Persons With Disabilities (PWD) Opportunity Report 2025:

Unlocking the potential for inclusive employment and innovative technology solutions for PWDs in Malaysia

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Executive
Summary

Despite a growing number of digital advancements, persons with disabilities (PWDs) across ASEAN, including Malaysia, continue to face systemic barriers to access, inclusion, and meaningful economic participation. While regional policies and national commitments have made progress, the gap between intention and implementation remains wide. PWDs are significantly underrepresented in the formal workforce, and digital innovation has yet to be fully harnessed to close this divide.

This opportunity report seeks to reframe disability inclusion as both a social imperative and an economic opportunity. Research suggests that greater inclusion of PWDs in the labour market could raise regional GDP by 1–7%. In Malaysia, where digital transformation is accelerating and as the country chairs ASEAN in 2025, there is a critical window to lead by example through embedding inclusion at the heart of innovation.

Drawing from in-depth engagements in Malaysia and regional insights across Southeast Asia, this report identifies the most pressing challenges faced by PWDs in employment and digital access. It surfaces key pain points, user needs, and market-ready areas where inclusive digital solutions and assistive technologies can create tangible impact.

By highlighting both gaps and emerging solutions, the report offers a pathway for government, industry, and civil society to co-develop scalable interventions. These include inclusive hiring platforms, adaptive digital tools, workplace accessibility innovations, and ecosystem enablers to support widespread adoption.

Ultimately, this report positions inclusive technology not just as a tool, but as a catalyst for transforming systems, expanding workforce participation, and unlocking untapped human capital across the region.

Context and Current Landscape

Introduction and Purpose

Malaysia's journey toward an inclusive digital economy must centre the lived realities and aspirations of PWDs. As digital transformation accelerates across Southeast Asia, the continued exclusion of PWDs from innovation ecosystems and economic opportunities highlights a critical gap. This report seeks to reframe disability not as a peripheral issue, but as a key design challenge that can lead to more equitable and resilient systems. This calls for inclusive digitalisation and innovation that expands it calls for inclusive innovation that expands access, participation, and agency for PWDs in both the workforce and the broader digital economy.

With Malaysia chairing ASEAN in 2025, the country is in a strong position to lead by example. This moment offers a strategic opportunity to align national actions with regional goals by embedding disability inclusion into ASEAN's digital development agenda. The purpose of this report is to identify existing barriers, highlight scalable and inclusive solutions, and promote cross-sector collaboration. Grounded in multi-stakeholder engagement and lived experience, it outlines practical pathways for systems change and a more inclusive digital future for all.

Scope and Definitions

This report focuses on identifying opportunities to enhance employment and economic empowerment for PWDs in Malaysia through digital and technological solutions. It draws on stakeholder engagements, ecosystem mapping, and case studies to spotlight promising practices, innovation gaps, and pathways for collaboration.

An initiative that has been conceptualised by MDEC to incubate and scale inclusive tech solutions for PWDs is called TechUpaya. Briefly, TechUpaya will provide the suitable platform or environment for innovative tech solutions to be ideated and developed to address specific challenges and needs of PWD communities. These solutions will be incubated according to its maturity level to eventually be developed as proof of concepts (POCs) to eventually be commercialised or scaled at large. The other element of TechUpaya would be to facilitate digital skills training for eventual job placement in the industry. This aligns very well with the Government's highlighted target in the recent RMK13 document for public services to employ 1% PWD by 2030.

While TechUpaya ultimately aims to be inclusive of all disability types, this first phase of work adopts a targeted approach, by prioritising select categories of disabilities in the pilot phase to ensure depth, focus, and effective implementation. The first phase prioritises physical and visual impairments. As such, some of the featured solutions or insights may not fully capture the needs of all disability groups. This focus is intentional, with the goal of developing scalable models that can be adapted and expanded in future iterations.

The methodology for the proposed TechUpaya concept can be found in Appendix B.

This report also adopts internationally and nationally recognised definitions of disability, which are:
· United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)
· Malaysia's Persons with Disabilities Act 2008 (Act 685)

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD):

Defines PWDs as "individuals with long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others."[1]

Malaysia's Persons with Disabilities Act 2008 (Act 685):

Defines PWDs in the same way as the UNCRPD. In addition, the Department of Social Welfare of Malaysia has seven categories of disabilities, namely: Physical, Visual, Hearing, Speech, Learning, Mental, and Multiple.[3] To access protections and services under the Act, individuals must be registered with the Department of Social Welfare and hold a valid Persons with Disabilities (OKU) Card.

Landscape of Digital Inclusion and Assistive Technology in ASEAN and Malaysia

Demographics and Economic Impact

Asia and the Pacific is home to more than 700 million PWDs, accounting for approximately 15% of the region's population.[4] In Southeast Asia, the data is often fragmented, but national estimates suggest that PWDs comprise between 7% and 15% of each ASEAN member state's population.

In Malaysia, as of end 2023, 736,607 individuals were officially registered as PWDs with the Department of Social Welfare (JKM), representing 2.2% of the population.[5] However, registration is voluntary, and the National Health and Morbidity Survey (NHMS) 2023 estimates that the prevalence of overall disability was much higher at 8.2%, indicating possible registration barriers and underreporting.[6]

Malaysia is also experiencing a demographic shift towards an ageing population, with a large proportion of the population expected to enter older age in the coming decades.[7] People are more likely to acquire disabilities as they age, which also reinforces the urgency of building an inclusive digital ecosystem not just for current PWDs but for the broader population who may face impairments later in life.

Beyond social equity, disability inclusion is a powerful economic multiplier. According to the United Nations, including PWDs in the labour market can benefit economies up to 7% of their GDP.[8] This uplift is driven by enhanced labour participation, increased consumer spending, and reduced long-term reliance on social protection systems. These benefits remain largely unrealised however as there is a persistent gap between policy intentions and practical implementation, limiting ASEAN's ability to harness the full economic potential of a more inclusive and diverse workforce.

As Malaysia moves toward becoming a digitally driven nation, embedding inclusion at the core of its digital economy will ensure that progress is not only technologically advanced but also socially and economically sustainable.

Market Opportunity of Assistive Technologies

The global demand for assistive technologies is on a significant upward trajectory, driven by demographic shifts and an increasing emphasis on inclusivity. The World Health Organization (WHO) estimates that about 16% of the global population or 1.3 billion people have significant disabilities.[9]

In response to this demand, the assistive technology market is experiencing robust growth. The global assistive technology market is estimated to be valued at USD 25.3 billion in 2025 and is expected to reach USD 35.7 billion in 2032, with an estimated compound annual growth rate (CAGR) of 5%.[10] According to WHO, over 2.5 billion people currently require assistive products, with this figure expected to rise to 3.5 billion by 2050.[11]

In addition to the above, the Valuable 500, a global business partnership of 500 companies, along with the World Economic Forum, found that the spending power of PWDs along with their friends and family represents USD 13 trillion a year.[12] This figure represents a significant opportunity for businesses and innovators to develop products and services that cater to this market segment.

For Malaysia, embracing the development and implementation of assistive technologies presents an opportunity to not only address the needs of PWDs but also to stimulate economic growth. By investing in inclusive design and accessibility, Malaysia can position itself as a leader in the assistive technology sector, fostering innovation and ensuring that all citizens have the tools they need to participate fully in the digital economy.

Participation of Persons with Disabilities in the Digital Economy

Participation in the digital economy offers transformative potential for PWDs, enabling new forms of work, learning, entrepreneurship, and social inclusion. However, across the world, PWDs remain significantly underrepresented in digital spaces due to persistent accessibility, affordability, and skills-related barriers.

Globally, digital inclusion remains uneven. PWDs are less likely to own digital devices, use the internet, or possess the digital skills required to benefit from digital platforms and services. In OECD countries, PWDs are nearly three times more likely to lack internet access or a computer at home compared to those without disabilities. Even when online, PWDs are less likely to use e-government, banking, and employment services. The International Labour Organization (ILO) notes that this digital gap contributes to exclusion from fast-growing digital jobs and the broader digital economy.[13]

In the Asia-Pacific region, where over 470 million working-age PWDs reside, there are large variations in digital connectivity and accessibility.[14] Many PWDs lack access to accessible devices and assistive technology and are underrepresented in national digital strategies due to the absence of quality data on digital disability inclusion.[15] ASEAN countries also tend to discuss the digital divide and promotion of inclusion among women and those living in rural areas first, overlooking PWDs.[16] As a result, PWDs in the region have a high chance of being excluded from digital skills programmes and online employment platforms.

In Malaysia, data on digital inclusion for PWDs is limited but telling. National mobile phone and internet penetration is high, and usage is quite prevalent among those with disabilities, but they face persistent challenges in accessing technology effectively. For example, during the COVID-19 pandemic, more than 66% of PWDs in Malaysia reported increased use of the internet, with over 55% saying they had become completely reliant on their devices as a lifeline for communication, learning, and access to services.[17] At the same time, 23% experienced a worsening or total loss of internet access, revealing persistent digital exclusion even as reliance on technology surged.

Through engagements, it was found that PWDs still face usability issues with government websites and digital services, and few assistive technologies are available at scale in the local market. Furthermore, mainstream digital skilling programmes rarely include disability-inclusive approaches or accommodations. These trends make clear that ICT is no longer a convenience but a lifeline for PWDs, shaping their ability to participate meaningfully in work, education, and daily life in an increasingly digital society. However, they face persistent challenges in making full use of these opportunities.

As Malaysia accelerates its shift toward a digitally driven economy, closing the digital participation gap for PWDs is both an urgent and strategic priority. Doing so will not only enhance inclusion and equity, but also expand the nation's digital talent pool, stimulate innovation, and strengthen long-term economic resilience.

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PART B:
Barriers and Insights

Key Challenges in ASEAN and Malaysia

While the region and Malaysia have made notable strides in disability inclusion, PWDs continue to face systemic barriers that limit their ability to access, retain, and advance in meaningful employment. The root of these challenges lies in a combination of structural, social, and economic factors that intersect across policy, infrastructure, corporate culture, and technological access. This section outlines five interlinked challenges that must be addressed to unlock employment equity for PWDs.

Technology and Digital Divide

While technology can be a powerful enabler, significant disparities in access persist. This divide not only restricts job seeking capabilities but also prevents many PWDs from participating in the knowledge-based and innovation-driven economy.

Limited Adoption and Investment for Assistive Technology	Despite the availability of solutions like screen readers, ergonomic tools, and voice-controlled software, there is limited adoption due to lack of awareness and limited accessibility, financial constraints, and scarcity of locally produced assistive technologies in the region.[18]
Lack of Trained Professionals	The region faces a shortage of professionals trained in assistive technology services, including assessment, fitting and training.[19] This gap limits the effective deployment and use of these technologies.
Non-Accessible Digital Platforms and Websites	Many digital platforms that are essential to job seeking, such as job portals, government websites, corporate intranets and financial services are not built with universal design principles, making navigation impossible for visually impaired or neurodivergent users. Common features on websites, such as CAPTCHA verifications, QR code requirements, and touchscreen interfaces, also lack accommodations for individuals with visual impairments or other disabilities. For example, UNESCAP estimated that only 40% of government websites in the Asia-Pacific region in 2018 are accessible.[20] Later data published in 2022 suggests a continuation of uneven implementation of accessibility features in government websites observed in 11 selected countries in Asia and the Pacific.[21]

Accessibility as a Gateway to Digital Participation

While digital accessibility is often seen as a standalone concern, physical accessibility remains a critical and often overlooked enabler of digital inclusion for PWDs. In many cases, physical environments serve as the gateway to digital opportunity, whether

through accessing devices, participating in training, attending interviews, or benefiting from digital public services. When buildings, transport, and public infrastructure are inaccessible, PWDs are effectively locked out of the digital economy, regardless of how inclusive online platforms may be. To bridge the digital divide, physical and digital accessibility must be addressed in tandem. Without inclusive infrastructure, even the most advanced digital solutions risk leaving PWDs behind.

Physical Barriers to Digital Touchpoints	In many ASEAN countries, there are large substantial areas that are difficult for persons of disabilities to navigate because of insufficient ramps and handrails or uneven streets and pavements.[22] These environmental barriers make it difficult to reach coworking hubs, internet centres, or training facilities where digital engagement begins.
Transport Gaps Affecting Access to Digital Services	Limited transportation access to PWDs is prevalent in Southeast Asia.[23] It was also found that public transport provided worse accessibility compared to cars and motorbikes in cities such as Bangkok and Manila.[24] A lack of accessible and affordable transport options limits access to job interviews, upskilling programmes and digital services that still require in-person components such as registration, device distribution, or biometric verification.
Inaccessible Hiring and Onboarding Processes	Even digital-first employers often require physical presence for onboarding or assessment. Candidates may discover too late that venues are not wheelchair-accessible or do not accommodate sensory or cognitive needs, which undermine participation in otherwise tech-enabled roles.

Societal Attitudes and Stigma

Deep rooted cultural perceptions across ASEAN countries continue to fuel discrimination against PWDs, limiting their employment prospects and eroding workplace inclusion. Even when well intentioned, tokenistic hiring practices may lead to superficial inclusion without genuine engagement or support, ultimately resulting in low retention. Desktop research and engagement with stakeholders reveal the following challenges:

Stereotypes of Dependence	Through engagements, it was found that many employers perceive PWDs as burdensome or less productive, despite ample evidence to the contrary, and less qualified abled candidates are often hired instead. Similarly, entrepreneurs with disabilities were found to have difficulties in accessing subsidised loans despite their eligibility, due to existing prejudice.[25]
Low Expectations	PWDs are often funnelled into low-paying or informal work, with limited consideration for their aspirations or qualifications. This trend is evident in various parts of the Asia-Pacific region, where PWDs are more likely to engage in informal work and face higher rates of unemployment and economic inactivity compared to persons without disabilities.[26] In Malaysia, studies have shown that superiors have low expectations for the job performance of PWDs, assigning them fewer tasks due to perceived lower productivity.[27]
Invisibility in the Workforce	The lack of representation of PWDs in professional or leadership roles reinforces the idea that they are unsuitable for such positions.

HR Policies and Workplace Barriers

Human resource policies and corporate culture often present the final hurdle for PWDs who have secured employment. Employers are often unsure how to integrate PWDs without disrupting operations. This results in hesitance and missed opportunities to create a diverse and resilient workforce.

Rigid Job Descriptions	Employers may be unwilling to adapt job roles or performance assessments to match PWDs' strengths and limitations. A study in Malaysia identified that the nature of certain jobs is often cited as a barrier, with employers perceiving some roles as unsuitable for PWDs without considering reasonable accommodations.[28]
Inadequate Onboarding and Mentorship	Few companies provide tailored onboarding, mental health support, or ongoing training for PWD hires. The lack of structured support systems can hinder PWDs' ability to adapt and thrive in new work environments.
Lack of Career Advancement Pathways	Through engagements, it was found that many PWDs face career stagnation due to limited upskilling programs and biased performance evaluations. The absence of clear progression routes and professional development opportunities contributes to low retention rates among PWD employees.
Inconsistent Post-Placement Support	Interviews with employment placement ventures like ENOKU in Malaysia revealed that most companies do not track or support PWD employees beyond the first few months of employment.

Policy Implementation Gaps

Despite existing national and regional commitments to disability rights such as the UNCRPD, ASEAN's Enabling Masterplan 2025, and domestic disability legislation, many policies remain under implemented or poorly enforced. These shortcomings undermine the intended impact of inclusion frameworks and prevent PWDs from accessing consistent pathways into formal employment. Key issues include:

Insufficient Enforcement	The effective implementation of disability laws requires strong enforcement mechanisms, high-level political commitment, adequate funding and targeted stakeholder training.[29] In Malaysia, despite there being a national law, engagements with organisations and individuals reveal that there is insufficient enforcement.
Quota Compliance Weakness	It was found by the CRPD Committee that the implementation and effectiveness of quotas requiring a minimum percentage of employees in public or private sector to be persons with disabilities often vary significantly or are underenforced.[30] In Malaysia, for instance, there is a target of employing 1% of civil service as PWDs by 2030. As of 2023, Malaysia has to fulfil 0.3% of this target.[31]
Insufficient Budget Allocations	National and local disability action plans are frequently underfunded, hampering the execution of support programs such as job matching, skills development, or workplace accommodations.

Voices from the Ground

This section amplifies the lived experiences of PWDs, caregivers, and employers in Malaysia. Drawn from direct engagement sessions with PWD communities, NGOs, and employers, these insights illustrate real world barriers and reveal opportunity areas for inclusive innovation and systems change.

Validated Employment Challenge Statements

From our stakeholder dialogues, four recurring systemic challenges were identified. These challenge statements serve as design prompts for future interventions, policy shifts, and tech enabled solutions.

Challenge 1: Visual-First Recruitment Tools Exclude the Blind	
Who is affected	Blind and visually impaired jobseekers
Root cause	Job portals and application systems rely heavily on visual navigation; many are incompatible with screen readers
Impact	Exclusion from recruitment pipelines, loss of confidence
What's missing	Voice navigable platforms, WCAG compliant interfaces, user testing by blind users

Challenge 2: Built Environments and Transport Remain Inaccessible

Who is affected	Individuals with mobility impairments, especially in rural/peri-urban areas
Root cause	Lack of universal design in public infrastructure and transit
Impact	Geographic exclusion, dependency on caregivers
What's missing	Accessibility certification for buildings, incentives to retrofit, support for remote work

Challenge 3: Neurodivergent Talent Underserved by Traditional Work Norms

Who is affected	Persons with attention deficit hyperactivity disorder (ADHD), autism spectrum conditions, anxiety disorders
Root cause	Sensory overloaded environments, rigid scheduling, verbal communication dependence
Impact	Job avoidance, burnout, high attrition
What's missing	Flexible work arrangements, calm workspaces, neuroinclusive practices

Challenge 4: Caregivers Are Left Out of Digital Employment Ecosystems

Who is affected	Caregivers supporting PWDs, particularly with high support needs
Root cause	Platforms are not designed for shared navigation or proxy access
Impact	Increased stress, lost job opportunities, system friction
What's missing	Caregiver logins, co-navigation features, UX designs that account for caregiver roles

Human-Centred Personas Reflecting Lived Realities

To ground this report in authentic lived experiences, we draw on voices from all sides of the employment ecosystem: jobseekers with disabilities, caregivers and employers. The following personas reflect various stages of employment readiness and organisational capability. They are based on aggregated insights from interviews, transcripts, and community engagements across Malaysia.

Each persona includes demographic details, lived experiences, pain points, aspirations, support needed, and preferred modes of engagement. These are not merely representations but can be taken as strategic tools to humanise employment challenges and align solutions with people, not just policies.

Persona 1

Disability isn't the problem, it's the way systems ignore how we interact with the world."

ADAM, 29, Male, Klang Valley

Born Blind, Aspiring Accessibility Consultant

Adam was born blind and navigated the public school system using assistive technologies and family support. He holds a diploma in administration and is highly proficient with screen readers. He dreams of a career in accessibility consulting and desires independence, although he often relies on his mother for navigation.

Jobseekers with Disabilities

PAIN POINTS 😟

- Inaccessible job application portals and websites
- Employers request printed resumes, showing poor digital inclusivity
- Public transport is unreliable; Grab drivers often cancel rides
- Interviews feel performative and lack meaningful engagement
- Most training programs overlook blindness-specific needs

MOTIVATIONS 🔥

- Normalise accessibility audits in companies
- Build a career that shapes inclusive design policy
- Gain financial independence to support his family

BEHAVIOURS 🤳

- Uses JAWS/NVDA across devices
- Participates in forums on accessibility tech
- Records inaccessible experiences as voice notes

SUPPORT NEEDED 👏

- Inclusive job platforms with real human facilitation
- Remote setups with screen-reader-friendly tools
- Mentorship from blind professionals
- Trained ride-hailing drivers with adapted vehicles

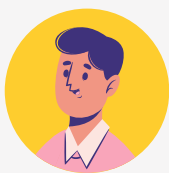### DIGITAL PROFICIENCY 📝

- Very high

PREFERRED CHANNELS 🎛️

- Email, WhatsApp (voice notes), screen-reader-friendly Zoom

Persona 2

It is disappointing to get an interview call, only to arrive and realise the office has three steps at the entrance and no ramp. I have the will to work, but the building itself stops me before I can even speak to the manager."

Jobseekers with Disabilities

HAFIZ, 41, Male, Gombak

Acquired Disability, Ex-Construction Worker Seeking Desk Role

Hafiz lost mobility in his legs following a workplace accident. With only basic digital skills and a long history in manual labor, he struggles to find a new path. He wants to support his children and regain purpose through employment.

PAIN POINTS 😟

- Inaccessible training for mid-career reskilling
- Office venues are often inaccessible for wheelchairs
- Concerns over long-term job suitability given his health

MOTIVATIONS 🔥

- Wants to re-enter the workforce in an administrative role
- Provide stability for his family
- Prove his resilience to himself and others

SUPPORT NEEDED 👏

- Hybrid or work-from-home admin roles
- Targeted training programs with assistive support
- Modular upskilling platforms for adults

DIGITAL PROFICIENCY 📃

- Low to moderate

PREFERRED CHANNELS ✖️

- WhatsApp, phone calls

Persona 3

> *My biggest fear is: 'What happens to my son when I'm no longer around?' I don't just want him to survive. I want him to be independent."*

AIDA, 53, Female, Kuantan

Mother and Unpaid Caregiver to Visually Impaired Son

Aida left her part-time job to care for her son who developed blindness at age 13. Her days are filled managing appointments, escorting him for interviews, and advocating for his rights.

Caregivers

PAIN POINTS 🥴

- No formal recognition or support for caregivers
- Financially burdened from being a single-income household
- Navigates bureaucracy without guidance

MOTIVATIONS 🔥

- See her son thrive independently
- Create awareness about the role of caregivers
- Access mental and financial relief

SUPPORT NEEDED 🤝

- Caregiver subsidies and flexible employer benefits
- Peer communities and advocacy networks
- Guidance in navigating support systems
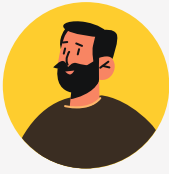
DIGITAL PROFICIENCY 📝

- Moderate

PREFERRED CHANNELS

- WhatsApp, In-person briefings

Persona 4

I want to do the right thing, but I don't want to make the wrong move."

JOHAN, 47, Male, Johor Bahru

SME Owner with Good Intentions, Limited Know-how

Johan owns a growing SME in the furniture sector. He is interested in inclusive hiring but doesn't know where to begin. A failed attempt to hire a deaf employee made him overly cautious.

Employers and Hiring Decision-Makers

PAIN POINTS 😟

- Misconceptions about cost of workplace adjustments
- Lacks internal resources for inclusion policies
- Fears embarrassing himself or the employee

MOTIVATIONS 🔥

- Position his company as an inclusive workplace
- Improve retention through meaningful diversity
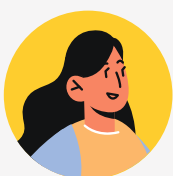- Attract government support and new talent pools

SUPPORT NEEDED 👏

- Practical hiring templates and inclusive job descriptions
- Hands-on coaching for staff and supervisors
- A matchmaking system for ready-to-hire PWDs

Persona 5

"We are committed, but commitment without know-how is just pressure."

SITI, 38, Female, Kuala Lumpur
Corporate HR Manager Balancing Policy and Pressure

As HR lead for a nationwide retail chain, Siti is under pressure to meet inclusive hiring KPIs but lacks tools and time. Her team once onboarded a blind intern but faced operational roadblocks during placement.

PAIN POINTS 😟

- Policy exists but implementation is patchy
- Lack of knowledge on how to make reasonable accommodations
- Middle managers lack empathy or training

MOTIVATIONS 🔥

- Champion inclusivity without overwhelming her HR team
- Build a replicable hiring process across outlets
- Ensure inclusivity doesn't mean compromise on performance
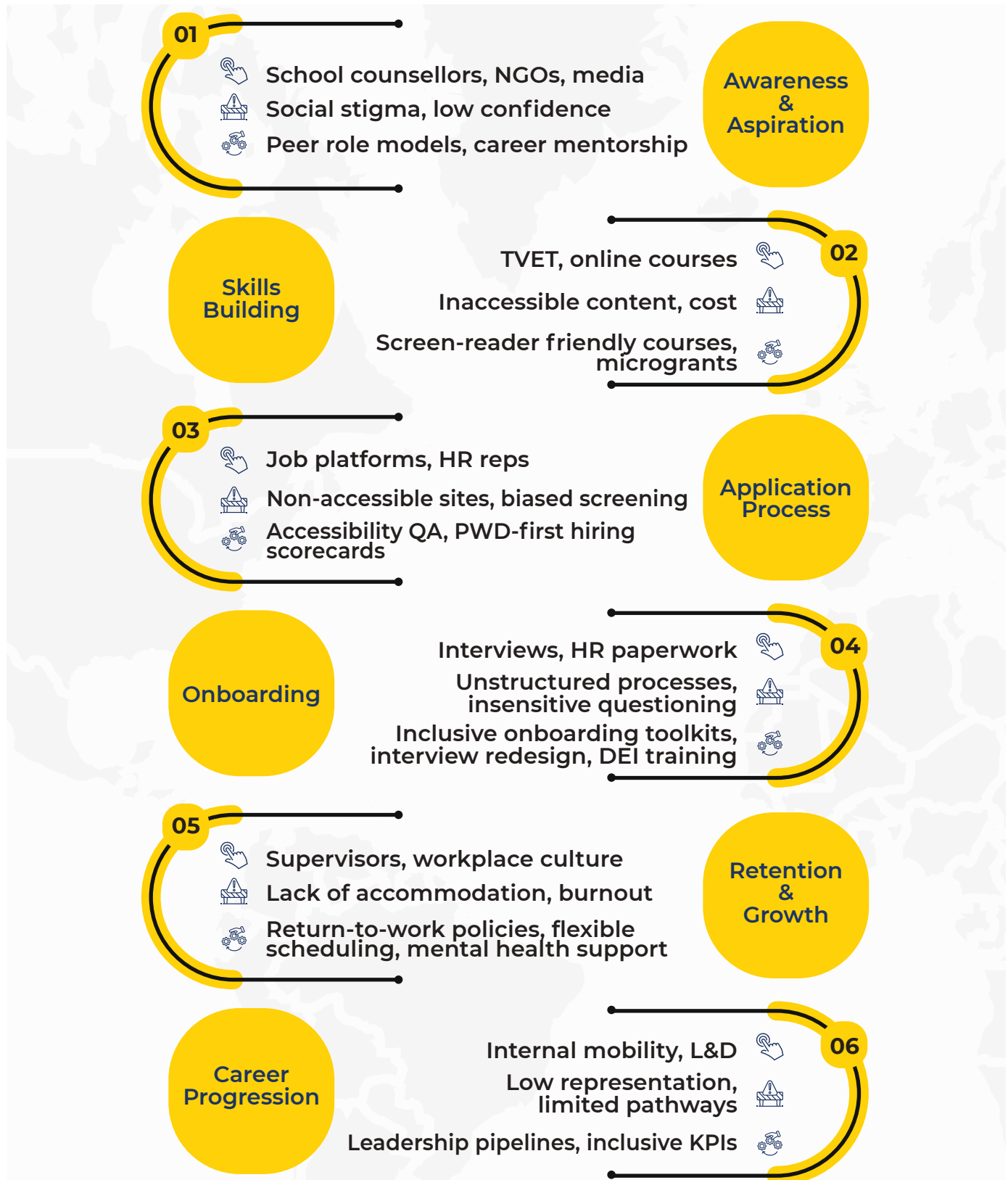
SUPPORT NEEDED 🙌

- Pre-screened talent pools and inclusive job design
- Toolkits for frontline teams (store managers, floor staff)
- Recognition program for internal inclusion champions

PREFERRED CHANNELS

- Email, HR networks, Internal LMS

Inclusive Employment Journey Map

The employment journey for PWDs is marked by barriers and decision points across six stages. This map offers a framework for tracking friction points and designing targeted solutions throughout the PWD employment lifecycle.

01 Awareness & Aspiration
- School counsellors, NGOs, media
- Social stigma, low confidence
- Peer role models, career mentorship

02 Skills Building
- TVET, online courses
- Inaccessible content, cost
- Screen-reader friendly courses, microgrants

03 Application Process
- Job platforms, HR reps
- Non-accessible sites, biased screening
- Accessibility QA, PWD-first hiring scorecards

04 Onboarding
- Interviews, HR paperwork
- Unstructured processes, insensitive questioning
- Inclusive onboarding toolkits, interview redesign, DEI training

05 Retention & Growth
- Supervisors, workplace culture
- Lack of accommodation, burnout
- Return-to-work policies, flexible scheduling, mental health support

06 Career Progression
- Internal mobility, L&D
- Low representation, limited pathways
- Leadership pipelines, inclusive KPIs

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Assistive Technology and Inclusive Digital Innovation

Assistive technology (AT) and inclusive digital solutions are rapidly reshaping how PWDs navigate work, learning, mobility, and communication. Globally, these innovations are moving from niche tools to mainstream platforms. In Malaysia and the wider ASEAN region, there is growing recognition of the role of AT in unlocking independence, economic participation, and digital equity.

Despite rising awareness and policy frameworks however, access to assistive solutions remains uneven, limited by cost, ecosystem fragmentation, digital exclusion, and lack of standardisation.

Global Trends: Mainstreaming Inclusive Tech

Globally, assistive technologies are evolving from specialised aids to universally designed products embedded in daily life. Key trends include:

AI-Powered Accessibility

Tools such as Google Lookout and Seeing AI offer real-time object recognition and scene descriptions. AI captioning, emotion-aware interfaces, and predictive communication are advancing rapidly. Examples include Microsoft's Inclusive Tech Lab and Google's Accessibility Suite

Wearables and Sensory Substitution

Devices such as Dot Watch and Neosensory translate sensory input into accessible formats. Smart canes, haptic feedback tools, and Braille e-readers are becoming more affordable and compact.

Open-Source and Low-Cost Models

Community-led platforms like Enable and ATmakers enable local adaptation using 3D printing and modular design. Frugal innovation is making AT more accessible in low- and middle-income regions.

Universal Design Integration

Global tech leaders are embedding accessibility into default design settings. Apple's VoiceOver and Microsoft's adaptive controller are market leaders in this space.

Malaysia's Emerging AT and Digital Inclusion Landscape

Malaysia has a growing ecosystem of innovators, NGOs, and startups focused on assistive technology and digital inclusion. However, at this point, the ecosystem remains early-stage and fragmented.

Notable Local Innovators
SEJOLLY Inclusive job-matching platform co-designed with the PWD community
SAPOT Mental health and digital wellness platform with accessible UX and offline access
ADASTRA Smart wearables for users with limited upper limb mobility, enabling gesture-based control
ENOKU National digital skills training initiative for PWDs focused on employment pathways

Key Gaps and Barriers

- Low market penetration and visibility of AT products
- Absence of standards, tax incentives, and certification pathways
- Fragmented R&D and commercialisation efforts
- Limited financing and public procurement mechanisms to scale inclusive tech adoption

What Works: Case Studies (Local & Global)

Local Successes

SEJOLLY
Inclusive hiring platform; offers employer onboarding tools and community-led design

SAPOT
Mobile-first wellness app in Bahasa Malaysia; strong appeal to neurodiverse users

ADASTRA
An Intellectual Property Firm
Gesture-controlled assistive wearable prototype; now seeking manufacturing support

ENOKU
Government-supported digital skills training for PWDs across Malaysia

Global Case Studies

Be My Eyes
Peer-assisted navigation via live video; easily localisable

Dot Inc.
Braille smartwatches and tablets with tactile feedback

Microsoft Inclusive Hiring Toolkit
Neurodiversity-friendly recruitment systems

Wheelmap
Crowdsourced, open-access platform mapping wheelchair-friendly locations

What Can Be Scaled or Localised

Solutions that combine inclusive design, cultural relevance, and ecosystem integration are best positioned for scale.

Solution Type	Global Examples	What Works	Localisation Strategy
Apps	Be My Eyes	Mobile-first, peer-powered	Add local language support, integrate with Malaysian NGOs or peer networks
Wearables	Dot Watch	Functional + sleek; mobile-friendly	Collaborate with local manufacturers and PWD councils
Platforms	Wheelmap	Community-driven; employment-focused	Incentivise content contribution; align with GLCs and SOCSO
Toolkits & Training	Inclusive Hiring Toolkits	Structured onboarding and support	Co-develop with HR networks; embed in SME/GLC capacity-building

Opportunity Areas for Digital Inclusion

The intersection of disability inclusion and digital transformation presents a unique opportunity for systemic change. Through engagements with PWD communities, employers, innovators, and NGOs, five high-potential opportunity areas have emerged, where targeted interventions can generate social impact, market traction, and scalable solutions.

Employment and Economic Empowerment

Unemployment and underemployment among PWDs are persistent and systemic. The barriers go beyond hiring—they include recruitment processes, inaccessible work environments, and limited support for career progression.

Innovation Opportunities

- **Inclusive job-matching platforms tailored for different disability types (e.g. screen-reader compatibility, neurodivergent-friendly UI)**

- **Accessible freelancing and gig economy platforms for flexible work**

- **Employer onboarding tools and digital DEI (diverse, equitable and inclusive) training modules**

- **Micro-enterprise toolkits with inclusive invoicing, marketing, and logistics features**

Pilot Idea

A mobile "job coach" app to guide PWDs through job-seeking, interviews, and onboarding support

Inclusive Digital Infrastructure

Even the best tools are ineffective if basic digital infrastructure remains exclusionary. Inclusive digital environments are foundational for participation, from education and employment to civic life.

Innovation Opportunities

- AI-powered web accessibility auditing tools for government and corporate websites

- Incentive schemes for universal design compliance in SME tech development

- Accessible device bundles (e.g. tablets with pre-installed screen readers and Braille keyboards)

- Cloud-based assistive software libraries for developers (API-accessible)

Pilot Idea

A national "Accessibility Badge" certification for inclusive websites and apps, tied to public procurement eligibility

Safety, Navigation, and Mobility Tools

PWDs often face increased risk in navigating unfamiliar or inaccessible environments, especially those with visual, physical, or cognitive impairments.

Innovation Opportunities

- Offline-compatible smart navigation apps with voice and haptic guidance

- Community-contributed accessibility mapping platforms (e.g. accessible toilets, bus stops, ATMs)

- Smart wearables with fall detection, location sharing, or panic alerts

- IoT integration for accessible transport and urban infrastructure

Pilot Idea

A KL-specific accessibility map platform that allows crowdsourced reporting of barrier-free locations

Communication and Mental Health Solutions

Communication barriers and social isolation are especially pronounced for individuals with mental, psychosocial, or learning disabilities.

Innovation Opportunities

- Digital mental wellness companions designed with neurodivergent users in mind
- Peer-to-peer chat apps with built-in moderation and privacy safeguards
- Sensory-friendly digital planners for routine-building and self-regulation
- Sign language visualisers or low-bandwidth communication tools for those with speech or cognitive impairments

Pilot Idea

A co-designed mental health and self-care app offering offline access and audio guidance, tailored to Malaysian youth with psychosocial disabilities

Cross-Cutting Innovation Enablers

Across all opportunity areas, the following enablers can accelerate adoption and ecosystem readiness:

01 FUNDING MECHANISMS

Inclusive innovation grants, social impact funds, and AT seed capital

02 LIVING LABS

Real-world testing environments for inclusive design with PWDs as co-creators

03 NATIONAL STANDARDS

Accessibility benchmarks for tech developers, public tenders, and grant recipients

04 CROSS-SECTOR COALITIONS

Multi-stakeholder alliances involving government, startups, GLCs, and DPOs

PART D:

Strategic
Roadmap Forward

Recommendations and What's Next

Malaysia and the wider ASEAN region are at a pivotal moment. With the digital economy expanding and Malaysia chairing ASEAN in 2025, the time is ripe to advance a disability-inclusive innovation agenda—one that centres accessibility, co-creation, and systemic change.

This section outlines both strategic recommendations and immediate tactical opportunities to catalyse inclusive employment and assistive technology adoption.

Strategic Actions for Systemic Change

1. Establish a National Inclusive Innovation Fund

- Mobilise blended finance (public-private-philanthropic) to support the development, testing, and scaling of inclusive tech solutions
- Include matching grants and startup incentives for assistive technology R&D

2. Launch the TechUpaya (or similar PWD-related) Living Lab

Create real-world testing spaces for PWD-designed tech across urban and rural settings

Include continuous feedback loops, outcome tracking, and solution validation

3. Integrate Accessibility Standards into Digital Procurement

- Make inclusive design a requirement in public tenders, SME grants, and innovation funding schemes
- Align with global standards such as WCAG, ISO 9999, and WAI Guidelines

4. Embed Inclusive Design into National Talent and Innovation Pipelines

Build inclusive design thinking into entrepreneurship, digital literacy, and HR development programmes

Leverage national platforms (e.g. MDEC, HRD Corp) to cascade adoption

5. Build Multi-Stakeholder Coalitions for Scale

- Convene government, industry, startups, DPOs, academia, and social enterprises to co-own outcomes
- Establish a national coalition or steering group to guide implementation and ensure accountability

TechUpaya: Proposed Pilot Focus Areas

Based on feasibility, urgency, and ecosystem readiness, two disability categories are recommended for initial TechUpaya pilot initiatives:

Pilot Focus	Target Group	Solution Themes
Visual Disability	Blind and low vision users	Navigation tools, accessible content, wearable safety tech
Physical Disability	Wheelchair and mobility-impaired users	Smart infrastructure, adaptive devices, inclusive transport

Monitoring and Evaluation Framework

To ensure long-term impact, the following mechanisms are recommended:

Outcome Tracking:
Employment status, digital access, solution uptake

User Feedback Loops:
Panels, surveys, and PWD-led community forums

Ecosystem Health Metrics:
Startups supported, partnerships formed, tools deployed

Accessibility Audits:
Periodic review of digital platforms and physical sites receiving public funding

Tactical Opportunities for Immediate Action

This list of recommendations is designed not only to unlock near-term wins but to build the infrastructure and culture necessary for long-term, inclusive digital transformation, led by Malaysia, and resonating across ASEAN.

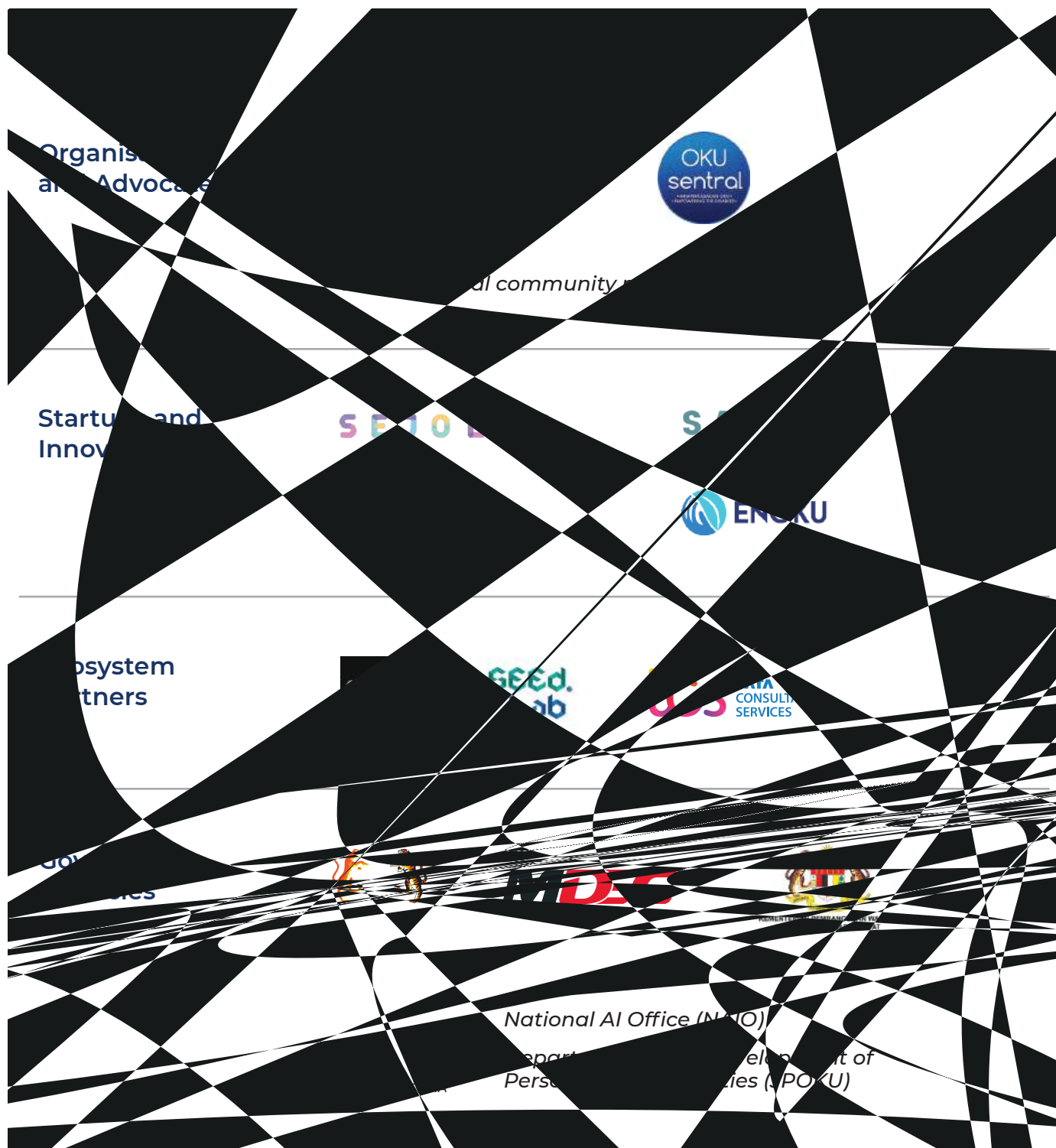| Strategic Areas of Intervention	Suggested Recommendations
Governance	▪ To consider a whole-of-nation approach where the implementation of PWD initiatives could be more effectively governed through greater collaboration and synergy between relevant ministries. For example, PWD initiatives related to digital technologies could have oversight from KPWKM; funding on training from KESUMA; and facilitation of technology industry ecosystem and support from KD.
Policies	▪ To ensure that the insights and opportunities presented in this report; as well as some potential initiatives, be shared with KPWKM for consideration for possible inclusion in the Pelan Tindakan OKU 2026-2030. ▪ To propose for all relevant Ministries and its agencies to be involved in the review of the Persons with Disabilities Act 2008; and to also consider implications of current trends and technology in the update of the Act. ▪ To ensure that key digital initiatives related to PWD would be comprehensively covered under RMK13. As of this writing, MDEC's proposed TechUpaya was submitted as a project under the Golongan Rentan section of the Pembangunan Bakat Digital initiative. ▪ To emphasise and encourage all ministries to review their existing websites and mobile applications to be compliant to the international Web Content Accessibility Guidelines (WCAG). ▪ For Government to review existing employment policies and engage with relevant PWD communities and related PWD placement companies to establish strategic hiring plans to ensure the target of 1% employment of PWD in public service by 2030 as highlighted in the RMK13 document.
Awareness	▪ For key Government stakeholders to facilitate more regular engagement sessions with the various PWD communities to understand their challenges and needs better. ▪ To convene a national-level inclusion tech forum or a related dialogue that is positioned within an established Tech Conference/Event.
Technology	▪ To pilot digital skills bootcamp trainings for PWD; with the focus being not only to prepare the targeted PWDs for employment, but also to prepare employers to be ready and prepared to receive PWD employees. ▪ To establish a consortium of technology players from the industry and associations/NGOs from PWD communities to provide consultation and support to ensure the effective implementation of a private-public partnership model. ▪ Establish an assistive technology innovation challenge grant to encourage more innovation and solutions to grow more start-ups and scale-ups to participate in the national PWD agenda.

Appendices

Appendix A: Acknowledgements

This report was developed through a participatory process involving multi-stakeholder engagements across government, civil society, industry, and the innovation ecosystem. Contributors and engagements were held by the following.

Organisations
Advocates

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Appendix B: Methodology

TechUpaya

Proposed digital initiative for PWDs in Malaysia; potentially scalable to ASEAN

Employment Placement and Digital Upskilling

Scaling and Incubation of Digital Assistive Technology

Is the assistive technology solution in the market?

YES → ACCELERATION & GROWTH

NO → INCUBATION

STAGE 1 — Ideation & Recruitment
STAGE 2 — Mentoring & Academy
STAGE 3 — POC Facilitation

Go To Market

Partnerships with Corporates: Embedding Digital Accessibility for Economic Empowerment (e.g. Banking Apps)

PRIVATE SECTOR | Financial Institutions

Government agencies initially involved: PUBLIC SECTOR

CIVIL SOCIETY

Note: all partners depicted in the methodology above are illustrative and non-exhaustive

Appendix C: Glossary of Terms

Term	Definition
PWD	Persons with Disabilities
UNCRP	United Nations Convention on the Rights of Persons with Disabilities
AT	Assistive Technology - tools and systems that enhance the functional abilities of PWDs
WCAG	Web Content Accessibility Guidelines
TechUpaya	Proposed concept and national initiative led by MDEC to incubate and scale inclusive tech solutions for PWDs
Living Lab	A real-world testing environment that centres users in product development
Inclusive Design	Design approach that ensures usability by people of diverse abilities from the outset
DPO	Disabled People's Organisations
KESUMA	Kementerian Sumber Manusia
KPWKM	Kementerian Pembangunan Wanita, Keluarga dan Masyarakat

Appendix D: Resources and Toolkits

Recommended guidelines, standards, and innovation references	▪ UNCRPD Implementation Toolkit ▪ Microsoft Inclusive Design Toolkit ▪ G3ICT Digital Accessibility Benchmarks ▪ W3C Web Accessibility Initiative (WAI) Guidelines ▪ ASEAN Enabling Masterplan 2025 ▪ WHO Priority Assistive Products List ▪ Disability: IN Accessibility Guidelines

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