Disability Innovation:

Empowering the Entrepreneurs Reimagining Inclusion Around the World

September 2023

village capital

SMART JOB

JPMorgan Chase & Co.

Participating Disability Technology Accelerators

2GETHER INT.

AssisTech Foundation
Accelerating Social Impact

ats labs

CSD SVF

Global Centre of Possibility

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REMARKABLE

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SYNERGIES WORK

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Foreword

Pete Horsley grew up in Australia in the 1980s with a single mom and an eldest sister with multiple disabilities. His sister helped plant the seeds of what could be more efficient and affordable ways to remove barriers in a world not built with her in mind. Years later, he became an integral part of the team at Cerebral Palsy Alliance, in Sydney, Australia, where he leveraged his creative vision into founding Remarkable, a program that provides critical support to entrepreneurs in the disability sector to take their ideas to market and to scale technology solutions that people with disabilities urgently need.

Diego Mariscal was born with Cerebral Palsy in the early 1990s and raised in Monterrey, Mexico where he won a Gold Medal in the national Paralympic swimming competition. He came to the United States to attend university and soon left school to pursue launching a disability entrepreneurship program, 2Gether-International, to support founders and makers with disabilities to launch their own sustainable and scalable businesses. He maintains that entrepreneurship is a natural use of his talents, a skill he believes is invariably born from the powerful problem-solving and grit required throughout his lifetime of living with a disability.

Today, Pete and Diego are joined by innovators and Entrepreneurial Support Organizations (ESOs) across the world, including in Canada, India, Kenya, New Zealand, the United States, and the UK who are likewise working to support hundreds of entrepreneurs with disabilities each year, and those working in concert with them to produce radically inclusive and accessible products and new technologies that will send ripples of change throughout entire industries and society.

A powerful movement has begun to design products and services with the multi-billion person disability population in mind, and to close the disability wealth gap that has left a nearly two trillion-dollar hole in global GDP. The movement is led by dreamers and makers, leveraging the lived experiences of disability to invent solutions that have the potential to reach millions of people and a market that, until now, has been vastly overlooked by the mainstream technology and innovation sectors.

This explains why we launched the Moonshot Disability Accelerator Initiative at the Clinton Global Initiative (CGI) last year and partnered with the world-class team at Village Capital to compile this first-of-its-kind report. Historically, in error, disability has been associated with a deficit, even though it really has its closest parallels to innovation, problem-solving, and design. Likewise, for far too long, it has been falsely assumed to create mostly cost when, in fact, disability possesses the greatest potential to add concrete value, both to civil society and the global economy, in the coming decades.

While throughout much of our collective history, becoming an innovator and starting a business has been largely out of reach to people with disabilities, this is changing rapidly. As the world awakens to the business necessity of products and services that originate with disability talent and design at its heart, **I can write with certainty: the time has come for this powerful, talented, and rising group of entrepreneurs with disabilities across the world to take their rightful place in the capital markets and innovation economy.** This economic revolution will be bolstered by increasing the capacity of those that support entrepreneurs in the disability sector at their earliest stages of ideation throughout the world and propelled by those who invest in their products to achieve a sustainable scale of impact that materially improves peoples' lives.

This report, representing the first phase of our Moonshot Initiative, was a global experiment to understand where disability innovation assets lie across the world and to promote new understanding of the baseline for these critical programs and the capacity-building needs among these partner programs. This report shares the results of this initial assessment. Most critically, this report has highlighted a new powerfully talented group of disability-focused entrepreneurial support organizations that will inspire countless others to join the sector.

Regina Kline

Founder, SmartJob

Founder & Managing Partner, Enable Ventures

A Note on the Words We Use

Recognizing that viewpoints can vary, we highly value the insights derived from personal experiences. It is essential to remember that language and terminology constantly evolve, and a "one size fits all" solution remains elusive. At Village Capital, our commitment revolves around language and imagery that avoids stigmatization and outdated stereotypes. To ensure the authenticity of the narratives we amplify, we adhere to the best practice of "self-identification," which involves asking individuals about their preferred identification and references.

In the context of our discussion about disability rights — an endeavor encapsulated by the motto "Nothing About Us Without Us"— we have opted to employ the term "people with disabilities" in alignment with the language preferences of the majority of those we engaged with during interviews. It is essential to recognize that disabilities can encompass a broad spectrum of experiences, and our approach hinges on the collective input and collaboration that shaped this report.

Looking beyond this report, the utmost priority lies in nurturing respect and cultivating a mindset of inclusivity. We share Tangled Art & Disability Accessibility guidelines for respectful portrayal and description of disability:

- Respect the person;
- People with disabilities are not "suffering from," "victims of," or "afflicted by" their disabilities nor are they overcoming their disabilities;
- Do not portray people with disabilities as heroic overachievers or long-suffering saints;
- Avoid sensationalizing and negative labeling;
- Do not equate disability with illness;
- People with disabilities do not have special needs, but may require certain accommodations.

Further Context on the Terms: People With Disabilities and Disabled People

The phrase "people with disabilities" is an example of people-first language, which puts the "person" or "people" before the word "disability" or the name of a disability. The idea of this framing is to reinforce the idea that someone's disability may be one characteristic of their life. Still, it is not the defining characteristic of the entire person. Many disability advocates and institutions, such as The Americans with Disabilities Act (ADA), emphasize using person-first language. It is generally and widely considered appropriate and respectful to use people-first language, as it seeks to acknowledge individuals as unique and whole outside of their disabilities, with the caveat that some people or cultural disability communities may have a different preference for identifying language.

The phrase "disabled people" is an example of identity-first language (in contrast to people-first language). It is the terminology preferred by some disability activists around the world, including in Great Britain and the United States. Syracuse University's Disability Cultural Center says, "The basic reason behind members of (some disability) groups' dislike of the application of people-first language to themselves is that they consider their disabilities to be inseparable parts of who they are," preferring to be referred to as "autistic," "blind," or "disabled." Several US-based disability groups have always used identity-first terms, like the culturally Deaf community and some in the Autistic rights community.

After receiving feedback from members of various disabled communities, the National Center on Disability and Journalism's Disability Language Style Guide is no longer offering a default recommendation on people-first versus identity-first language. Instead, it is encouraging people to double down on finding out how people want to be described.

In this report, where individual preferences cannot be determined, we will use the preference expressed by a majority of those we engaged with during interviews, consistent with our belief that the lived experiences of our intersectional identities are essential, and crucial to acknowledge.

Executive Summary

The disabled community is not monolithic. It is an all-encompassing term that includes people with physical, mental, developmental, and intellectual disabilities. This diverse group accounts for nearly 1.3 billion[1] individuals worldwide. Astonishingly, despite the sheer magnitude of this population, systemic exclusion remains rooted in societal infrastructures. Only a fraction of people with disabilities have access to assistive technologies enabling social and economic participation.

The path to constructing more inclusive societies demands a comprehensive array of accommodations, which represent the essence of addressing the needs of each individual.

From mobility challenges to sensory and non-visible disabilities, these variations manifest in various forms, reshaping how individuals interact with the world around them. While progress has been made in recognizing and acknowledging the rights of people with disabilities —led by, and hard-won by the diverse community of disabled activists over decades— our societies are still not built for inclusion. Multifaceted barriers extend beyond the physical realms into education, employment, public spaces, and even entrepreneurship, limiting their opportunities.

Our report delves into the current state of the disability innovation ecosystem, highlighting the accomplishments and the importance of the perspective of leaders within the innovation ecosystem while identifying avenues for potential improvement.

The Current State:

- **The Cycle of Exclusion:** The chasm between the needs of those with disabilities and available solutions signifies a pressing challenge to ensuring equitable access to opportunities. With 80% of the global disability population residing in developing nations[2] and their 50% representation of those living in long-term poverty in the US,[3] issues like education inaccessibility, unemployment, social collaboration, economic access, and many more, are pronounced considerably. This collective exclusion not only violates human rights, it also hinders global progress toward the United Nations' Sustainable Development Goals (SDGs) and impedes people with disabilities to participate and shape our culture.
- **The Power of Inclusive Design:** History has shown that when designs originate from accessibility, revolutionary technologies emerge. The integration of inclusive design in our daily tech —from keyboards to captioning and touchscreens— is a testament to this. Companies embracing this methodology are more adaptable and resilient in rapidly changing environments. By designing with inclusion and accessibility at the forefront, we can craft products reflecting the proper range of human experiences.
- **Emerging Disability Innovation Ecosystems:** As startups move away from the conventional medical-centric model of assistive technology, a wave of innovative, user-centric products is being ushered in. The global market for such products is colossal, with a potential $1.9 trillion GDP gap stemming from the unmet needs of people with disabilities.[4] Despite the potential, this market remains fragmented, calling for an integrated ecosystem to better support innovators working to meet these needs.

Strengths:

- **The Rise of Inclusive Design:** Concepts like inclusive design, accessibility features, and inclusive UX efforts are slowly gaining traction, emphasizing products and solutions birthed from diverse perspectives and experiences.
- **Historical Innovations:** Past innovations driven by disability needs —such as electric toothbrushes, audiobooks, and emails— have showcased the widespread applicability of disability-led innovation.
- **Entrepreneurial Spirit:** Entrepreneurs with disabilities are pushing boundaries, creating and producing solutions that are not only functional but also beautiful, appealing, and cutting-edge.
- **Mindset Shift, Entrepreneurship Ecosystem:** There is a rising tide of ecosystem builders and supporters, most of whom have lived experience of disability and are demanding a paradigm shift in the way we think about funding this important and transformational sector within startups and innovation.

Barriers to Scale:

- **Unresourced, Supply-Demand Imbalance:** While individual-driven demand for assistive technology is rising, the supply side remains inadequately developed.
- **Overlooked Markets, Access:** One of the most transformational tools available for improving the lives of people who live with disabilities is access to assistive technology. However, large incumbents dominate the market, and continue to underserve people in both developed and developing markets.
- **Overlooked People, Education, and Employment:** Systemic challenges within schooling systems lead to disparities in education are caused by a lack of understanding of children's needs and the training to support children with disabilities. This then trickles into employment opportunities for those with disabilities.[5]
- **Resourcing, Entrepreneurship Ecosystem:** To improve the lives of billions of people globally and capture the immense opportunity, effective resourcing of support organizations and startups is required.

While the world has made strides in inclusive innovation, significant work remains. Addressing the exclusion experienced by the disability community goes beyond equity and equal opportunities; it is a vital step towards unlocking the immense and untapped potential within each individual. It is about reshaping societies and economies, making them more resilient, diverse, and, ultimately, human-centric. This report hopes to catalyze this transformative journey, underlining the immense possibilities waiting to be realized.

Methodology

This report presents a snapshot of the disability innovation ecosystem based on participant self-assessments, research interviews, a review of relevant articles, databases, toolkits and guides, and reports on trends.

The participating ESOs first self-assessed their organizational capacity using Village Capital's web-based platform, Abaca ESO. Abaca ESO, a companion tool to the entrepreneur-facing Abaca, starts with an evidence-based assessment that helps ESOs level-set and chart their development relative to others. It then collects answers to custom questions, in this case, related to disability innovation. The data gathered in Abaca ESO became the foundation for follow-up interviews with the participants.

The insights come from ten interviews with leading disability innovation and assistive technology accelerators from Australia, Canada, India, Kenya, New Zealand, and the United States. Qualitative interviews were coded using an emergent strategy, looking for concepts and qualities, which were then grouped into themes.

Motivation

Our goal is to increase awareness and mobilize capital and resources for the organizations and the entrepreneurs they support. They are leading the way.

Why Ecosystem Building

Village Capital has spent over 12 years improving access to capital for early-stage ventures across Asia, Europe, Latin America, MENA, Sub-Saharan Africa, and the United States. Across regions the challenges in providing financial access to high-growth potential impact ventures usually include:

- Access to Finance:
    - Limited funding sources for pre-seed, seed, and growth-stage capital alongside working capital;
    - Inadequate deal flow;
    - Pattern recognition and other investor bias;
        - Insufficient financial inclusion of women and youth;
    - Finance providers risk aversion;
        - Impact investments seen as "risky."
- Overlooked Talent:
    - Limiting access to talent for employment;
    - Limiting pool of founder talent;
    - Limited expertise in identifying and supporting talent.
- Support Systems:
    - Limited entrepreneur networks;
    - Limited access to quality and diverse mentors;
    - Limited support infrastructure (physical infrastructure and technology);
    - Misaligned incentives between actors.
- Market fragmentation:
    - Limited coordination and collaboration amongst actors within a broader ecosystem;
    - Limited coordination and collaboration amongst actors regionally and globally;
    - Limited regional regulation to support startup growth.

Although extremely challenging to overcome, many ecosystems have led the way and shown that with the right combination of actors and capital, progress can be achieved. There are evolving, tried, tested, and adapted good practices. One of these practices is to take an ecosystem-building approach.

What Is Ecosystem Building?

It creates an enabling environment for early-stage startups to thrive by unlocking critical social and financial capital. At Village Capital, we focus on impact growth and driving systems-level changes that make impact investing more inclusive and empower a broader range of entrepreneurs.

Ecosystem builders prioritize clear communication and foster connections between entrepreneurs, investors, mentors, and other stakeholders. They play a critical role in building and strengthening the infrastructure of a supportive and collaborative environment that enables entrepreneurs to access the resources they need to succeed. Through their efforts, ecosystem builders help to drive positive social and environmental change, creating a more equitable and sustainable future for all.

There is no "one size fits all" for ecosystem building, so it is important to conduct a needs assessment of each ecosystem to understand who the main players are and where the challenges are for entrepreneurs, investors, and Entrepreneur Support Organizations (ESOs).

Resources and References

Innovation thrives in dense networks, where financial and non-financial actors are interconnected and interdependent. Furthermore, a robust entrepreneurial ecosystem harnesses the power of collaboration and connectivity to generate outcomes that exceed what could be achieved through individual efforts alone.

- What Ugandan ESOs Can Teach the World, Village Capital, 2023
- Self Propelling Ecosystem Development, Endeavor, 2022
- Alternative Investment Strategies to Drive Inclusive Innovation, Village Capital, 2019
- Entrepreneurship Ecosystem Building Playbook 3.0, Kauffman Foundation, 2019
- How to Boost Early Stage Deal Flow in Africa, Financial Times, 2019
- Scaling access to finance for early-stage Enterprises in Emerging Markets: Lessons from the Field, DGGF, 2019
- Unlocking Pipeline: A Playbook for Entrepreneur Support in Africa, Village Capital, 2019
- Fostering Productive Entrepreneurship Communities, Endeavor, 2018
- Missing Middles, DGGF, ON, 2018

This field is in a constant state of evolution, with ongoing research and development driving its progress. We are committed to remaining at the forefront of inclusive conversations and actively contributing to its evolution.

Introduction

The disability innovation ecosystem stands at the nexus of inclusivity in society, design, and technology aiming to reshape the world in which we live to be more equitable for all. Historically, societies have often seen people with disabilities through the lens of the "medical model," as a problem to be fixed so they can operate in society like people without disabilities. This approach has displaced and relegated people with disabilities to the sidelines, resulting in a cycle of exclusion. Yet, throughout history, necessity has acted as the catalyst for innovation, with many technological advancements having their origins in addressing needed accommodations. From the early typewriters designed for people with visual impairments to touchscreen interfaces rooted in managing chronic pain conditions, disability-led innovation has always been present in technological progress.

As the globalized world continues to evolve at an unprecedented speed, the disability innovation ecosystem is increasingly crucial to building a just and sustainable society that considers the needs of everyone. With an estimated 1.3 billion individuals identifying as having a disability, there exists a pressing need and opportunity to ensure that innovative solutions are not only accessible but also inclusively-designed. This ecosystem does not just provide assistive tools; it challenges the very paradigms of design from aiming to serve the interests of a "normal" end-user to reimagine all people as a continuum of embodiments, identities, and realities and push for a world everyone can shape and thrive in.

The objective of this report is twofold:
- First, it aims to provide a comprehensive overview of the current state of the disability innovation ecosystem, assuming that there is more than a "single story" of disabilities. It will examine how culture, language, and certain preconceptions are considerably shaping the field, highlighting key advancements, players, and the impact on society at large.
- Second, it identifies the gaps and areas for improvement, setting the stage for actionable steps forward. Our journey through the past, present, and potential future of disability innovation and culture promises to offer insights, challenges, and actionable steps.

Context

The Cycle of Exclusion

People with disabilities historically faced a disheartening reality of social and economic exclusion, primarily stemming from the disconnect between their needs and the available solutions. This discrepancy arises from a prevailing but flawed notion that certain abilities are innately superior, ultimately subjecting people with disabilities to the discriminatory effects of ableism. Yet, within this gap lies an impactful prospect — an avenue to drive progress in health equity, economic mobility, expanded sensibility, and beyond. These possibilities, enriched by the diverse perspectives of those who navigate the world through distinct pathways, hold the potential to reshape our collective landscape.

The disability population is the world's largest minority, estimated at 1.3 billion.[6] Disability is part of the human experience. In addition to lifelong conditions, disability can be temporary, such as during an illness or related to aging: the prevalence of disability in those over 60 is more than 46%.[7]

The World Health Organization (WHO) estimates that only 1 in 10 can access the assistive technology required to participate in social and economic life.[8] While all human beings share the same basic motivations to be healthy and safe, and to feel connected, purposeful, and joyful, a huge proportion of people with disabilities are left out.

Disability

Broadly, there are two ways disability is defined. Both can be useful to consider as they both shape the disability culture. Outdated definitions tend to focus on a "medical model," where a person's life is affected by a condition and where "these impairments or differences should be 'fixed' or changed by medical and other treatments."[9] The medical approach has played a major role throughout the history of disability discrimination and efforts to pathologize disability and segregate people with disabilities from the mainstream of society. The social definition locates the disability at the points of interaction between the features of a person's body and the features of the society in which they live.[10] This perspective can highlight social barriers faced by people with disabilities, encouraging those with power to take responsibility to enable those without and to rethink society's organization. In 2011, the World Health Organization adopted the social definition of disability.[11] It is essential to realize that exclusionary systems and derogatory attitudes can be changed.

Assistive Technology

Any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of people with disabilities.[12] The WHO publishes a list of priority assistive products to inform member state policy.[13] It includes products such as walking sticks, braille displays, closed captioning displays, alarms, and fall detectors.

Without the appropriate assistive technology, it can be impossible for some people with disabilities to access education and work, including people with cognitive and developmental disabilities, which institutions often overlook. Nearly two-thirds of working-age adults with disabilities in the United States are not employed, constituting half of all those who live in long-term poverty.[14] Moreover, exclusion is particularly acute in developing countries, where 80% of the population with disabilities lives. Unemployment of people with disabilities is up to 80% in some countries, compared to 65% in the US.[15] A shocking 90% of children with disabilities in developing countries do not attend school.[16]

Globally, we are missing out on the creativity, intelligence, perspectives, and participation of people with disabilities in our civic, economic, and social life. The absence of this group within power dynamics perpetuates exclusion. It also keeps us from achieving the sustainable future that we need to survive as a species. We must address disability-based exclusion to meet the UN Sustainable Development Goals, in particular, Good Health and Wellbeing (Goal #3), Quality Education (Goal #4), Decent Work and Economic Growth (Goal #8), and Reduced Inequalities (Goal #10).

This report shows how the cycle of exclusion can be turned around.

Inclusive Design

When the inclusion of people with disabilities is prioritized, remarkable transformations unfold. Few people are aware of just how much of the technology we rely on daily emerges from a need to accommodate and include a wide range of physical, sensory and other needs. This list includes voice-to-text, texting, touchscreens, and captioning. All these technologies met the universal human need for connection in a new way because different situations were taken into account. Exemplary design emerges from embracing limitations, and our journey toward discovering novel avenues for design and creation, user interface and customer experience, is just beginning as we explore the vast array of disabilities that can inspire innovative approaches.

Increasingly, innovative organizations are applying "inclusive design" principles. Kat Holmes, a leader in the field of Inclusive Design, developed the following definition while working on design at *Microsoft*.

Inclusive Design
A methodology that enables and draws on the full range of human diversity. Most importantly, this means including and learning from people with a range of perspectives.[17]

Great designers are often found among those who have interacted with exclusionary designs every day of their lives. For those who are separated from what they love and care about, finding solutions is an urgent matter of justice.

Inclusive designers aim to build products that are born accessible by involving future users with the greatest barriers or challenges to use. Exclusionary design, on the other hand, tries to create the perfect product for a "typical" or assumed normative end-user who experience few, if any, barriers, which is far from realistic about the inherent diversity of the consumer base. Designing with accessibility at the forefront means designing for the true diversity of the human experience.

Inclusive products are usable in different ways by different people at different times. They increase human resilience, especially in an era characterized as "VUCA:" volatile, uncertain, complex, and ambiguous. For example, companies that already provided technology to enable their employees to work from anywhere transitioned much better to pandemic conditions.

Dr. Sébastien Jodoin is the director of the Disability-Inclusive Climate Action Research Programme and an Associate Professor in the Faculty of Law of McGill University. He lives with multiple sclerosis.

Dr. Jodoin advocates for climate action and researches its intersection with people with disabilities. Both climate change and ill-considered climate action can disproportionately and negatively affect people with disabilities. Dr. Jodoin is heat intolerant, like 65% of MS sufferers, so he researched solutions enabling him to go outside and play with his child during summer. His solution, a cooling vest —utilizing the same technology as mascots use under their costumes— holds exceptional relevance for those with this condition. Additionally, this cooling vest can potentially address a broader demand for relief from extreme heat for millions of people as the world experiences an increasing number of extreme heat waves.

You can listen to other disability pioneers' stories and work on the Remarkable Insights podcast.

Inclusive design transcends the consideration of disabilities alone; it embraces the concept of intersectionality, encompassing individuals marginalized by the convergence of various identities such as race and gender. This approach to design acknowledges our intrinsic interdependence, both among humans and within the broader ecosystem. Our strength lies in the unity that emerges from this inclusive perspective, propelling us toward a more empowered future.

Building Disability Innovation Ecosystems

The Entrepreneur Support Organizations (ESOs) referred to in this report work with entrepreneurs with disabilities to solve the challenges they have experienced firsthand. These startups are creating flexible, inclusive, practical, and cutting-edge technology products. This marks a crucial shift away from the conventional medical and institutional models that have shaped and produced assistive technology in the past.

In addition to getting great products to market, disability innovation ESOs are market makers and ecosystem builders. The market for assistive technology, until now, has been highly fragmented: a small number of big players have historically dominated high-income countries, usually supplying through medical and institutional routes. Some high-income countries, such as Australia,[18] empower individuals to purchase their own assistive technology, but the supply side is currently underdeveloped.

Strong built-up demand exists for products of all kinds that are born accessible. In the absence of a thriving private sector, there is an estimated gap of $1.9 trillion dollars in global GDP, representing the disposable income of people with disabilities who have been vastly underserved by inclusive accessible technology.[19]

Demographic patterns in high-income countries underscore a compelling need for enhanced and more inclusive solutions. Baby Boomers, recognized as the wealthiest generation to date, is now entering a phase of later life, confronting challenges related to diminished mobility or cognitive

functionality. Meanwhile, Millennials and Generation Z have grown up in an era characterized by civil rights advancements, and legal safeguards. As they navigate their working-age years, many have expressed an unwavering intolerance for exclusion from the digital transformation that is reshaping numerous dimensions of existence and the economy at large.

Low- and middle-income countries are drastically underserved by existing suppliers. With a lack of government or private sector support, people with disabilities rely on inadequate handouts from charities and NGOs.[20]

Assistive Technology in Education

A World Bank report examined the gap between advancements in assistive technology and its large-scale application in education in low- and middle-income countries.[21]
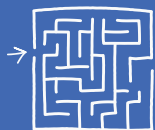
The report outlines five main challenges:
- Insufficient expertise in inclusive education and assistive technology among the people who work with and parent children with disabilities;
- High cost and inaccessibility of assistive technology;
- Products that are not truly inclusive of children with complex needs or are inappropriate for the use context;
- Fragmented responsibility for inclusive education;
- Project-based funding that fails to provide comprehensive and sustainable solutions.

This report outlines four recommendations for harnessing the power of assistive technology in education:
- Systems strengthening and market shaping;
- Community, family, and out-of-school learning;
- Open innovation and technology infrastructure;
- Data and evidence.

The insights shared by ESOs in this report are forging partnerships and networks that can change the assistive technology landscape globally. They act as the connector between governments, investors, entrepreneurs, corporations, academic institutions and, most importantly, the disability community.

We are imagining a future where people with disabilities participate and thrive in all arenas of life. Disability innovation is not new; it has been happening for hundreds of years, driving much of the world-changing innovations we know today (spoiler: see page 21). Inclusion is not a nice to have, but a necessity. The disability innovation ecosystem has significant untapped potential and, we believe that by directing resources and know-how into creating ecosystems where disability innovation can thrive, that potential can be unleashed.
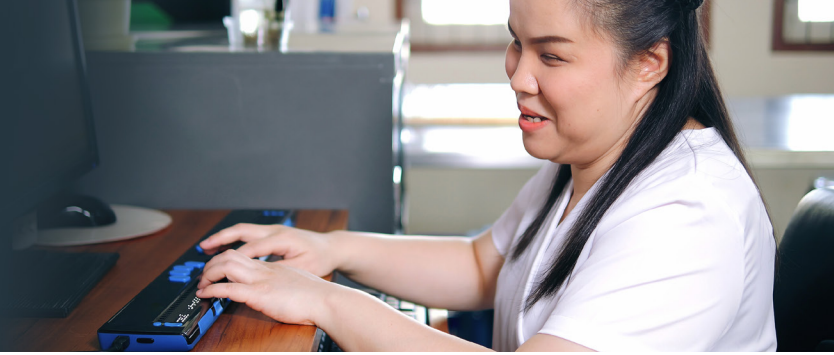
Innovations

Innovation From the Past

Disability innovation has always been an integral part of our world, and countless ingenious solutions have emerged from the diverse experiences of individuals with disabilities. When we prioritize disability innovation, we empower and create an inclusive society for people with disabilities to fully participate in society and discover solutions that can enhance the quality of life for everyone, like the ones we highlight below.

Keyboards

The earliest documented typing machine, the ancestor of the modern keyboard, was invented to enable a blind woman, Countess Carolina Fantoni da Fivizzano, to write. In one version of history, the typewriter was developed by the Countess' brother Agostino. The other, more romantic version suggests that the Countess was the friend and lover of Italian inventor Pellegrino Turri. Turri is said to have created the typewriter so that the blind Countess could write to him in private rather than being obligated to dictate the contents to another person.[22]
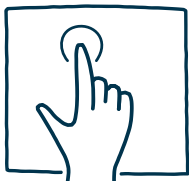
Touchscreens

The touchscreen technology that made Apple's iPhone a paradigm-shifter in 2007 was invented in response to a chronic pain condition. Wayne Westerman founded FingerWorks while a doctoral student at the university. His severe case of carpal tunnel syndrome meant that he needed a zero-impact method of inputting data. Along with his professor, John Elias, Westerman created the gesture recognition technology that is now standard on mobile phones.[23]

Email

Some of the earliest email protocols were created by Vint Cerf, a telecommunications engineer who experiences hearing loss. Cerf was motivated to work on email protocols, in part, as a way to stay connected with his wife —who also experiences hearing loss— when they were physically apart. Vint Cerf is recognized as one of the "fathers of the internet." He has also been a leading advocate for accessibility, authoring "The Internet is for Everyone."[24]

Innovation From the Present

Inclusive Functionality
Lazarillo (Santiago, Chile), Village Capital's peer-selected alumni, allows people with visual disabilities to navigate the world autonomously through a mobile app by working with a variety of businesses to create custom and accessible digital maps.

Lazarillo's digital maps and geolocation technology have been integrated into over 42,000 places, including universities, healthcare centers, transport systems, banks, museums, and restaurants.

Cutting-Edge Technology
SpineX (California, US) is a company developing groundbreaking technology to treat medical conditions, including cerebral palsy and neurogenic bladder. Spinal Cord Innovation in Pediatrics (SCIP) is a non-invasive device that uses electrical impulses to retrain the brain of children with cerebral palsy. The results of the first human study of SCIP, published in Nature Communications, showed improved voluntary sensorimotor function in 16 out of 16 children over a wide range of ages and severities of cerebral palsy.[25] Decades of research are bearing fruit, giving hope to people with neurological conditions.

Beautiful Design
Umps Link (Melbourne, Australia)[26] is a personal alarm for home use. The personal alarm can be activated when the person needs emergency assistance at home. It links to a 24/7 service where a real person will respond and connect the person in their home with the support they need, such as contacting a loved one or dialling an ambulance. It stands out because of its high quality design. The pendant can be customized with interchangeable, stylish cases. It is also comfortable to wear due to its soft curved edges and weighing only 14 grams. The communication unit that lives on the wall is slick and unobtrusive, looking similar to any other smart home device. This person-centred design is supported by the existence of Australia's National Disability Insurance Scheme (NDIS), which gives financial control to people with disabilities.
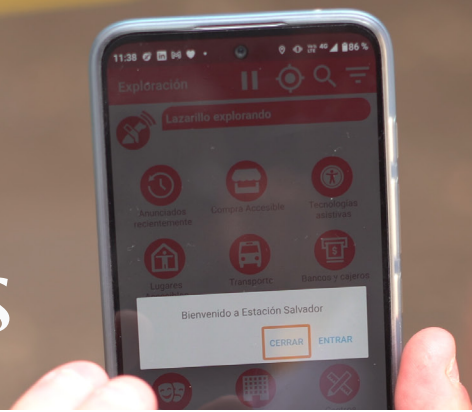
Inclusive Design
Sixth Sense by Hope Tech (Nairobi, Kenya)[27] is a haptic navigation system. The designers worked with the visually impaired to discover what impediments they face in daily navigation. While a cane gives excellent feedback about surfaces in front of you, it cannot tell you where you are going and it does not inform you about hazards that are at a higher level. Sixth Sense maps solid objects in your path and provides haptic and audio information to guide you to your destination.

Part 3:
Learn Directly From the Pioneers

We spoke to ten accelerators leading the way for disability innovation globally. Across the ten interviews, we identified three key themes:

- Inclusive Design as an Engine of Innovation;
- Activating Agency of People with Disabilities;
- The Business Case for Disability Innovation.

In the following section, we will dive into detail on these themes. Cross-cutting across all was the necessity for a mindset shift away from disabilities being seen as medical conditions and instead as a component of diversity.

Theme 1: Inclusive Design as an Engine of Innovation

Inclusive design is not just a token nod to accessibility. Instead, as we have discussed above, it is a potent engine that drives innovation forward. The principles and practices of inclusive design serve as a force propelling innovation to explore outside of the status quo and intentionally. Two common practices of inclusive design are co-production and meaningful participation. These two practices generate novel ideas, solutions, and breakthroughs that enrich the disability innovation ecosystem, leading to more inclusive designs that improve people's lives and welcome the full spectrum of the human experience.

As much as Silicon Valley professes to identify and support the outliers, investors and entrepreneurs alike have become risk averse limiting their potential for transformative innovations. Inclusive design represents a way to strategically and intentionally support the outliers, by honoring diverse makers and end-users, and in doing so, pick up the core of the consumer market.

Co-Production: Crafting Synergy

> **❝** It's about having a continuous feedback loop with users."
>
> Varun Chandak, Access to Success (ATS Labs)

Innovative solutions are often born at the nexus of necessity and creativity. Co-production is the process by which cross-disciplinary and divergent actors come together in the production process and by which science and society interplay to create new knowledge.[28]

In the disability innovation ecosystem, diverse actors, including entrepreneurs, medical professionals, activists and policy advocates, support workers, technical product designers, and users (people with disabilities), collaborate to ideate, design, and produce. The result is something cutting-edge, more encompassing, and valuable to the users. In this process, the lines between producers and consumers blur, creating a symbiotic relationship where insights from lived experiences intersect with expertise.

> " You end up with a better solution if you design for the widest range of human experience. You'll have a really defensible great product that people will love."
>
> Pete Horsley, Remarkable Australia

This collaborative approach offers an array of strengths. For one, the innovations birthed from such synergy often exhibit a universality, catering to both users with disabilities and users without disabilities. Closed captioning, originally devised for the Deaf community, today serves a broader audience, making content accessible even in noise-polluted environments or non-native languages. Greg Bland of CSD New Venture Fund, who is himself deaf, shared that having a team made of deaf people in an innovation program positively impacted the work culture:

> " There was no negotiation. There was just synergy. People just started working, adding things, removing things other people made, and there was a very beautiful order to it, and it was much quicker. Our unique competitive advantage was the team cohesion and working style compared to hearing social norms and cultural dynamics. The ability of our organizations to respond in highly competitive markets is greatly enhanced by the fact that other organizations cannot access this competitive advantage."
>
> Greg Bland, CSD Social Venture Fund

The collaborative co-production approach also relies on the premise that people with disabilities are more likely to adjudge the potential for design to rectify significant barriers that they confront in daily life better than others, thus also being a better judge of the potential commercial significance of a particular product design or customer experience than other end-users. Thus, the process gives agency to the ultimate end-user at the start, not the end, of the design process, and produces products capable of greater market penetration as a result.

However, it has its challenges. True co-production —including rigorous user-testing— demands time, patience, and a genuine willingness to understand and adapt. Businesses may view this as a time-consuming endeavor with no immediate return on investment, which underscores a potential area

for funding. These ecosystem-building organizations with enhanced co-production expertise can help more actors adopt these practices by facilitating workshops and knowledge sharing. Their close proximity to startups led by underrepresented founders co-designing with the disability community and solving for a myriad of very hard problems can improve the adoption of co-production practices within product development.

> " The assistive technology user traditionally has very little say on what product they get. We are focused on developing AT product companies that listen to the voice of users. We are shifting the market with the idea that persons with disabilities are not just users, they are customers, and they have the need for a great product experience."
>
> Bernard Chiira, Innovate Now

The effects of adopting these practices are not limited to the business realm but to society at large. Co-production is not only about products but also about knowledge and how we think about and define the human experience, affecting governance and social policy. Jasanoff, a prominent academic within the field who advocates for enhancing sustainability, inclusivity and democracy, says:

> " Increasingly the realities of human experience emerge as the joint achievements of scientific, technical, and social enterprise: science and society are, in a word, co-produced, each underwriting each other's existence."[29]
>
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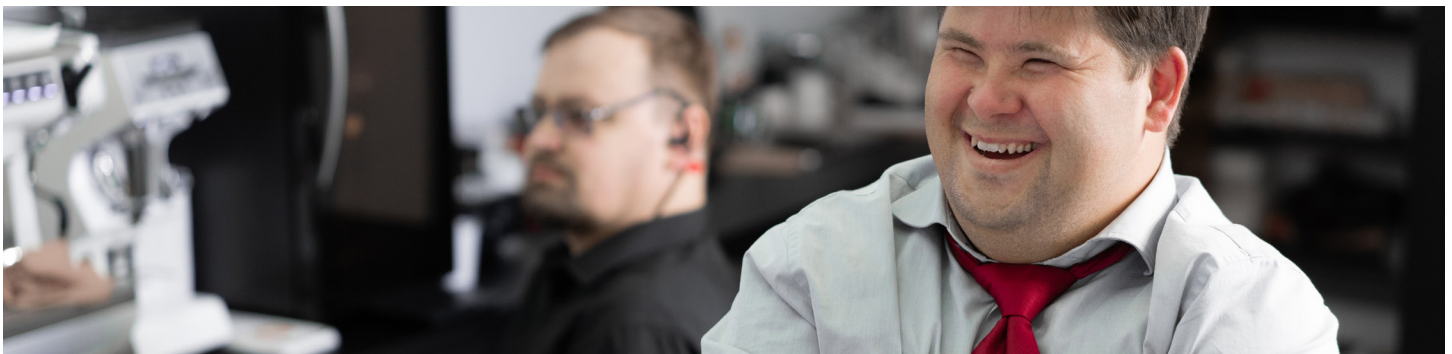
Meaningful Participation: Beyond Representation

Meaningful participation is more than representation. While the latter ensures presence, the former guarantees voice and influence. For people with disabilities, it is paramount that their collective insights, stemming from lived experiences, are not just heard but integrated into the decision-making fabric.

The strengths of ensuring a deep level of involvement in every step of product development are multifold. Firstly, it validates and empowers the community, reinforcing the disability community's pivotal role in shaping the solutions meant for them, as the inclusion mantra famously goes "Nothing About Us Without Us" and invariably links to good product theory, which prioritizes building for the user and not for the maker.

> " We need to be solving a real problem with a real solution. Both those components are important. Sometimes, problems are imagined, and that becomes very obvious. For example, sign language gloves. The idea of sign language gloves has been in existence since the 1980s. Every year, a well meaning university student wins a design award. But it's not a meaningful problem, nor a meaningful solution. Because we talked to the actual potential users of sign language gloves and they hate it. These types of products are called Disability Dongles, a term coined by Liz Jackson."
>
> Varun Chandak, Access to Success (ATS Labs)

Disability Dongles

Liz Jackson coined the term as a founding member of The Disabled List, an advocacy collective that engages with disability as a critical design practice. "I created the term 'Disability Dongle' in 2019 to draw attention to the phenomenon of design and engineering students and practitioners who prototype 'innovative' disability solutions. The definition satirizes an outcome in which designs or technologies 'for' people with disabilities garner mainstream attention and accolades despite valid concerns people with disabilities have about them."[30]

Meaningful participation ensures meaningful solutions to meaningful problems. To ensure this, we heard from many of the interviewed organizations that they would not work with entrepreneurs who do not have lived the experience first-hand or, alternatively, show to understand and respect the user. Many have spent years building relationships with community groups and nonprofits with the trust and connections to the disability community. A common theme across the successful entrepreneurs showcased from the portfolios of these accelerators was entrepreneurs who have lived experience of the problem. This is often the entrepreneur themselves or a loved one.

> " Some local friends had the same situation and we started a school for kids with autism. Eventually we got frustrated with the school's lack of collecting data on outcomes. One thing led to another and I started Animated Speech because my son's biggest issues were speech, language and communication. We then partnered and merged with TeachTown. During that time I started to attend hackathons and become exposed to and excited about accelerators."
>
> Dan Feshbach, Multiple

In regard to building the practices of meaningful participation, there are potential avenues for funding and focus. Funding educational programs to sensitize businesses, designers, and innovators about the intrinsic value of meaningful participation can catalyze a material shift in perspective. Additionally, investors can include in their due diligence criteria to investigate how multiple perspectives and experiences have been meaningfully engaged in developing the solution. Organizations can establish their own definition of meaningful participation and set it as a policy. Finally, funders of ecosystem enablers can focus on organizations that focus on outcomes rather than outputs and support them to fund the impact measurement component of their work.

Thinking Beyond Inclusion: Led by and With, Not for and To

This report aims to highlight the significant opportunity for disability innovation, which we consider as including assistive technology and accessibility solutions, as well as practices such as inclusive and universal design. Similar to the words we use, we are still limited in how we perceive the world. This report aims to bring attention to what is working and how we can overcome current barriers within the system.

However, there is an additional dimension to consider: To what extent are we generally limited in how we think about startup resourcing and ecosystem building? Communities of People with Disabilities worldwide, whether Deaf, Blind, or Neurodiverse, have been advocating for reform not just in what actions are taken but how they are taken.

> " Personally, I would go much further than inclusion. People talk about inclusion as being invited to the table. I have an issue with this because usually it's still about someone inviting someone else to the table, and usually it's the powerful inviting the less powerful. For me, there is a more potent and powerful approach, where change is led by those living with an impairment, transitioning from a for-and-to mentality to a with-and-by mentality."
>
> Minnie Baragwanath, Global Centre of Possibility

Many of the accelerators we spoke to highlighted how important it was for them to build a team of people who understand disability and marginalization – ensuring that decision-makers within the ecosystem of disability innovation have lived experience, and/or maintain deep networks throughout the disability community, given the sheer breadth and heterogeneity of disability itself.

As such, this is an invitation to think bigger and question not just what we do as an ecosystem but how we do it and where there may be an opportunity to lean back and allow those with lived experience and an alternative way of engaging with the world to lead the way and show us what is possible.

Theme 2: Activating Agency of People With Disabilities

Amid the diverse global landscape of the disability innovation ecosystem, one principle resonates with undeniable relevance: agency. This deep-seated sense of autonomy, ownership, and empowerment for people with disabilities emerges as a lynchpin in the narrative of progress and inclusivity. Our research indicates that agency is key to empowerment.

Critically, there exist two levers of agency, consumer power and entrepreneur power.

Consumer Power

People with disabilities are consumers, and their collective power can sway markets, dictate trends, and steer the trajectory of businesses. Every purchase, feedback, or product endorsement carries a message, underscoring the needs and preferences of this demographic. In this arena, businesses cannot afford to remain complacent.
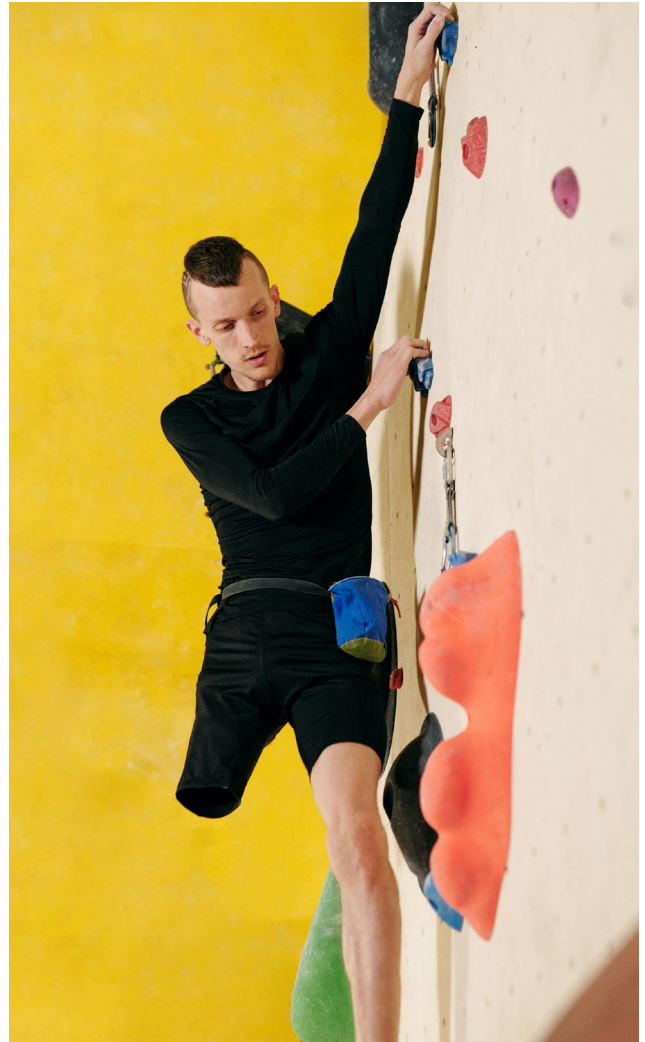
There are numerous strengths associated with this consumer-driven empowerment. Firstly, it grants the individual a clear avenue to communicate their needs through their chosen products and services. This is a critical way to move the needle on the perception of people with disabilities as users.

> " Globally, we need policies to catalyze assistive technology innovation success and scale start-up ecosystem performance. Thought leaders need to collaborate to define and execute robust programs that will drive lasting change in the lives of people with disabilities and create inclusive future. One good example of this is Australia, where they have changed the dynamics significantly by giving the funds directly to the user and allowing them to decide what they spend their assistive technology budget on."
>
> Prateek Madhav, AssisTech Foundation (ATF)

However, leveraging consumer power is not without challenges. For people with disabilities, the sheer act of navigating the consumer landscape can be daunting. One accelerator in India is solving this by creating a platform to bring together services and products for various communities:

> " ATF is building a digital platform named 'Adidvara,' a Sanskrit word that means 'a door to infinity.' The platform focuses on three impact themes (3Ls) for people with disabilities: learning (education), livelihood (employment), and living (independent living and many other areas like travel, recreation etc)."
>
> Prateek Madhav, AssisTech Foundation (ATF)

Across the interviews there was mention of bringing awareness to businesses about who their consumers are, as they may have customers who have disabilities that they are unaware of.

> " Businesses are often not conscious of the presence of deaf and hard of hearing individuals among their product and service consumers. Their hidden disabilities contribute to this unawareness."
>
> Aarti Sahgal, Synergies Work

Consumers with cognitive disabilities are also often profoundly overlooked.

> " I am incredibly passionate about the Autism and Neurodivergent Communities and outspoken in how underserved they are. That's what brought me here and that's what drives me every day. This is such a large, diverse, and relatively untapped community in terms of employment and overlooked in terms of supports and services. It is such a large community with differing needs. I believe that innovation and awareness can drive the full potential of people on the spectrum and with other intellectual and developmental disabilities."
>
> Amy Helgeson, Multiple

Entrepreneur Power

As we saw earlier in the report, people with disabilities have historically and increasingly been prolific entrepreneurs and innovators, crafting solutions born from their experiences and perspectives. The strengths inherent in this entrepreneurial shift are manifold. People with disabilities or those close to the lived experience of disability are uniquely positioned to tailor solutions with an intrinsic understanding of barriers to be removed. However, these entrepreneurs often face systemic educational gaps and are excluded from conventional opportunities to join the innovation economy.

> " In our program addressing social inequities and access to entrepreneurship education for deaf communities, we provide access to entrepreneurship education in a way that is accessible and intuitive to deaf communities and their native languages."
>
> Greg Bland, CSD Social Venture Fund

In some instances, it was shared the entrepreneur does not need help navigating their disability but instead of getting access to the critical business skills that they were not provided in mainstream options:

> " She didn't come to us because she needed support navigating her disability, instead she came for the formal education in business which she had never had exposure to before. She went on to sell her business for close to US $10million. She credits a lot of the skills she learnt at 2Gether, to being able to do that. She's now building her second company and still uses a lot of those same skills and the network that she's been able to gain, which has been really great. Finally, she's now on the board of directors of 2Gether."
>
> Diego Mariscal, 2Gether International

Other accelerators that choose to focus on a specific disability and make that central to their value proposition are standing apart:

> " We're the only nonprofit focused on autism tech with the only autism-focused accelerator for startups with tech-enabled solutions for autistic and neurodivergent communities. We are building an ecosystem of like-minded, passionate people — startups and founders, investors, and mentors that believe in autism innovation... its power and its potential. When our founders are talking to mentors or investors within our hub and ecosystem, they are among others who are connected, knowledgeable, and passionate about autism."
>
> Amy Helgeson, Multiple

Ultimately, there is no "one size fits all" solution for supporting entrepreneurs with disabilities because people with disabilities have such a diverse range of lived experiences. These differences are what make this talent pool so vibrant. Individuals with disabilities often approach work and innovation from unique perspectives due to their distinct ways of interacting with the world. For organizations that support entrepreneurs with disabilities, it is essential to acknowledge that while some resources and accommodations can support multiple groups, the type of support required varies according to the specific disability.

For example, Cambridge Professor and global autism specialist Simon Baron-Cohen, has presented substantial data suggesting that autism is closely linked to a specific kind of pattern recognition, he terms "systemizing mechanism" — the ability to discern and manipulate "if and then" causal patterns. This pattern recognition plays a significant role not only in today's human inventiveness but also throughout the entire history of human evolution.[31] Some of the great intellectual mavericks, he highlights in his research who were on the spectrum include Carl Linneas, who created the naming taxonomy we still use today for the natural world,[32] and Thomas Edison, who is best known for inventing the lightbulb, and motion picture camera and substantially improving the telegraph and telephone.[33]

In addition to specialization —an option not available in some nascent ecosystems— another theme that emerged as a significant value-add for many entrepreneurs with disabilities was the focus on adapting and evolving the accelerator's offerings. Many have iterated and improved over the years to deliver programming that yields meaningful outcomes for entrepreneurs.

> " What makes me happiest is real data, information, and feedback. We create our program based on what [the] founders tell us. We ask for feedback for every single step. Our feedback form was submitted more than 140 times last year alone [by the multiple participants from each startup attending our sessions]. So we collect a lot of data."
>
> Varun Chandak, Access to Success (ATS Labs)

Finally, the last key theme in delivering value to entrepreneurs and unlocking their potential was building bridges and social capital for entrepreneurs:

> " The core of Synergies Work is to be the bridge or the catalyst between the business community and the disability community. The value of social capital cannot be underestimated."
>
> Aarti Sahgal, Synergies Work

Ensuring a virtuous cycle of established entrepreneurs mentoring the next generation is a common and crucial theme:

> " We're very intentional about ensuring the people that we support are also returning value to the community as a whole."
>
> Diego Mariscal, 2Gether International

Theme 3: The Business Case of Disability Innovation

The moral case for inclusion and accessibility is becoming its business case as awareness and demand grow – and as these innovations continue to drive returns. Disability innovation is rapidly gaining ground as a new frontier of market opportunities where entrepreneurs are building viable, profitable, and scalable business models. This was made evident through recurring themes and patterns in the data.

> " Many investors still have an antiquated notion that companies with a social impact piece are charity cases. Our ecosystem here at Multiple is showing investors that social impact and revenue generation are not mutually exclusive, and investing in autism is not just a charity case. Many times, we also hear that investors perceive the autism market to be too small or too niche when, in reality, the market is large and growing, and the support systems that surround it include large verticals such as healthcare, edtech, and workforce development, to name a few. Part of our hope is that we can bring more awareness to this new way of thinking through our mission and ecosystem. Recently, we held an investor panel event where investors in our space gave updates on the market and reinforced the idea that companies can have social a impact alongside a revenue-generating solution."
>
> Amy Helgeson, Multiple

Scale: A Market Too Large to Overlook

The analysis underscored the sheer scale of the disabled demographic. With over a billion people with disabilities globally,[34] businesses and investors can no longer afford to neglect these users. Catering to this vast demographic is primarily about accessibility, inclusivity, and tapping into a burgeoning market. The innovations tailored for people with disabilities often find applications beyond, amplifying the market potential.

When discussing a startup within their portfolio, Bernard of Innovate Now shared:

> When you think about the future of mobility and climate action, it can easily be assumed that persons with disabilities in Africa are probably going to be the last to get on board with electric mobility or the last to contribute to responsible and resilient climate response. Far from it! In Kenya, since 2017, hundreds of wheelchair users have been using electric-powered wheelchairs built by Linccell Technology. The startup was founded by Lincoln Wamae and today is one of the leading electric mobility companies, putting persons with disabilities at the forefront of sustainable transportation and freedom of mobility in a country where the public transport infrastructure is largely inaccessible. The company today runs a manufacturing and repair business for personal electric mobility vehicles and specializes in building and repairing electric tricycles for persons with disabilities. Their work has created jobs, is enabling hundreds of wheelchair users to experience freedom of mobility, and reducing carbon emissions through recycling laptop batteries and other parts.

In recent years, there has been a broader acknowledgment that some disabilities can impact previously people without disabilities —including those with disabilities that can impact people who lived much of their lives without disabilities— including those disabilities that are episodic or, importantly, are acquired as people age.

> " Each of us as we age is going to have some form of disability. For example, our statistics in Australia are if you live over the age of 60, you will have some kind of disability in your older years. You'll live one eighth of your life with a disability."
>
> Pete Horsley, Remarkable Australia

But scale alone is not a panacea. While the numbers underscore potential, there is a wide range of needs within the demographic. Every disability has its unique facets, challenges, and narratives.

> " [I've had the opportunity to work hand in hand with people with cognitive] disabilities; they certainly need support, but it's just like I require support to get up the steps. They require an accommodation to process information and problem-solve a situation. So it's perhaps more extensive, but nonetheless, an accommodation that can be solved. Oftentimes they just lack adequate support and bandwidth, and really the [cognitive] disability community tends to be left behind."
>
> Diego Mariscal, 2Gether International

Impact Investment: Purpose and Returns

> " We're starting to move away from a conversation being about cost to investment."
>
> Minnie Baragwanath, Global Centre of Possibility

Investors are progressively acknowledging the vast potential inherent in disability-centered innovations. Our vision parallels the principles of impact investing, where the paramount objective remains the creation of an inclusive global community. In this pursuit, we aim to foster a world that not only embraces diversity, but also generates compelling returns in investment through the avenues of positive impact. This paradigm shift is happening globally both on a grassroots level driven by Philanthropists, Family Offices, and Impact Funds and on a policy level driven by activists and the increasing prominence of environmental, social, and governance (ESG) requirements in investment.

Strengths in this avenue are manifold. For businesses, impact investment offers an infusion of capital to drive their innovations. It is an opportunity for investors to diversify their portfolios, blending purpose with profitability.

Yet, challenges abound. The disability innovation sector, despite its potential, is still nascent in many parts of the world. Investors may grapple with unfamiliar terrain, unsure of the metrics to evaluate success, or the benchmarks to set.

> " This product for people with Cerebral Palsy is a game changer and would have a huge impact on the CP community. Users are obsessed with this product, but the founders are struggling to get enough funding to get through the FDA approval process... you're like, 'Wait, just fund the technology!' There should be other funding mechanisms so that everyone who sees this and says, 'Oh my God, this would 100% change my quality of life,' can have it without the startup having to convince an investor that CP is a big enough market."
>
> Molly Levitt, Remarkable US

Disability innovation, in the business lexicon, is shedding its erstwhile image as a mere "CSR initiative" or "ethical endeavor." It is emerging as a robust business model, underpinned by scale potential and increasing case studies within impact investment. A mindset shift is required:

> " We need to figure out how to employ disabled people so they have equitable salaries and healthcare. We need to get rid of the Medicaid issue where you lose your Medicaid if you get a job. For many, employer-sponsored healthcare won't be sufficient for their level of care and the salary does not make up the difference. This means disabled people have to choose between being included in society through work and purchasing power or being able to afford their cost of care. People with disabilities collectively have a purchasing power larger than China and we need to unlock this."
>
> Molly Levitt, Remarkable US

The patterns and themes derived from our analysis illuminate a paradigm shift. The realm of innovation is taking a decisive stride towards inclusivity. This trajectory emphasizes inclusive design, embracing a vast spectrum of human experiences and perspectives. The potential within the impact sphere is undeniably vast, encompassing various dimensions. Our world inherently thrives on diversity, and our endeavors, including their returns of investments, are solely hindered by societal barriers. It is time to dismantle these barriers and pave the way for them to flourish harmoniously.

What Does the Ecosystem Need

This is a call to action for funders of ecosystem development, support organizations, and startups. Here are the ways you can make a change:

Mindset Shift
- Start seeing disability as a source of human progress and invention.
- Start backing the decision-making power of people with disabilities.
- Start funding the development of the disability innovation entrepreneurship ecosystem.
- Start investing in disability innovation businesses.

Supporting the Supporters — What Disability Entrepreneurial Support Organizations Need
- Ask disability innovators what it is they need to be successful and fund that instead of the program you have designed - they are the experts.
- Support the autonomy of supporters or ESOs by helping them incorporate as independent entities.
- Provide catalytic flexible multi-year funding for ESOs to build out their team, retain team members, build institutional knowledge, and enhance their value proposition for entrepreneurs.
- Insist on evidence of disability and other diversity representation and meaningful participation within ESO teams and inclusion of principles of inclusive and universal design and accessibility in the programmatic design.
- Provide research and development funding for ESOs to pilot innovative program design and validate design changes and to strengthen their in-house systems for testing, measuring, and evaluating product design, customer and user experience inclusion, and accessibility.
- Provide funding for ESOs to measure and report impact data to access to the impact investors market and wider access to non-dilutive grant capital to strengthen the scale of their impact.
- See ecosystem builders such as accelerators as research and development entities in their own right.

Networks and Collaborations
- Support networks and convenings that enable ecosystem players to share cross-sector, disabilities, and regional learnings.
- Connect ecosystem players with communities, mentors, and investors they otherwise would not have access, to advocate for the potential of disability innovation.
- Critical relationships with research and development institutes as well as academic institutions are essential to incubate and provide long-term funding for building out novel or capital intensive solutions including software and/or hardware leveraging new technologies, which are an essential part of the disability innovation ecosystem.

Policy
- Progressive policy that moves the needle on consumer purchasing power, financial inclusion, and self-employment for people with disabilities is an essential component of an enabling environment. The user needs to be in a decision-making role and show preference with purchase choices and full financial independence.
- The ecosystem actors need to be consulted in public sector roadmaps and budgeting exercises. Governments cannot continue to overlook the potentially transformative impact of innovation within this space, and its corresponding reduction in overall health care costs.
- The language we use and how we refer to people with disabilities are essential to respect and empower this community as leaders and innovators.
- Change needs to begin early, and unless the systemic educational challenges are addressed we will continue to see a sizable amount of entrepreneur and employee talent go to waste by educational systems that do not know how to uncover their potential and meet their learning needs.

Financial Capital
- Improve inflows of investment capital to pre-seed, seed, and growth stage entrepreneurs solving accessibility, assistive technology, and disability innovation.
- Provide greater continuity of philanthropic capital to ESOs to sustain and scale the disability sector entrepreneurial ecosystem.

Unleashing the Potential of the Disability Innovation Ecosystem

The disability innovation ecosystem mirrors successful early-stage models that have yielded increasing social and financial investments, drawing interest from startup founders, policymakers, investors, and accelerators.

Our conversations with the ten participating Entrepreneur Support Organizations (ESOs) confirm their value in cultivating a solid pipeline of scalable ventures that attract investors. Using an evidence-based approach (see Methodology Section, Abaca Tool), Village Capital's evaluation — leveraging its experience and track record to evaluate the strength of developing entrepreneurial ecosystems — reveals that disability tech ecosystem shares similar strategic building blocks to other thriving innovation ecosystems worldwide. These features include strong leadership teams with proximity to lived experience, a range of valuable services and programs, systematic startup selection processes, scalable operational and financial models, and features of impact measurement. This alignment in approach bodes well for the future of Entrepreneurial Support Organizations (ESOs) and scalable impact-driven startups in the disability sector, emphasizing the pivotal role ESOs play in shaping the sector's growth.

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