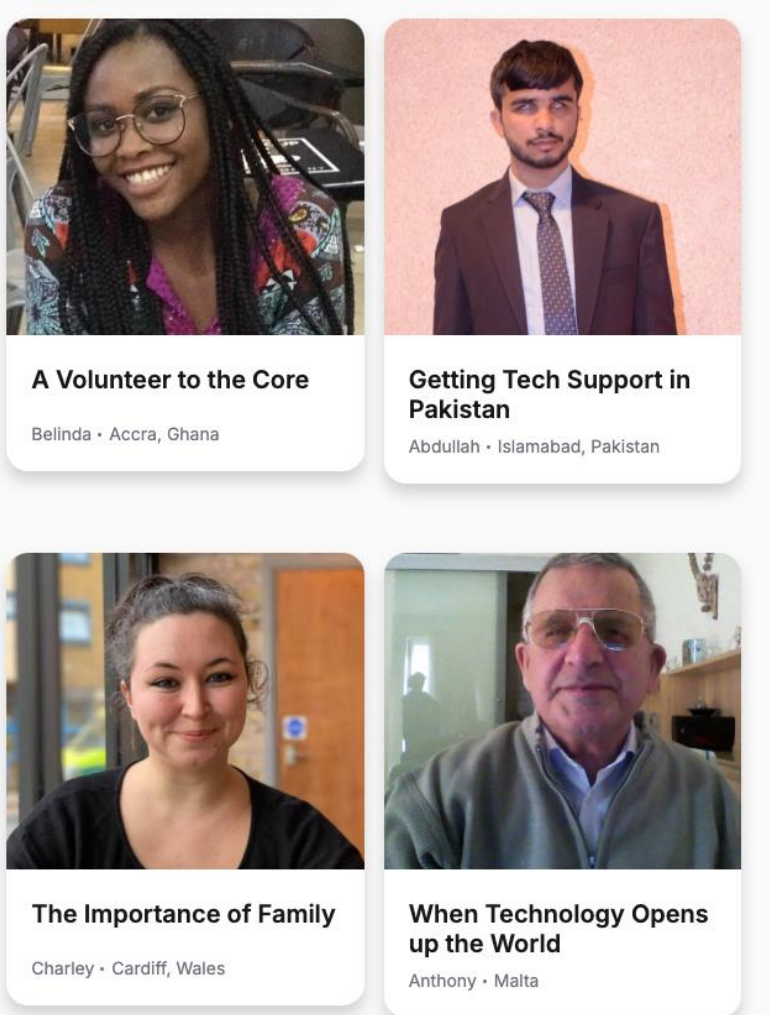
A **dual-faceted model** ensures social impact and financial sustainability.

Collaborating with businesses **committed to accessibility** promotes inclusive practices across industries.

Free services for blind and low-vision users, removing financial barriers and fostering widespread adoption.



Source: Be My Eyes

4 Ecosystem Interventions in Assistive Technology

The global challenge / opportunity

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Of the 2.5 billion people globally that need AT **1.8 billion in LMICs do not have access**

The consumption of working-age disabled people is a **$1.9T economic opportunity.**

(Source: IFC)

Source: McDonalds India

Need & demand for AT in LMICs

Need *(factors creating the necessity for solutions)*

- **Aging Population –** By 2030 nearly 80% of the world's older population will live in LMICs by , up from 60% today. By 2050, one in six people in the world will be over age 65 (16%), up from one in 11 in 2019 (9%).
- **Chronic Diseases and Disabilities -** 85% of the global disability-adjusted life years lost to non-communicable diseases in LMICs.

Source: GDI Hub

Demand *(Market drivers influencing adoption)*

- **Mainstreaming -** The penetration of smartphones and other mainstream technologies in LMICs provides a platform.
- **Remote Care -** Telehealth has the potential to improve access to healthcare and AT in remote and underserved areas in LMICs.
- **Personalization and Customization -** Pilot projects in countries like India have shown that locally manufactured and customized prosthetics can reduce costs by up to 40% compared to imported ones .

Source: Rise Bionics

Market / System Failures

Global Disability Innovation Hub

People

Product

Provision

Personnel

Policy

People: Stigma, discrimination, and low levels of awareness/ education persist in limiting access to AT, and informed decision-making.

Product: Access to AT in LMICs is scarce due to the lack of affordable, quality products that meet local needs, worsened by the lack of standards.

Provision: AT products/services in LMICs often lack sustainable service provision, leading to fragmented markets with high costs.

Personnel: The provision of AT in LMICs often relies on the availability of a restricted pool of highly skilled professionals.

Policy: In LMICs, fragmented policy-making creates confusion, hindering effective implementation at the country level.

Shared Challenges: Energy access X assistive technology

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Limited ability to pay impacts demand and scale – low/no disposable income / lack of established D2G business models in some LMICs

High upfront costs throttles early-stage investment . But the market is still growing by 7%.

Last mile distribution of assistive technology product and services in remote regions is a persistant challenge. Physical, social, and cultural barriers.

Source: GDI Hub

Ecosystem interventions

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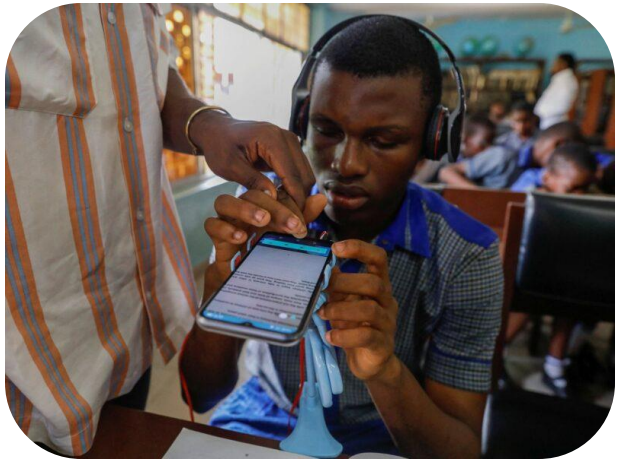
Co-design solutions for and by people with disabilities

Engaging communities with lived experience to identify the opportunities and solve the challenges that matter the most



Glo-cal approaches

Bringing the best of all worlds

Tackling local challenges through deep community insight and global knowledge, expertise, and best practice

Venture support

Curated programs supporting ventures across the maturity spectrum

Providing access to knowledge, network and financial capital at the right time for AT innovators to build, test and scale

Source: GDI Hub

Opportunities: Decentralised models

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Energy access: m**ini-grids** enable self-sufficiency in remote areas.

Disability innovation: l**ocal manufacturing and repair hubs** increase access to AT in underserved regions.

Join **Module 6** to learn more on **Disability Innovation!**

Opportunities: Business Model Collaboration

Solar Home Systems: Affordable asset financing for Solar Home Systems (SHS), allows people in underserved communities to harness the power of electricity. This improves their incomes, productivity and quality of life.

Near Vision Glasses: Near vision impairment can be easily corrected with a pair of glasses. When corrected this is proven to improve quality of life, productivity, and income.

Sources: Sun King / GDI Hub

Opportunities: Cross Cutting Venture Support

Global Disability Innovation Hub

Energy Access

Assistive Technology

There is an opportunity to building linkages and thematic connections between the two sectors.

5 Summary and Next Steps

Module 2: Key takeaways

Global Disability Innovation Hub

1. Disability innovation – Overview:

- Energy access innovation could **directly influence 'powering assistive technology (AT)'**
- Affordable and sustainable adaptation or alternatives for the 22 energy-based WHO-listed priority assistive products is a high-potential opportunity.

2. Market Challenges and Opportunities:

- Solving the **unmet need** for AT requires us to test **innovative business models** that transcend traditional strategies.

3. Path Forward – Ecosystem Strengthening Interventions:

- The interplay of Need and Demand for assistive technology – and how these are influenced by access to energy

Suggested actions for TEA partners:

- Broker **partnerships between energy access innovators and disability innovators**
- Think about how taking an **'appliance as AT'** approach could amplify your impact
- Explore **new program collaborations** at the intersection of Energy Access and AT

Next steps

Global Disability Innovation Hub

Triage clinics and technical assistance:

TEA Partners can now **book one-hour appointments** with the GDI Hub team to discuss any questions or ideas on disability inclusion and innovation. 1-2-1 technical assistance support is also available from the GDI Hub team.

Scan the QR code to book your slot or email b.nagendran@ucl.ac.uk

Thank you!