

**AT2030**  
Innovation Insights

# Assistive Tech Impact Fund, the story so far:

## Insights from the first cohort of AT ventures

**Cluster 2  
Innovation**  
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**ASSISTIVE TECH  
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The Assistive Tech Impact Fund (ATIF), an AT2030 project, funded by UK Aid and led by the Global Disability Innovation Hub, is the world's first investment vehicle dedicated to testing and evaluating local solution models that have the potential to scale-up assistive technology innovations in emerging markets. ATIF provides grant funding as well as bespoke business, research, and technical support to pioneering Assistive Tech (AT) innovators working towards increasing AT access to millions of AT users across Africa. This paper presents key insights from our work with the first cohort of AT ventures who are pushing the boundaries of AT innovation and disrupting the archaic models of AT production and supply in the African market.

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## AT2030 & ATIF

AT2030 tests 'what works' to improve access to life-changing assistive technology (AT) for all; investing £20m over 5 years to support solutions to scale. Within AT2030 the innovation cluster supports a range of programmes to overcome the valley of death where many AT ventures perish. Building on the success of the Innovate Now Accelerator in Nairobi, Kenya, Africa's first AT accelerator, we launched ATIF. Innovate Now is powered by the GDI Inclusive entrepreneurial curriculum and toolkit and delivered by African Medical and Research Foundation (AMREF). The focus is on early-stage support for ventures with in-country live labs for product testing. In contrast, ATIF works with established ventures to develop a business model and test this in East Africa building further towards scale and sustainability.

Globally, there are 1.2 billion disabled people, and this is set to grow to over 2 billion by 2050. The World report on disability (WHO & World Bank 2011) show that 90% of disabled people do not have access to the AT they need to achieve independence, participation, and the full realisation of their human rights – that's 900 million people globally with an unmet need and 80% are based in Low- and Middle-Income Countries (LMICs).

ATIF is addressing this market failure, spanning challenges at both policy and practice-level, by investing grant capital (up to £200K) alongside 6 months' custom venture support. ATIF is tackling one core challenge by identifying key barriers to scale for African innovations. The scaling of AT production in Africa could reduce costs to the user, thereby increasing access to AT and enabling local solutions for local AT access challenges.

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New advancements in technology have led to a rapid growth in AT innovation leading to promising solutions and products (Holloway & Dawes, 2016). Although many innovators aim to develop affordable AT for low- and middle-income countries (LMIC), ATIF has uncovered that they often lack an appropriate business model that would enable them to successfully establish themselves in an emerging market and reach hundreds of millions of disabled people currently without access to AT.

Through the ATIF Scale Studio, AT start-ups and scale-ups are given bespoke support to expand into African economies. ATIF's goal is to position AT solutions for low- and -middle income populations on a path to scale.

ATIF's Scale Studio has uncovered that the barriers to scale are found in outdated and centralized production and service models, unresponsive distribution and manufacturing systems and inflexible financing solutions. Therefore, ATIF invests in, and provides custom venture building support to AT innovators that are ready to build responsive and flexible local solution models to scale.

In the first recruitment cycle between November 2020 and May 2021, ATIF received over 80 applications, from which a first cohort of 5 portfolio ventures were selected. The insights below have been gathered through research and collaboration with the portfolio ventures and tell the story of ATIF's work so far.

ATIF and partners would like to thank our AT users and portfolio ventures for their hard work, tenacity to explore new partnerships and models and to really push the boundaries of true innovation, and for eagerly doing their bit (and beyond) to grow the assistive technology sector.

## The first cohort of ventures



**Wazi designs, manufactures and distributes the first East African prescription eyewear brand in Uganda.** Wazi offers high quality eyewear designed for the African market through local design at affordable prices. **Working in: Uganda ug**



**hearX AI-enabled clinical smartphone hearing solution** makes it possible for lay-health workers to detect and diagnose hearing impairments, and prescribe hearing aids, all in one sitting. hearX are currently testing a flexible payment option model in low- and middle-income countries. **Working in: South Africa za / Kenya ke**



**MiracleFeet make and distribute a low-cost brace** to reduce impairment caused by clubfoot through the Ponseti method. The brace is currently provided free of cost to clinics and practitioners. Miracle Feet are exploring providing the brace for a fee, to create a revenue stream using a social enterprise model. **Working in: Nigeria ng**



**OADCPH are distributing high-quality AT across Africa,** providing accessible supply chains and flexible payment facilities to NGOs, clinics/hospitals, rehab centres, and other clients. OADCPH are expanding into East Africa and creating an online store.

**Working in: Togo tg / Kenya ke**



**Koalaa produces an affordable, upper-limb soft prosthetic.** Based in the UK, Koalaa are developing an end-to-end service blueprint for providing prostheses in low-income settings. **Working in: Sierra Leone sl**

## Insight 1: Growing the sector comes with an 'innovator burden'

**In markets without an enabling environment, innovators are left to do it all.**

In this budding sector, innovators are often burdened with the need to account for and overcome complex regulations, processes, bureaucracy and local bylaws. In locations where international agencies, national and local government and civil organizations play a role in facilitating adherence to regulation, process and bylaws, an enabling environment accelerates progress. This has been evidenced in Sierra Leone, where Koalaa has quickly found a distribution system by partnering with the local government, the National Rehabilitation Council, as well as other supporting AT2030 activities undertaken by the Clinton Health Access Initiative (CHAI) in aid to government.

Government clinics in Sierra Leone have a small budget for AT and have engaged proactively with Koalaa and others – clinics are eager to support sustainable organisations instead of the free, adhoc offers from NGOs. For Koalaa this has already encouraged them to explore Rwanda as their next market, where the government system is stronger. Even though consumer purchasing power might be greater in countries like Nigeria.

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In Kenya, with OADCPH, although there was less of an enabling government, the national at-scale NGO and advocacy organisation APDK (Association for Persons with Disabilities Kenya) had regional Hubs and networks OADCPH could tap into.

In middle-income countries, MiracleFeet have found governments can be reluctant to invest in braces where citizens could pay for themselves. Working with markets where the government is the main source of finance has proven simpler.

***“In Kenya, one person would tell us we need one thing to register. Another would tell us we need something else. One person would say we should register as a Ltd Company. Another that we should register as an NGO.”***

**Anareme (Head of Projects, OADCPH)**

## Insight 2: Ventures are pioneering business models in the sector

There is a variety of business model experimentation taking place:

- **Cross subsidies:** Koalaa generates a revenue by selling their product in HICs. They use this revenue to subsidise their work in Sierra Leone. MiracleFeet will sell product using a sliding income scale for the first time in order to cross subsidise existing donations.
- **Pay-as-you-go:** MiracleFeet will soon trial subscription, with the expectation that this model will enable users to swap out braces as the child grows without sudden large expenses that may otherwise cause the family to discontinue the intervention. hearX expect a subscription model in partnership with a financial technology company will enable users to repair, maintain and replace their hearing aids without sudden large expenses. **‘Matrix’ or blended funding: In low income countries such as Sierra Leone, even the most low-cost AT can be unaffordable for the citizens. To respond to this challenge,** Koalaa will finance operations in Sierra Leone via a combination of government spend, NGO spend, user spend, and cross-subsidisation, all working to “Chip away at the problem” of making the AT affordable for users.
- **Financially sustainable NGO:** OADCPH, who distribute high quality ATs to clinics and service providers, have been unable to fulfil orders in a timely



manner due to slow manual ordering systems, large transportation distances and low cash flow caused by manufacturers requiring payment before even shipping the product. By digitizing ordering and offering flexible payment solutions and decentralizing their warehouse they have increased orders and saved transportation costs and are now making a profit on the sales of goods. All these measures combined gives them cash flow allowing them to further increase the volume of OADCPH sales supported via a digital platform + via an East Africa Hub in Kenya.

- **Memberships:** OADCPH has a strong membership from paying customers who gain access to their extensive product catalogues and educational training services in return for a small annual fee.

#### Business models our ventures have pivoted away from:

- **Direct To Consumer (DTC):** Accessing users and relying on them for a sustainable business model *on their own* is very hard. MiracleFeet and OADCPH all go through hospitals, clinics, rehabilitation centres, whilst Wazi and hearX are diversifying away from pure DTC to working with existing health sector distribution partners and potentially with department stores too.

***“No one source of revenue will ever be enough. So, we’ll keep chipping away at the cost, through our global sales, through NGO funding, through government support, and through innovative user financing”***

**Ewan (CEO, Koalaa)**

## Insight 3: Scaling pathways are predictable, with partnerships and catalytic cash injections adding oomph to organic growth

### 3 scaling pathways are being explored by the current ventures

- 1. Organic growth with strategic outsourcing:** In a sector which is underdeveloped and fragmented, one of the quickest and most efficient pathways to scale is to utilise the networks from more established sectors such as healthcare. These partnerships support the innovator, but also gives more established players the chance to experiment with new verticals or revenue streams. **hearX** managed to deal with distribution challenges by partnering with health technology company Ilara health. **MiracleFeet** have also seen much stronger traction distributing their braces through partnering with key strategic hospitals, compared going direct to consumer.
- 2. Organic with capital step change:** An organic pathway but only with a cash injection - grant or debt financing - to reach economies of scale. Wazi used their grant capital to upgrade their manufacturing methods and produce 10x more than the previous year, allowing them to 10x revenue. **OADCPH** used capital to purchase more stock and be less at the mercy of timely payments from wholesale customers to manage their cash flow.
- 3. Government:** **Koalaa** have agreed a memorandum of understanding with DoH in Sierra Leone. Though these contracts take time and offer no guarantee that the same in a second country will follow due to local laws and AT regulations.

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## Insight 4: A playbook for registering new markets is emerging

**4/5 of our ventures have entered new markets and each market had inconsistent and unpredictable requirements. ATIF has begun to compile these requirements alongside ways for innovators to meet them.**

- Put 'hire' or 'entity' on the backburner and focus on point people and strategic partners to unlock progress
- Find a point person local to the market, who has done this before, and understands the healthcare and legal issues of the land. **MiracleFeet**, worked with Nifemi Aluko, from KPA. **hearX** contracted a local law firm for setting up in Kenya as well as a separate company to support specifically with medical registration.
- Consider a strategic partner who has experience in scaling or setting up their own company in the desired country/location. **OADCPH** found APDK in Kenya, and **Koalaa** are working with CHAI and the National Rehabilitation Council in Sierra Leone, **hearX** with Ilara health, **MiracleFeet** with KPA and **Wazi** with both Cubitts and ID Conception.

***“Two partnerships with key players - with the government of Sierra Leone and Clinton Health Access Initiative (CHAI) have been catalytic for us. We could have kept going through all the NGOs and grassroots organisations, but this way we’re able to truly embed within a country.”***

**Niall (Head of Future Projects, Koalaa)**

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- Poor user experience of bureaucratic processes means AT Innovators wanting to scale are likely going to need to prepare more documentation than it might originally appear. **OADCPH**'s initial attempts to register in Kenya, as either an NGO or a Ltd company, were very difficult. **hearX** registering for medical products has taken months due to the documentation needed from manufacturers. **MiracleFeet** found that it was easy to import braces for donation due to facilitatory import exemptions. When they tried to register their braces for sale they were faced with strict quality control and import regulation that made it challenging to integrate all the components of the brace (shoes, attachments and brace) that were made by different manufacturers.
- **Plan around election cycles.** Regulations take a longer time during an election year and organisations needs to plan for it. **OADCPH** were advised to wait until the election to register as an NGO in Kenya as it would take longer (sometimes up to 2 years) due to vetting during election year whereas ideally it would have taken about 3 months. They instead looked for a local partner (APDK) to help with the initial setup until things settled.
- AT Innovators need to be prepared for a difference in 'what qualifies' in each country. Certifications, from medical to manufacturing, that work in one place won't always be useful elsewhere so make no assumptions on how ready you are. Allow time for new market research and multiply any time you've allocated to this work by three.

- Be ready for storage facility inspections ahead of sending your first shipment of product. If you can't get ready in time, consider paying a third party to collect and store your first few orders, otherwise be prepared to have any stock stuck up at customs for a long time. Inspections ahead of first shipments can cause delays. AT entrepreneurs should expect to experience significant barriers or consider paying a third party to collect and store initial orders to mitigate against the risk of shipping delays.

*“If we get to the level of provision [of AT to clients] in Kenya that we have here in Togo, OADCPH will become a much more viable and resilient organisation”*

**Anarame (Head of Projects, OADCPH)**

## Insight 5: New and novel payment solutions that are being trialled are showing that people are able to pay towards AT, but only time will tell if they stick

### 3/5 grantees are trialling new kinds of payment solutions and the early data is promising

Across the portfolio, grantees are trialling new payment models like subscriptions, buy now pay later to create more accessible financing options. In Sierra Leone user and stakeholder research showed that end users pay 0-50% of the cost of the product, but 0% towards ongoing maintenance for prostheses. **Koalaa** will experiment with flexible payment facilities over time, to fund part of the product + maintenance cost - first in Sierra Leone

**hearX** is trying out a pay-as-you-go model for their pilot with Ilara. Customers are paying over a 2-year period through mobile money and gain access to accessories like batteries and customer support during that time

**MiracleFeet** have experienced willingness of doctors and parents to pay for the initial brace, but the hard work is getting people to come back and continue treatment with bigger braces. They are trialling a deposit and subscription payment to see if this keeps them on the care journey.

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## Insight 6: Innovative business approach to reach new verticals in the market ATIF's thesis on reaching poorer populations was through business model design and it's playing out in a few different ways

ATIF partners know that an innovative business model design is needed to reach the world's poorest people. ATIF ventures are employing new approaches to extend their reach to new market segments, starting with those with a minimum sustained income stream, earning between \$2-\$5 a day. They are likely able to access credit and wouldn't be strained in paying flexible payments for products. This is still a huge market (roughly 12.6 million people in Kenya alone)

### How are the ATIF ventures innovating in this?

- **Wazi** are growing 'demand in the middle' and will target BOP customers by creating new Corporate Social Responsibility (CSR) partnerships to increase access to eyeglasses and testing.
- **hearX** is engaging existing Ilara health customers who earn from multiple income streams. The majority of whom are employed or self-employed
- Through evidence-based research, **MiracleFeet's** learned to target urban hospitals (and therefore those who can afford the travel) first and use the revenue to offset costs for their existing programs, which deliver the brace free to all patients.

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## The story continues...what next for ATIF?

### How do we build on initial success of ventures and these insights?

ATIF ventures know that 6 months isn't long enough to grow at scale in such challenging market environments but these promising ventures have highlighted areas for improvement and additional momentum. The combination of catalytic grant capital and technical assistance has shown the first signs of progress.

ATIF is continuing to uncover how AT entrepreneurs in emerging markets can overcome the 'valley of death' and go on to scale. However, in order to succeed, the ventures need more than the current £2 million investment made by UK Aid, through AT2030. Donors, investors, governments, sector stakeholders and other decision makers play a critical part the success of the AT sector in emerging markets. To make a real difference in AT access for millions of disabled people across Africa and over a billion around the world, ATIF and the AT ventures need:

- Continued investment by private and government donors
- Increased partnerships to help with knowledge-sharing and to open doors into national networks
- The disability movement to challenge stigma around disability and the use of assistive technology to increase demand
- Governments that understand the unmet need for AT and the return on investment— for every \$1 USD invested into AT, \$9 is returned into the economy (ATscale, 2020)
- Policy-makers that create and implement policies to drive AT innovation
- Reduction or the elimination of tariffs on AT production
- The inclusion of disability in on-going impact investments



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## What is next for the AT entrepreneurs in emerging markets?

In addition to these 6 insights, ATIF have produced 8 insight papers that can inform investors, venture capitalists and entrepreneurs. There is now a growing body of evidence for investors and venture capitalists to guide decision making about future offers and proposals to AT entrepreneurs. ATIF Scale Studio was designed to run over 18 months and in just 18 months ATIF is just 3 months away from proving that revenue generation is possible for all 5 portfolio companies following a financial injection and venture building support. The AT sector needs the support of the financial stimulation that investors can create, and investors, especially impact investors, need the kind of portfolios that AT entrepreneurs can offer, life changing solutions that target the most vulnerable populations. To ensure the success of investor/entrepreneur partnerships investors need:

- The support of ATIF to provide the technical aspects of tailored venture building targeted to AT specific challenges.
- An investment committee who is familiar with all aspects of AT The evidence generated by ATIF to assess a potential
- AT portfolio company, especially when analysing commitment (Chakma, et al. 2010).
- To provide additional value-added services networking and facilitating partnerships to grow trust in the AT ecosystem that can lead to financial growth. This element cannot be underestimated ([Chakma, et al. 2010](#)).

To continue to follow the next chapter of these 5 promising ventures and to see what's next for ATIF, visit [www.atimpactfund.com](http://www.atimpactfund.com) or [www.disabilityinnovation.com](http://www.disabilityinnovation.com)

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