



Consumer Technology Association, producer of CES®

AI and Accessibility

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Introduction

In the United States, people with disabilities represent more than one-quarter of adults, cutting across a variety of identities and experiences, including age, income, race, and geography. As community and social interactions, the media, health care services, government functions, education, and employment move online, digital accessibility has become a necessity for human existence in this country. Yet online environments often amplify inequities, leaving the disability community further behind. The rapid advancement of Artificial Intelligence (AI) presents a similar dual reality: it has the potential to become one of the most transformative accessibility technologies in modern history, but only if people with disabilities are included throughout its design, testing and deployment.

Accessible design has always benefited more people than its immediate or intended users. Sidewalk curb cuts benefit not just wheelchair users but also parents pushing strollers, a phenomenon that has become known as the “curb cut effect.” In the digital space, captions, originally designed for people with hearing disabilities, make it easier for those without disabilities to watch videos in loud or private environments and understand the context of videos better, and predictive text and voice recognition tools are now ubiquitous. The curb-cut effect shows how designing for accessibility can drive innovation that benefits everyone.

AI represents a new frontier for this dynamic. Recent advances in AI have helped facilitate automatic speech recognition, real-time transcription, language processing, and image description. These new tools are reshaping how people with and without disabilities interact with the digital world and technology more broadly. For the more than one billion people worldwide living with a disability, this shift carries enormous opportunities. AI tools can help reduce barriers to communication, employment, health care, education, transportation, and daily living. These tools can meaningfully expand both independence and participation in community life.

However, the promise of AI is not yet a reality for many people with disabilities. Concerns about privacy, algorithmic discrimination, and tools that do not meet users' needs have led many in the disability community to approach AI with caution. Understanding both the opportunities and the barriers to the people most affected is critical to ensuring AI development is equitable and accessible.

To explore the intersection of AI and accessibility, the Consumer Technology Association (CTA)[®] partnered with three disability advocacy organizations to examine how the disability community is approaching AI: Access Living, Disability Belongs[™], and CommunicationFIRST. Each organization conducted empirical research to highlight how the communities they serve are using AI in their daily lives and what barriers exist that are limiting broader adoption. To capture a wide representation, each partner focused on a different disability category aligned with key areas of their expertise. Access Living examined physical disabilities (dexterity and mobility) and sensory disabilities (blind/low vision and Deaf/hard of hearing); Disability Belongs[™] focused on cognitive and intellectual disabilities; and CommunicationFIRST explored speech disabilities.

The primary goal of this project was to document the lived experience of people with disabilities. Rather than speculate about future possibilities, this research surfaces what is actively happening now. The case studies illuminate how AI tools are being used, adapted, and evaluated across four key areas of life: transportation, household management and daily living, healthcare, and employment.

By centering community voices, this project aims to move the conversation about AI and accessibility away from abstract principles and toward meaningful action.

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About the Authors:

- **Consumer Technology Association (CTA)[®]:** As North America's largest technology trade association, CTA is the tech sector. Our members are the world's leading innovators – from startups to global brands – helping support more than 17 million American jobs. CTA owns and produces CES[®] – the most powerful tech event in the world.

CTA is committed to ensuring technology works for everyone. The CTA Foundation works to connect seniors and people with disabilities with technologies that enhance their lives. The Innovation For All initiative believes that for innovation to reach its full potential, a variety of voices, experiences, and perspectives must be integrated into the workforce. CTA's AI Council, comprised of industry leaders, shapes CTA's strategic direction and advances AI innovation across the broader technology landscape.

- **Access Living:** Access Living is one of the nation's leading Centers for Independent Living. Founded in 1980, their mission is to advance opportunities and inclusion for people with all types of disabilities. To achieve that mission, their work focuses on the provision of direct independent living services, public education on disability issues and policy reform that is rooted in principles of self-determination of people with disabilities to live the lives of their choosing.
- **Disability Belongs[™]:** Disability Belongs[™] is a diverse, disability-led nonprofit that works to create systemic change in how society views and values people with disabilities, and that advances policies and practices that empower people with disabilities to have a better future. Their mission is to drive cultural and policy change to ensure the disability community's full representation and influence, creating a more accessible, equitable, and inclusive society.
- **CommunicationFirst:** CommunicationFIRST is the only nonprofit organization dedicated to protecting and advancing the civil rights of the more than five million children and adults in the United States who, due to disability or other condition, cannot rely on speech alone to be heard and understood. Their mission is to protect and advance the rights, autonomy, opportunity, and dignity of people with speech-related disabilities through public engagement, policy and practice reform, and systemic advocacy.



Sensory Disabilities

Blind

Both of the blind and low vision individuals who were interviewed were quick adopters of AI tools to navigate their communities. They explained how they used AI-powered smart glasses to help travel in airports, read recipes and mail, and coordinate outfits. These tools empowered them to rely less on human assistance and be more independent in making their own choices. However, they also expressed hesitation in using AI without human assistance for reading sensitive information, such as medical or financial documents for concerns over privacy and security.

Both interviewees also expressed that they felt that their AI-powered smart glasses did not adequately describe their surroundings in detail. For example, one interviewee said that the glasses would report that they were in front of what appears to be a café but did not readily give specifics they wanted – that they were in front of a Starbucks. The other blind user talked about how she wished her smart glasses would be more helpful in detecting and notifying her of obstacles in the street such as snow and ice. One participant noted that at an event, her smart glasses were not sharing a description of the speaker or what they were wearing. She noted that this limited how helpful the smart glasses were in social and work settings.

Deaf

One deaf entrepreneur, who owns a company with five employees, described AI as critical to both his daily life and work. He uses AI tools to record and transcribe meetings – a practical alternative to in-person sign language interpreters, which would be prohibitively expensive as a small business owner. However, he noted that having to ask permission to record meetings is sometimes uncomfortable and strains professional relationships and argued that transcription capabilities should simply be embedded into video call platforms rather than treated as an add-on.

He also pointed to telemedicine as an area in need of improvement. Because his hospital's telemedicine platform lacks built-in captions, he must request a sign language interpreter — but the video format only allows two people on screen, forcing him to choose between seeing his interpreter and seeing his doctor significantly diminishing the patient-doctor experience.

He also expressed frustration with generative AI with what he described as “micro-aggressions” embedded in AI outputs — particularly the default use of terms like “hearing impaired” and “hearing loss.” As someone who identifies as a proud Deaf man, he found this language inaccurate and offensive, and attributed it to the absence of disabled people in the development and testing of these platforms. Without that inclusion, he argued, these products will never truly meet the needs of the disability community.

Lastly, he said that he is apprehensive of the world moving to adopt AI sign language avatars. He raised concerns about avatars effectively navigating cultural context, due process and complicated legal language because AI is “nowhere close” to adapting to sign language fluency levels.

Hard of Hearing/Hearing Loss

One interviewee, a female pharmacist of color who is hard of hearing, described how her employer had adopted an AI tool that records patient visits and translates speech to text using medical terminology. She talked about how this move was finally leveling the playing field for her in her professional careers because it was being used by all employees. While it was helping her as a hard of hearing clinician to perform her job by translating voices to text, it was enabling all clinicians to be more accurate and attentive to their patients because they no longer had to simultaneously take notes on the computer while listening. Rather than being required to request reasonable accommodation for a specialized voice-to-text device, she was able to use the same product as all her colleagues, making the workplace more universally accessible in the process.

Physical Disability

One interviewee, the Executive Director of a Center for Independent Living, who used a power wheelchair and ventilator due to a high-level physical disability, described himself as an early adopter of AI out of “necessity.” As someone who relies on near constant support from personal assistants for daily living, his use of AI largely centered around personal healthcare and caregiver management.

Like many executives, he also uses AI for workplace tasks such as writing and grammar, but he also described several more specific applications. He uses AI to identify disability-related tax deductions and AI-powered smart glasses to film personal

assistants performing his daily care routines — creating recordings that serve as efficient training tools for new caregivers. A smart ring helps him determine the best timing for vitamins and monitors his oxygen levels which allows him to schedule necessary rest periods into his workday and make informed decisions about working from home versus the office. He also uses AI to generate a customized weekly shopping list based on a detailed dietary plan, reducing the burden on personal assistants who would otherwise need to develop meal plans independently. Taken together, these tools provide the information and support he needs to maintain his health, manage his care team, and perform effectively in an executive leadership role.

Cognitive and Intellectual Disabilities and Neurodivergence

For individuals who are neurodivergent or have cognitive or intellectual disabilities, navigation and planning emerged as the most prominent use case. The most identified cognitive disabilities were Attention-Deficit/Hyperactivity Disorder (ADHD), autism, and dyslexia. Importantly, not all those who identify as neurodivergent consider themselves to have a disability. For these individuals, everyday smart devices, such as TVs, lights, and printers, have proven useful, reducing mental strain and supporting greater independence with daily tasks.

Participants and interviewees widely preferred using AI to plan routes and explore new areas, finding it empowering for travel and independence. Participants used navigation apps for getting around, and voice-activated assistants made it easier to search and get directions hands-free. That said, not everyone found voice features helpful. One interviewee with ADHD noted that voice commands in map apps could be distracting, and they preferred to rely solely on visual directions.

Beyond navigation, AI has become a meaningful part of daily life for people with cognitive disabilities. Many participants appreciated when their phones created reminders based on past behavior, even without being explicitly set up to do so. Some participants noted that AI has made it easier to participate in social events, such as finding events based on their interests and using technology to communicate more effectively with friends. In the workplace, AI tools have helped participants feel more productive and less burned out. Smart schedulers, note-taking tools, and assistive devices were frequently cited as valuable for managing meetings, organizing thoughts, and handling planning tasks that might otherwise be overwhelming.

However, participants noted that many tools are not optimized for different speech patterns or speeds. People who rely on captions for meetings and notes often report inaccuracies in

what is captured. One participant noted that speech to text is “garbage” and often “fails to catch all the words in a given sentence if you talk too fast or too slow for it.”

Nearly all interviewees and most survey participants rely on scheduling tools to manage health appointments and consolidate their health data in one place. Yet many participants expressed concern about data privacy in this area. Many participants also expressed that AI integration in healthcare settings created barriers rather than removing them. Many people with cognitive disabilities, who interact more frequently with the medical system, find it especially frustrating when nuanced concerns arise, and they cannot reach a real person. One recurring frustration was that AI tools in medical contexts often appear suddenly without input from patients and without options to opt out.

Based on the survey responses and interviews, it became clear that many individuals lack clarity about which programs incorporate AI, especially generative AI, often confusing general AI features with more advanced generative capabilities. Much of this confusion stemmed from companies inserting AI seemingly without warning, so most participants discovered new features through smartphone or app updates rather than by deliberate choice.

Speech Disabilities

The participants with speech disabilities were optimistic about the potential of AI to make expressive communication faster and more fluid. Many who rely on augmentative and alternative communication (AAC) are already experimenting with or benefiting from AI-powered features, from word prediction to facial recognition for hands-free device access. (Because speech is a fine motor skill, many with speech-related disabilities also have other motor disabilities, including the use of their hands.) As one participant explained these tools are beginning to address some personal frustrations they have experienced with being understood, saying, “It can be frustrating for me personally, when I lose pace in conversation, so that’s when being a tad quicker is helpful. I think if AI is going to drive efficiency for people, it should include AAC.” Another participant imagined a technology that could “[take] notes on my AAC devices and [help] me reflect back on what was said and [give] me an option to go back and address that topic again, if I choose to.”

Word prediction, one of the most widely used generative AI features in AAC devices, earned particular praise. Users described relying on multi-word prediction not just for speed, but for their ability to write and communicate more fully. Participants noted wanting more robust multi-word and sentence prediction and support for multiple languages. Beyond prediction, AI tools are helping users navigate grammar and

message construction. One participant, who doesn't always write in full sentences when communicating via AAC, noted that AI has helped him get his message across more easily.

At the same time, participants raised concerns about the limitations of AI-based speech generation to capture users' voices and expressions. Participants expressed that voice options still feel robotic and emotionally flat, leaving users unable to convey tone, emphasis, or feeling. As one participant described, "I don't want a device just to communicate. Moreover, I don't like the way it sounds, very robotic voices. I can't emphasize anything, and make it sound different. I can't make any emotions, like when I like, or don't like something, when I'm excited, happy or sad, anything. That's very important to me, but I'm not able to do it in any way."

Alongside this, some participants expressed concern that AI tools risk altering the meaning or character of their messages. One participant spoke highly of AI grammar tools for clarity and concision but cautioned that suggested edits "can change what you are really trying to say, and how you're trying to say it." Another participant built on this idea, saying, "I am my own voice. And no matter what applications I use, there is one natural laugh that pertains to me."

Closing Thoughts

Closing the Knowledge and Affordability Gap

Overall, this project highlighted the many unexpected ways that people with a range of disabilities use AI tools to enhance their own independence, health, and professional performance. From managing caregivers and healthcare to keeping pace in workplace and social conversations, the people interviewed for this project are using AI in ways to meaningfully advance their independence and self-determination,

While there was a firm belief in the power of these tools to support people with disabilities, the conversations also surfaced real and important concerns. Privacy was top of mind for many, expressing concern over the use of sensitive information in AI models. More pressing was the concern that AI tools are frequently built without the input of people from the disability community. Compatibility issues with assistive devices, interfaces that don't work with joysticks or switches, and generative AI that defaults to outdated or offensive language were cited as signals that the disability community has been left out of the design process. As several interviewees made clear, this is not a problem that can be patched after the fact. People with disabilities should be present throughout the design process so that the populations that could benefit most are taken into consideration.

This project also affirmed the great divide in the disability community in knowledge and access to AI. The individuals interviewed, though racially and generationally diverse, were mostly employed, socially and digitally connected, and already using AI tools. For them, the question was how to use AI better and to minimize the downsides. For many others in the disability community, the question is whether they can access it at all.

AI can promote independence and create opportunities, but only if basic barriers are addressed first. Affordability of devices, internet access, and digital literacy remain significant obstacles. Low-income people with disabilities, particularly those who are older, isolated, or living in under-resourced communities, face the same barriers to AI adoption that they face with technology broadly: access to the technology. These are not new problems, but AI has the potential to either widen the gap or help close it, shaping not only individual outcomes but broader workforce participation and economic opportunity. A tool that could improve someone's access to health care and community or help them participate more fully in the workforce will only be transformative if that person can obtain and fully access the tool.

Ultimately, whether the full promises of AI are realized for the disability community will be determined not just by technical capabilities, but by whether people with disabilities are empowered to shape, inform, and lead the development of these technologies. Accessibility is not only a matter of civil rights. It's also a driver of innovation, workforce inclusion, and economic growth. Ensuring that people with disabilities are active participants in building AI will be essential to harnessing its full power.

Appendix

Methodology & Demographics

Each organization conducted a series of interviews with individuals of varying ages, backgrounds, and disability experiences to gather qualitative insights into how people interact with AI. To ensure broad representation, each organization focused on a distinct set of disability types: Access Living examined physical disabilities (dexterity and mobility) and sensory disabilities (blind/low vision and Deaf/hard of hearing); Disability Belongs™ focused on cognitive and intellectual disabilities; and CommunicationFIRST explored speech disabilities. Participants' names have been omitted to protect their anonymity.

Access Living conducted a series of one-on-one interviews with participants with a range of backgrounds. All participants were employed full-time or retired from full-time employment and considered themselves to be comfortable with technology, but not necessarily early adopters of it. Participants' ages ranged from mid-30's to mid-60's and ethnicities included white, Latino, and Black.

In addition to interviews with individuals of varying ages and backgrounds, Disability Belongs™ distributed a paid survey through SurveyMonkey, collecting responses from 406 participants across different geographic regions, age groups, and disability types. 64% of survey respondents self-identified as female and 36% self-identified as male, with ages ranging from 18 to mid-60s.

CommunicationFIRST took a two-phase approach. In October 2025, it hosted a public webinar featuring a panel discussion with Rua Mae Williams, PhD, author of the recently published *Disabling Intelligences: Legacies of Eugenics and How We Are Wrong about AI*, alongside two members of CommunicationFIRST's Board of Directors, Jordyn Zimmerman, M.Ed., MBA, and Godfrey Nazareth, MS — both of whom rely on AAC to communicate. The webinar was designed to educate the community about AI and its potential impacts. Building on that foundation, CommunicationFIRST held a series of focus group sessions in December 2025 and January 2026, with AAC users who responded to a public call for participants on this issue. An asynchronous participation option was offered for accessibility, and all focus group participants were offered a USD 150 stipend for their contributions.



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