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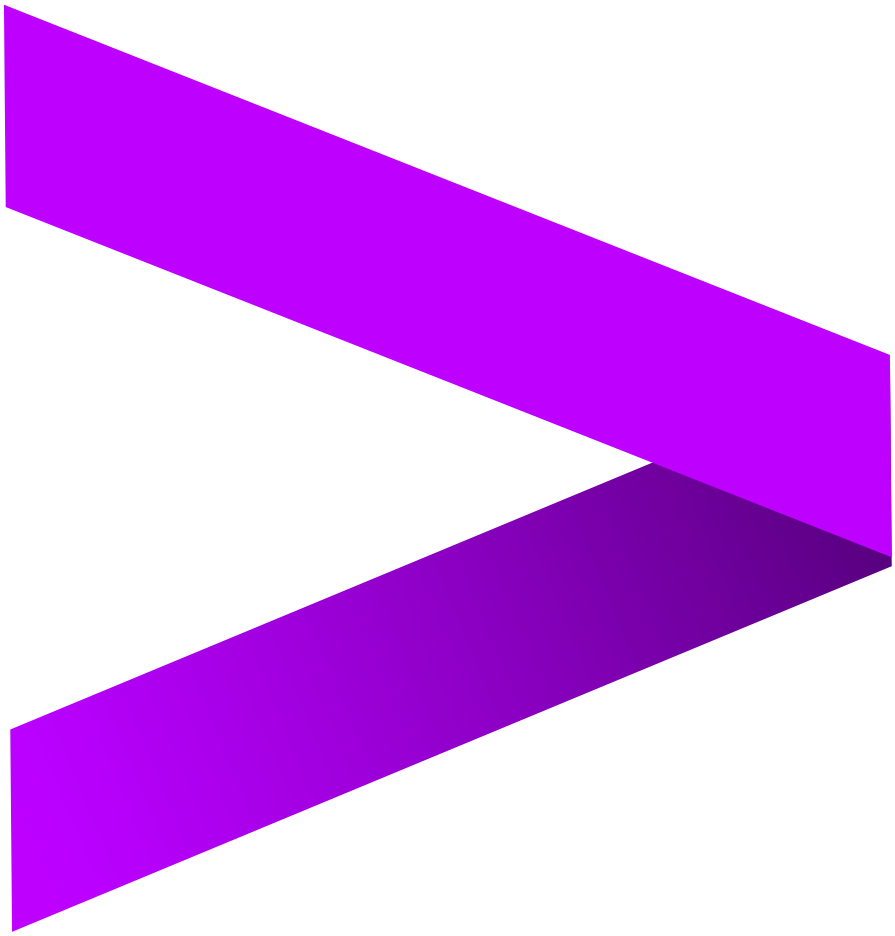

THE ACCESSIBILITY ADVANTAGE:

Why Businesses Should Care About Inclusive Design

Businesses that will thrive in the economy of tomorrow recognize that meeting the needs of diverse populations is key to their business model today. But an often under-recognized group is those with disabilities. In fact, providing increased access to technologies that meet the needs of persons with disabilities lays the foundation for inclusive work cultures that enable these employees to thrive—presenting a tremendous opportunity.

Consider this: There are approximately 20 million individuals with disabilities in the United States, representing US$490 billion in disposable income.[1] Globally, these figures jump to 1 billion individuals with disabilities with US$8 trillion in disposable income,[2] making them the 3rd largest economic power in the world above Japan, Germany, and the United Kingdom.[3]

What's more, companies that embrace inclusion outperform their competitors. In the report *Getting to Equal: The Disability Inclusion Advantage*, Accenture notes that of the 140 companies in the Disability Equality Index (DEI)—a benchmarking tool that gives US businesses an objective score on their disability inclusion policies and practices—the 45 companies that stand out for their leadership in areas specific to disability employment and inclusion had, on average over a four-year period, 28 percent higher revenue, double the net income and 30 percent higher economic profit margins than the other companies.[4]

Leading companies are innovating around these emerging market opportunities by making inclusion a core aspect of their culture. They recognize that an inclusive culture pushes employees to design technologies that serve a larger number of people. What's making these companies successful is that they're championing accessibility and inclusive design processes within research and development, product design, and experience design groups. When their technology is not compliant with accessibility regulations or when accessibility features are added late in the design process, businesses find themselves exposed to legal and financial risk. In the first half of 2018 there were more lawsuits in the U.S. related to the Americans with Disabilities Act and website accessibility than there were in all of 2017.[5]

This cultural change can also help businesses empower existing employees with disabilities, as well as help employers draw from an untapped talent pool of more than 10.7 million persons with disabilities in the US alone.[6] Findings from Accenture Research reveal that companies that have improved their inclusion of persons with disabilities over time were also four times more likely than others to have total shareholder returns that outperformed those of their peer group.[7] Estimates suggest that the United States GDP could get a boost up to **US$25 billion** if just **1 percent** more of persons with disabilities joined the US labor force.[8]

To start unlocking this value, organizations that want to thrive tomorrow must begin including a wider array of individual perspectives and skills—especially those of individuals with disabilities—within teams looking at emerging technologies.

Embracing Inclusive Design

Internally, establishing a culture of inclusive design methodologies allows organizations to prototype and evaluate new applications of accessible technologies throughout an organization.

Microsoft Office 365 and Xbox
Look at Microsoft, where product teams have introduced features like accessibility checks in Office 365. These tools can help individuals expedite the process of making documents more accessible to colleagues who are using assistive technologies.[9] Microsoft also announced an accessible and modular Xbox controller to expand the audience able to use its entertainment system.[10] Microsoft is also partnering with external organizations, including the Rochester Institute of Technology, to bring accessible AI solutions into the classroom. One result of this partnership is a speech-recognition model the company built to provide deaf and hard-of-hearing students with real-time closed captioning in lectures.[11]

Microsoft was able to bring accessible technologies to the masses by establishing a training program to help technology teams use inclusive design processes. The company also recognized they could enhance their reputation as a leader in this space by releasing their inclusive design methodologies for other businesses to learn from and use.[12]

Toyota i-Ride
The appeal of inclusive design processes is not limited to any one specific industry. For instance, Toyota's R&D group recognized that autonomous vehicles will usher in a new era of personal mobility for individuals currently unable to drive. Seeing an opportunity to reach more consumers, Toyota prototyped a new kind of vehicle, the Concept-i RIDE.[13] While this car lacks a steering wheel and engine controls, it offers more space for passengers, including individuals with wheelchairs. Exploring autonomous vehicles through an inclusive lens enhances Toyota's reputationas a company attentive to driver and passenger needs. It also positions Toyota to participate in discussions about ways of using streams of data from vehicles to improve roadway design.

Examples like these align to several aspects of a digital transformatizon journey—especially embracing the use of personalization. Businesses are witnessing increased demands for personalized technology products and services. Treating accessibility features as aspects of a business's personalization strategy shifts accessibility from a liability to an opportunity.

Google Gboard
Expanding market share while also improving technology requires businesses to reach out and learn from members of these new audiences—including persons with disabilities. For instance, when designing new products, companies like Google take active steps to ensure that user testing groups include persons with disabilities.[14] At 2018's Google I/O conference, the company announced a Morse code feature to its popular keyboard app, Gboard.[15] The company co-developed this feature with Tania Finlayson, a developer with

cerebral palsy and experience in designing Morse code input systems. Google recognized that efforts to make the Android ecosystem more accessible would be bolstered by bringing first-hand knowledge into the development process.

Fjord VR Experience

Beyond gleaning inclusive insights from user testing and collaboration, some organizations are using immersive training techniques to nurture empathy within their employees. Fjord's Makeshop has developed a virtual-reality (VR) experience to simulate navigating an urban environment in a wheelchair.[16] While initially designed to help first-time wheelchair users adjust to a new sense of mobility, this same training could be used to help researchers—whether or not they have a disability themselves—gain a better understanding of these perspectives.

Dropbox

Similar to Fjord, Dropbox has set up a program to help engineers learn about assistive technologies on which their users rely to interact with Dropbox's product.[17] The program challenges engineers to complete a series of tasks using limited mobility or an artificial impairment. Doing this highlights the arduous nature of trying to use applications that were developed without accessibility considerations. These kinds of experiences can help motivate developers when implementing accessibility features. Following the launch of these events, Dropbox developers implemented several UI adjustments to make their product more usable for everyone.

In the design community at large, regular updates are made to the Web Content Accessibility Guidelines (WCAG), which originally published in 2001. WCAG standards provide guidance to help developers make products more accessible for people with mobility, vision, hearing and cognitive disabilities.[18] These standards exist to help businesses make the web a more usable place for all.

Helping employees form a deeper understanding of the individuals they're serving can help ground people in the reality of their work. Technology surrounds consumers and employees, and failing to design products and services for persons with disabilities will exclude segments of the economy who would otherwise be willing and able to engage with a business.

Inclusive Workplaces and Smart Environments

A 2017 study by Job Accommodation Network, a service from the US Department of Labor's Office of Disability Employment Policy, found that 59 percent of accommodations cost a business absolutely nothing, while the rest typically cost only US $500 per employee with a disability.[19]

Businesses interested in piloting new inclusive technologies often find physical environments, like their workplace, are the ideal setting. As the cost of hardware and sensor systems drops, new technologies like intelligent HVAC systems, voice-recognition devices, eye-gaze input systems and exoskeletal mobility devices give technology groups a bevy of areas to explore.

Today, voice-recognition technology and platforms like Amazon Alexa are enabling businesses to set up intelligent offices that can assist the visually impaired. Amazon's Alexa for Business is giving organizations the tools to build things like voice-activated conference rooms and voice-controlled business applications.[20] While accommodations like these are ideas for the future, accessibility adjustments to other parts of an organization's physical environment may be more straightforward.

Over time, smart environments will leap from inside the office to the outdoors, and influence the rollout of smart city programs that bring wide swaths of urban populations online. Organizations like Alphabet's Sidewalk Labs are already exploring what smart city applications will look like.[21] Applications that rebalance crosswalk wait times based on real-time pedestrian foot traffic or help drivers find available parking spaces all require a sensor-rich environment that can augment the urban experience.

Without consideration toward accessibility, these initiatives, although exciting, might leave some citizens behind. For instance, a recent assessment of smart city initiatives found that fewer than half of the surveyed groups were focusing on delivering accessible solutions.[22] As companies increasingly work with governments to provide citizen services, **it is critical that smart city initiatives prioritize accessibility.** Groups like the Global Initiative for Inclusive Information and Communication Technologies, and World Enabled, have taken steps to fill these gaps by publishing accessibility guidelines for groups developing smart city applications.[23] Using frameworks like this can point R&D groups and others in the right direction for exploring accessible and inclusive technologies in the physical world.

Organizations that lead inclusive innovation inside of their own environments will set the tone for workplaces and cities of the future. If organizations can capitalize on developing smart workplaces—and eventually smart cities—they are better positioned to have their technology and platforms emerge as industry standards.

Take Action: Implementing Accessibility and Inclusive Design Practices

Employ

- Work with your business's HR groups to identify ways of improving hiring practices and developing inclusive candidate pipelines.
- Recruit and hire people with disabilities on your development teams to inform inclusive design decisions.
- Include persons with disabilities at all levels of the organization to learn more about their daily experiences.
- Ensure that other leaders in your organization understand and view persons with disabilities—and what they have to offer your business—through the same imperative lens as other dimensions of diversity.

Engage

- Work with leadership across your organization to identify shared goals for incorporating accessibility and inclusion into your technology design process.
- Use these goals to establish an R&D or experience design group focused on developing inclusive and accessible technology proof of concepts.
- Establish an ethics council that reviews research, code and/or product development for accessibility and other ethical responsibilities

Enable

- Work with leadership across your organization to ensure persons with disabilities are a core priority for the organization's human capital strategy.
- Incorporate empathy-building immersive experiences and accessibility standards awareness into developer training curriculums.
- Investigate scenarios where aging populations or disabled communities using your technology could shift the demographics of your markets.

Empower

- Explore ways of making your business's physical and digital work environment more connected and more accessible. Whenever possible, utilize inclusive design processes when implementing new changes.
- Set a goal to make the digital tools used by your employees to be fully accessible by a target date.
- Use these pilots to further refine your business's understanding of what kinds of inclusive design processes work best for your teams.
- Evaluate your business's ability to comply with current WCAG standards. Develop and implement strategies to meet those standards within a given timeframe.
- Offer mentoring and coaching initiatives, as well as skilling/reskilling programs, so that persons with disabilities can continue to grow and succeed.
- Ensure that persons with disabilities occupy roles at all levels of the organization—including top leadership positions.

Sustainable Inclusion

Cultural shifts in attitude don't happen overnight. Leading organizations recognize the need to foster awareness around the benefits of inclusive design, rather than force it upon their employees. Businesses must embrace accessible technologies and inclusive design processes today if they are going to expand markets be inclusive of the widest possible audiences.

Investments in accessibility and inclusive design training for product design, research and development, or experience design groups pave the way for a larger cultural shift within an organization. A shift toward inclusive processes is also a shift toward more productive and innovative organizational cultures. Studies show that working alongside employees with disabilities helps make non-disabled individuals more aware of how to evolve the workplace to be more inclusive and better for everyone.[24] And having employees with disabilities across departments helps ensure that the products and services that go to market—such as home devices using natural voice recognition—are truly inclusive, driving sales and growth.[25] Alongside a digital transformation, an *inclusive* transformation will ensure businesses are able to deliver technologies that benefit more people than ever before.

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