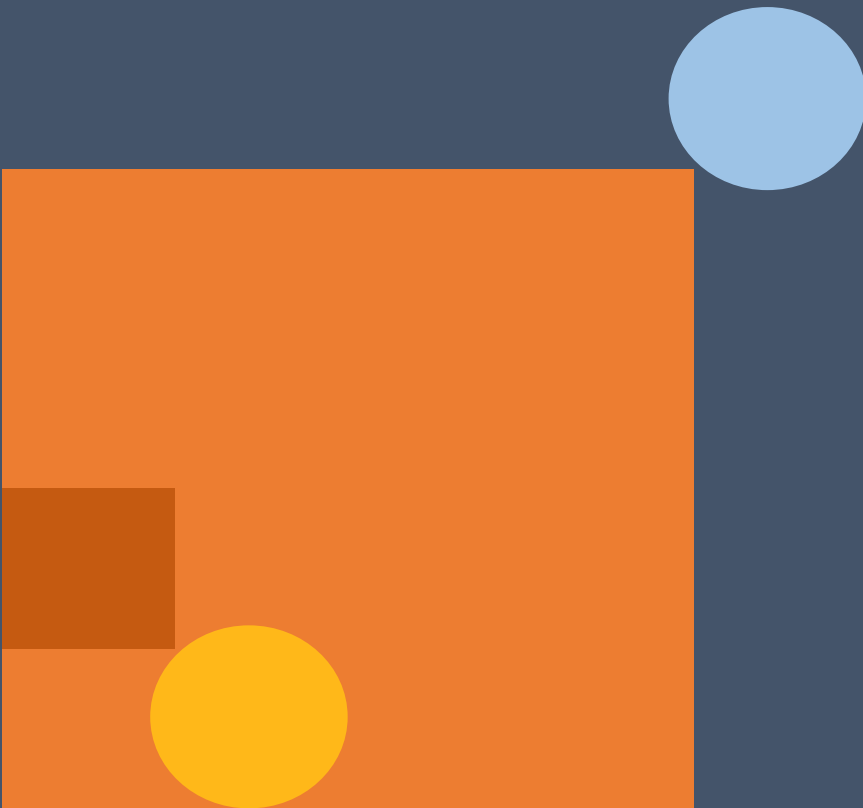# Expanding Employment Success for People with Disabilities

Jim Fruchterman and Joan Mellea, November 2018

Introduction

People with disabilities deserve better employment opportunities. Forward-thinking employers have discovered this community and measured the strong business case of hiring people with disabilities. Not only is it the right thing to do, it makes them money.

The hiring of people with disabilities is not occurring in isolation. The Diversity and Inclusion (D&I) movement is growing in momentum, maintaining strongly that a more diverse workforce is a more profitable, innovative workforce. There is an opportunity to push the majority of employers, who have seen D&I through the lens of recruiting more women and minorities, to include people with disabilities in their vision of a more inclusive workforce.

…the same inclusive leadership behaviors that leverage diversity to drive innovation and market growth can enable managers to support individuals with disabilities.— Harvard Business Review

What would we do if we were tasked with dramatically increasing the hiring of people with disabilities across all industries? There are many challenges to reaching this goal, most of which center on changing human behavior and norms in human resources, hiring managers, corporate leadership, and in job seekers with disabilities. However, given the pervasive use of software and data in modern employment, technology will play a major role. With funding from the Poses Family Foundation, we set out to identify where technology today is a barrier, as well as how it might be a boost to the employment of people with disabilities.

The report's observations and recommendations were based on over fifty conversations with employers, technology vendors, disability experts—who were mainly people with disabilities, and technology experts, especially in artificial intelligence. We concentrated on human capital management (HCM) technology products used for attracting talent to companies, the actual interviewing/hiring process, and retention of employees once hired. We focused our efforts on the market share leaders in each segment. However, it is clearly a very fragmented, quickly changing ecosystem.

Although technology will not be the primary mechanism for the increase in hiring of people with disabilities, it is clear that technology has completely changed the fields of recruiting, onboarding, and retention of employees. Every one of the human/social issues being tackled by this social change movement is reflected in the technology used by employers. As the field progresses in changing human behavior, we collectively need to ensure that the technology tools are not channeling recruiters, managers, candidates, and employees with disabilities back into the old ways of doing things—back to beliefs and practices that discouraged the hiring of people with disabilities.

Reaching this ambitious hiring goal will involve widespread change in the field. Culture and attitudes of recruiters, managers, and human resources professionals need to significantly change. The business case for employing people with disabilities needs to be understood and acted upon. People with disabilities will need to self-identify in greater numbers, overcoming real and substantial disincentives to do so, especially for people with less visible disabilities. An entire field used to thinking of disability as a compliance issue will need to shift to a proactive, pro-disability hiring stance. Finally, disability and

The most powerful lever we have to employ is the priorities of employers when selecting software solutions.

accessibility issues will need to get far more attention than they do today in companies and the workplace. It is incredibly difficult to accomplish widespread behavior and social change when a specific issue is not considered a priority.

We are confident that progress on the larger human issues will drive positive change on the technology front. The most powerful lever we have to employ is the priorities of employers when selecting software solutions. The technology vendors have major incentives to respond to the demands of their customers.

Key Learnings

➢ The hiring process of today looks nothing like fifteen or twenty years ago, and relies heavily on technology. It's not unusual for a resume to be submitted from a mobile site and for that person to either be rejected or scheduled for an interview before a human being ever reads the resume.

➢ Artificial intelligence tools are increasingly widespread and vendors of these products have little understanding of their negative impact on the employment of people with disabilities.

➢ Accessibility continues to be a major issue that also presents numerous barriers to recruiting, hiring, and a productive work environment.

➢ The level of data collection about all of the relevant issues remains rudimentary, limiting many opportunities for improvements.

➢ It is clear that employers see people with disabilities primarily through a compliance lens, and not through a business opportunity frame.

Understanding these five subjects more fully was critical to forming recommendations for ways forward for the field of human capital management technology to better promote the hiring and retention of people with disabilities.

Key Learning #1: Employers are increasingly relying on technology in their hiring practice

It is hard to understate the degree to which recruiting and human resources activities are linked with the technology tools acquired by employers. The ecosystem is full of innovation and new startups, each trying to squeeze out costs while improving results. The field is dominated by major platform players (companies like ADP, Oracle, Workday, IBM, and SAP), whose technology provides the backbone for the human resource function ("Workforce Management") for most companies and includes products that go well beyond human capital management (e.g., Oracle and SAP). Dozens of specialized functions within the human capital process show up as separate products, some of which integrate with the primary platform. The field is full of small new players generating innovative solutions, who are typically either acquired or copied over time.

72% of resumes get rejected by applicant tracking systems before a live person even has a chance to review them—ResumeterPro

Key Learning #2: Artificial intelligence tools are widespread
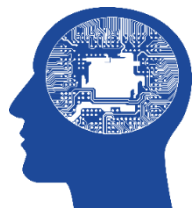
The technology industry has been using artificial intelligence techniques to greatly improve products in many fields, including the human capital ecosystem. They are especially prevalent in screening applicants, but it's safe to say if a task has been identified in the recruiting process, some startup company has promised to automate it with a machine that learns.

Vendors claim their AI systems do not discriminate against underrepresented communities because they don't use prohibited factors such as gender, race or disability in their algorithms, and that machines don't have the unconscious bias that humans have. Unfortunately, these types of claims have been widely debunked with other AI applications, because of common design and implementation errors in these systems that use historical data that tends to perpetuate existing biases.

Unfortunately, when the input data reflects the history of an unequal workplace, we are, in effect, asking a robot to learn our own biases. Garbage in, garbage out, right?—TLNT.com

These problems are widely known in the field of artificial intelligence. In fact, Amazon recently abandoned an internal project to streamline resume screening "after the software consistently downgraded female candidates." While Amazon worked to tweak the algorithms to remove the gender discrimination, **they could not be confident that other biases had not crept in.**

One egregiously discriminatory screening system is the HireVue product which claims their "scientifically validated" algorithms can select a successful employee by examining facial movements and voice from applicants' self-filmed, smartphone videos. This method massively discriminates against many people with disabilities that significantly affect facial expression and voice: disabilities such as deafness, blindness, speech disorders, and surviving a stroke.

HireVue's response to the growing chorus of complaints from both AI and disability advocates has been to suggest that employers allow applicants to opt out in lieu of using the HireVue tool. We don't believe many employers do this (based on similar data collected from the annual Disability Equality Index survey of employers), but even for those that do, it's unclear these applicants are seriously considered. HireVue has also indicated that they plan to go through their five million videos and "flag them if there is some sort of a disability that's present." However, HireVue actually doesn't know which videos feature people with disabilities and it is unrealistic to believe anyone can accurately diagnose disabilities based on a few minutes of smartphone video. Even more worrisome is the possibility that they will take this flawed data, and try to train an artificial intelligence algorithm to spot people with disabilities.

AI is also a serious issue with other products in the HCM ecosystem, specifically personality tests that are increasingly used for entry-level jobs. These software systems use personality characteristics as a signal of job success for specific kinds of roles, even though studies have shown they have no correlation with job performance. These tests tend to disproportionately screen out people with disabilities, specifically mental health and autism.

There are other proxies used in AI recruiting products that disadvantage some people with disabilities, such as gaps in employment. As a result of the negative impact on the unemployed and older Americans, numerous states have passed laws against the use of this factor, and the Obama Administration forbade its use in federal recruiting. Of course, gaps in employment is a proxy that also tends to discriminate against women (connected to childbearing).

It is safe to say that advocates for people with disabilities should be looking at the proxies and the models used by AI vendors for these "hidden" tools of discrimination. In the majority of these tools, employers (and we as technical experts) simply don't know what proxies are being used, how they are applied algorithmically, and what impact they have on people with disabilities. Vendors are quick to shroud these details in mystery, veiled and protected as "trade secrets." However, the likelihood that the impact is generally negative is high, even while the vendors assure us they don't discriminate.

It's important to note that we believe that no creators of these AI-based tools set out to discriminate against the disability community: many of them saw overcoming of discrimination against women and

racial minorities to be a key benefit of their work. We need to channel the same urgency these companies felt in working to overcome these injustices to include combating discrimination against people with disabilities.

It must be also be acknowledged that other artificial intelligence tools have been a boon to people with disabilities: speech recognition and optical character recognition are indispensable to large communities in removing or reducing the need for human assistance. We can imagine many new ways that AI and machine learning could be used in a positive way for recruiting, which are outlined later in this document.

Key Learning #3: Accessibility continues to be a problem

Technology is a two-edged sword for people with disabilities. Advances in assistive technology have been tools of independence for many. However, almost thirty years after the Americans with Disabilities Act envisioned a future without barriers for people with disabilities, new barriers seem to be erected all of the time with newly constructed technology products that are built without attention to accessibility.

We found recently created technology products relevant for employment that do not meet well-known accessibility standards such as the W3C's Web Content Accessibility Guidelines version 2. We had reports of major vendors that claim to meet these standards even as employers observed obvious failures.

Only 55% of DEI businesses have a company-wide external and internal commitment to digital accessibility.— 2018 Disability Equality Index Report

We also heard that internal systems that employees must use to do their jobs frequently are not accessible at all, whether developed by outside vendors or by the organizations themselves. Inaccessible systems are a powerful negative signal to people with disabilities about the priority placed by an organization on inclusion. And, it appears, **the consequences of omitting accessibility seem minimal.**

These persistent accessibility problems connect to a related challenge, that of accommodations.

Vendors of software products, and companies building internal software systems, are building new products all of the time with fresh barriers to people with disabilities. And then complain about the expense of making their product accessible when challenged by advocates—an expense that wouldn't be needed if they had built their products accessibly in the first case.

The "just ask for accommodations" response is problematic, shifting the responsibility for dealing with the barrier from the employer and tech vendor to the person with the disability who is supposed to request assistance for a barrier they shouldn't be facing. For candidates with disabilities who encounter accessibility problems, we lack the following data to know how this actually impacts hiring:

- How many employers actually offer accommodations in place of these tools?
- How often asking for an accommodation de facto rules candidates out?
- How many people with disabilities just opt out of applying when faced with these kinds of problematic tools (and not wanting to ask for accommodations)?
- How many people with disabilities get ruled out by AI tools where accommodations aren't practically an option (their resume gets screened out even before there's a chance to request accommodations)?

For employees with disabilities, we also found that the tech infrastructure for tracking accommodations is severely lacking, with many employers using Excel spreadsheets. There were also challenges in tapping local resources for providing and training employees on accommodations. Disability employment

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specialists typically develop a network of external disability organizations locally, but find it challenging to have the same resources to support the myriad of remote locations for which they are also responsible.

All of the foregoing discussion focuses on failure to meet baseline compliance in accessibility and accommodations. It takes senior leadership prioritization to begin to create an environment where accessibility issues are taken seriously. IT staff need to know that home-grown systems cannot be built that are not accessible to the workforce, just as public-facing inaccessible websites aren't acceptable. **Not surprisingly, tech vendors don't spend much time on requirements and features that their customers and prospects are not requesting.**

Key Learning #4: Lack of data

Gathering more detailed data about the employment of people with disabilities has simply not been a priority in the field, beyond the basic data required to be collected by government agencies. Better data will lead to better understanding, better field-level interventions, and better programs at the vendor and employer level. **Businesses measure what they care about, and manage to what gets measured.**

Of course, this is the reasoning behind the Disability Equality Index. The implied benchmarks in the Index give pro-disability employers a roadmap for change, and supplies important data about a slice of employers that is not available from the larger universe of employers. Of course, it is safe to assume that the situation is far worse in the rest of the employer universe, since the DEI dataset is biased in a positive direction.

Luckily, the human resources field has ways to capture important data about employment without violating the privacy interests of individual people. Instruments such as the broad-based salary survey have been in use for decades to help set pay ranges for specific jobs. They are also critical to understanding social challenges, such as the demonstrated wage discrimination for women versus men in the same jobs with similar backgrounds and experience.

Although we have the benefit of seeing how data has been used to advance the interests of women, disability has issues more in common with other "invisible" minority groups in terms of lower disclosure. Just as many LGBT individuals might choose to not disclose to their employer, many people with disabilities do not choose to identify as a person with disability. For example, ADP did extensive outreach on self-identification and found that while 99.5% of employees responded to the gender question, and 88% answered the ethnicity question, less than 20% of employees answered the disability status question.

Why the disability identification response rate is so low is an interesting question. If we assumed it was purely about concerns about discrimination, that might imply that 80% of the respondents were people with disabilities—which is clearly not the case. What the issues are beyond the fear of discrimination is not well understood. Why do most people think this is a question not worth answering?

Of course, the language legally mandated by compliance requirements is a recognized challenge in self-identification of employees with disabilities. The required language is non-inclusive, off-putting, confusing, and omits references to huge segments of the disability community. It does little to encourage self-id. The data collection systems systematically undercount people with disabilities partly because of this mandated language—and yet we do not know what language might encourage more applicants/employees to self-identify.

The self-identification issue is a huge challenge for reaching the goal of greater employment. A cultural shift which includes many more people with disabilities ("PWDs") owning the label will spur corresponding cultural shifts among employers, tech vendors, and other PWDs.

The LGBT experience is relevant here. It wasn't until self-identification became much more widespread, that employers took the issue of LGBT rights more seriously and became a major factor in policy debates. If employers actually thought that 5-15% of their current workforce had a disability, they might approach this issue very differently.

In the absence of data, we will continue to have employers pursue increasing the hiring of people with disabilities without a roadmap. If an executive is charged with increasing sales in a modern professionally run company, they will have incredible access to information segmenting the market, detailed information on different demographics, and analyses of existing penetration into specific demographics. Asking employers to increase the hiring of PWDs is akin to telling a sales rep to get more customers without any data to guide them.

Complicated by the lack of self-identification, good data is hard to come by. There has been little work understanding the best segmentations to use for our purpose of increasing employment opportunity. We do not believe that programs targeting specific disabilities will lead to significant job growth, so it's not clear that segmenting by disability will lead to the goal we're seeking—though it's important to have for other reasons, such as better accommodations matching. Other segmentations might be more successful both for creating effective programs, but also for determining the most compelling opportunities for increased employment.

Much of the data described above is collected through the lens of employers and their human resources' function. Another missing set of data comes from candidates and employees with disabilities themselves, who are arguably the experts on the topic of employment of people with disabilities. Data is at the core of disability voice: people with disabilities can't influence reform if nobody asks them questions or collects data about their experiences. Without their input, it may be that we're missing important questions we should be asking. Proactively surveying people with disabilities about their recruiting and employment experiences also demonstrates an employer's commitment to inclusion.

A significant increase in the hiring of people with disabilities is a bold goal that cannot possibly be attained with the sparse data available today. Dramatic improvements in data about all facets of achieving the goal will be required before success is conceivable.

Key Learning # 5: Compliance over opportunity

While Diversity and Inclusion (D&I) is a major focus of employers today, more often than not, D&I does not include employment of people with disabilities. Disability is often either ignored altogether by employers, or focused narrowly on legal compliance. We hope that the handful of major companies who have a proactive and positive approach to hiring PWDs are at the leading edge of a wider shift in attitude. But, to the technology vendors building products for employers, this narrow focus means that the **vendors aren't being asked to build proactive D&I-style functionality to enhance the hiring or retention of people with disabilities**. If the software used by managers and human resources staff frames all disability features through the lens of compliance, we shouldn't be surprised if these same key groups are not speaking of people with disabilities as a giant untapped resource for making their companies more competitive.

We heard constantly about diversity and inclusion product offerings that omitted mention of disability or accessibility. When we asked tech vendors specifically about disability, the conversation focused on basic product accessibility and compliance-oriented data collection for the larger platforms.

The omission of disability from the concept of diversity and inclusion, goes well beyond tech vendors. There are entire conferences on diversity and inclusion, which don't have a single session on people with disabilities. A McKinsey report from January 2018 is another illustration of omission: "This latest research reaffirms the global relevance of the correlation between diversity (*defined here as a greater*

proportion of women and ethnically/culturally diverse individuals) in the leadership of large companies and financial outperformance." [Emphasis added.]

Shifting to a proactive, pro-disability stance requires a great deal of thought and work from an employer:

- Job descriptions and employee recruiting content can be full of items that are not inclusive or highly discriminatory, even if they weren't written with that in mind.
- Many organizations use boilerplate job requirements for every job posting without consideration of what's really essential. One organization's boilerplate effectively excluded candidates who are blind, deaf, or in a wheelchair: "Candidate must have the ability to communicate effectively by telephone, read and understand written communication, and generate written communication manually and using a computer. Candidate must also have the ability to work at a desk for 2-3 hours at a time, lift and move documents and supplies not to exceed 20 lbs., and bend to file and retrieve documents."
- We already have a playbook for pro-diversity efforts, based on what employers do with technology to support recruiting of more women or ethnically diverse workforces. There are many recruiting microsites targeted at veterans or other specific communities. With custom messaging designed to appeal to a select audience, these recruiting microsites help employers target select groups. Microsites developed to attract PWDs would signal an employer's commitment and inclusive culture.
- Job placement aggregators like [ZipRecruiter](#) (which promise to place a given job posting on dozens of job sites) offers a special ability to target veteran job boards. Yet they have no similar capability for disability-focused job boards.
- There are training webinars on how to use LinkedIn to target more diverse candidates. All of these tools can be adapted to the opportunity of growing employment for PWDs.

In the last few years, we have seen the growth of disability employment projects framed through an asset-based lens, such as the software industry programs aimed at hiring people on the autism spectrum. These kinds of programs are a positive development in terms of changing attitudes, but these narrow programs alone will not get employers anything beyond minimal improvement in PWD employment numbers. In addition, these narrow programs have the unfortunate consequences of ruling out potential candidates with disabilities who didn't happen to possess the right disability diagnosis, even if they had the skills.

It is clear that greatly expanded employment of people with disabilities will not happen via expanded compliance activities. Employers will need to add people with disabilities to their definition of a diverse workforce, and take advantage of all of what technology can offer to support proactive efforts to increase employment of PWDs.

Recommendations

RECOMMENDATIONS

Our recommendations will not be a surprise to a job candidate with a disability struggling to find a job, or advocates for increased employment of this community. What is different is the strong technology lens we bring to these challenges. Our strategies include:

- Embracing artificial intelligence.
- Boosting accessibility and accommodations.
- Collecting and using data to inform action.
- Guiding employers on the path from compliance to opportunity.

Strategies

Embracing Artificial Intelligence

AI is not going away, but we can bend it to help people with disabilities or at a minimum, reduce discrimination. Our recommendations include:

- Fund/convene active research on the challenges posed by AI—it's increasingly clear to researchers and disability advocates that AI is discriminating against PWDs given the lack of historical data available to include in training sets. With vendors claiming the opposite, hard data/research is necessary to counter these claims and drive change. Research from universities, consortiums, etc. could focus on the following:
  - Reverse engineering leading HCM AI products such as pre-hire assessments, screening tools, and predictive analytics to understand where bias is likely creeping in.
  - Identifying statistical techniques that would minimize impermissible bias.
  - Identifying existing data sets that could be leveraged.
  - Preparing a white paper for employers on "Here's how you know human capital management software AI is not discriminatory."

- The disability field can provide assistance to HCM AI vendors and their customers (employers) by exploring and testing if mitigating strategies actually work. For example:
  - Testing whether opt-out/accommodations are actually being offered? And if so, are any of them effective? Are candidates actually opting out of the application process? Are employers ignoring/discriminating against candidates that request accommodations?

- Employers and the disability field can apply pressure to HCM AI vendors by:
  - Shining a spotlight on products that are discriminatory and unwilling to correct the problems.
  - Openly committing to buying products that don't discriminate.
  - Advocating for accountability from vendors for the choice to exclude. Even more important than explaining why someone is selected as a candidate, is explaining why someone was excluded.
  - Advocating for the addition of PWDs in vendor training sets and audits that confirm non-discrimination against PWDs, including documentation on what "tweaking efforts" were utilized to avoid discrimination.

- There are a number of ways that AI could actually be a boon to PWDs. We hope more tech vendors and nonprofits will explore products that:
  - Identify correlations between type of disability and job satisfaction/success at particular jobs.
  - Better match up accommodations for certain job types and disability/ability combinations.
  - Enable proactive accommodations based on data, rather than reactive responses (i.e., waiting for an employee to fail or to request an accommodation because they are struggling).
  - Help people with disabilities apply for the right jobs, or prompt recommended behaviors like "JobChat," a chatbot currently being prototyped by IBM and Our Ability.
  - Support automation and AI tools for improving job performance by people with disabilities who need additional support tools (i.e., accessibility for unusual problems, executive functioning aids, job coach). These tools could be remote human assistance like
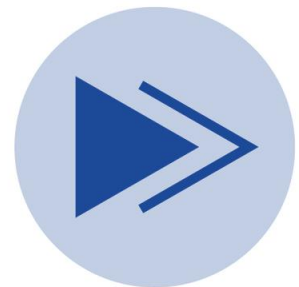
that provided by AIRA, which makes a smartphone capable of delivering accessibility help via video on demand.

- o Target training for new skills.
- o Automate scanning recruiting/onboarding/general employee messaging for discriminatory and non-inclusive messaging. There is already work done in this are around gender discrimination that could potentially be leveraged for disability.
- o Scan job descriptions for requirements that are likely unnecessary. While this may sound trivial, large corporations have hundreds if not thousands of job description templates. We spoke with one HR professional who indicated it was a significant project to manually address this issue.
- o Look for patterns of discrimination in hiring, promotion, retention.

Boosting Accessibility and Accommodations

Accessibility

The first essential step is a solid commitment from both employers and the tech community to accessibility. Tech shines in this area as long as product designers think about the needs of people with disabilities during initial design. Accessibility issues touch not just the human capital management ecosystem, but also collaboration tools, any other commercial products used internally, and most often overlooked—internally developed products.

- For existing products, we recommend:
  - o A thorough WCAG-compliant audit. Deficiencies must be corrected, and commercial vendors who do not comply, must be called out by their customers.
  - o Governance models for technology project accessibility must be codified and adopted to ensure that new releases continue to be accessible. It is not unusual for software that has passed accessibility tests at one point, to become inaccessible as new versions are released without retesting.

- For new products, we recommend that employers require WCAG 2.1 AA compliance and external accessibility validation as a prerequisite in IT procurement specs and internal software systems development.
  - o The disability field could help by offering model procurement language so that this does not become a stumbling block for employers.
  - o We recommend both commercial vendors and internal IT system developers consider usability testing as well when products are in the design phase. Products that are WCAG compliant sometimes still suffer from enormous usability issues for people with disabilities. Best practices in model employers of people with disabilities go well beyond minimum compliance levels. For example, Microsoft talks far more about ideas like inclusive and universal design: making their products more *usable* and including people with disabilities in the initial design process of their products, rather than taking on accessibility compliance at the end. The core argument for universal design is that it makes products better for all users, not just people with disabilities.

In all cases, employers should provide an easy way for people with disabilities to report accessibility issues they are encountering (and, in turn, report these to vendors). Too often, existing problems are not remedied because no one knows about them if a PWD has found a way to work around the issue no matter how cumbersome it may be, or if they've abandoned the application process altogether.

Accommodations
[Studies](#) have shown that 59% of accommodations needed by employees cost absolutely nothing, while the rest typically cost only $500. Nevertheless, many hiring managers remain concerned that an employee with a disability may negatively impact their departmental budget. The disability field is well aware of this concern, and some advocates recommend centralizing of accommodations budgets at the corporate level, to remove this as a consideration by a hiring manager.

The larger issue, in our opinion, is that tracking accommodations is often done in Excel spreadsheets or not at all. Some HCM systems have case management systems that can be used to track accommodations, but many have no capability whatsoever for HR to ensure that employees who need accommodations actually receive them, or if they do, were they effective. As we have indicated before, the HCM vendors prioritize what customers are asking for—tracking accommodations will not be a priority until employers demand it.

Once the data is tracked, it can also be used for analysis, closing the loop to assess the effectiveness of accommodations in terms of job performance and retention. In time, this type of data could be used to recommend better accommodations, predict needs for certain types of accommodations, and potentially support the issue of centralizing accommodations budgets.

The Job Accommodation Network has started to work with IBM in this area, but far more needs to be done (and it seems to be beyond the scope of JAN's current federal funding), which would be essential to some of the machine learning activities mentioned around accommodations.

Collecting and Using Data to Inform Action
More data, more better. It's the trend dominating business: let's ensure the needs of people with disabilities are not buried in a data black hole. We have a number of recommendations:

- There are general statistics about how many PWDs are unemployed, but a lack of useful data about who those people are with respect to segmentation. For employers committed to hiring PWDs, future opportunities could be guided if there was data segmenting populations according to:
  - Disability type, including people who qualify under the ADA as having a disability but who would probably not identify as having a disability
  - Education level
  - Unemployed/underemployed/fully employed
  - Self-identifying/afraid to identify/uninterested in identifying
  - Part-time/full-time/sporadic-time
- There is also a lack of data about PWDs who are employed. We believe that a data aggregator, that could act as a trusted data repository to share anonymized data, would enable employers to discover patterns of discrimination (as well as best practices and opportunities), modelled after the known "salary survey" paradigm.
- Accessible tools should be deployed for collecting data directly from PWDs about their experience, especially discrimination. These tools should be similar to other tools for capturing violations of labor laws (such as wage and working hours violations).
- Tech vendors can play a role in encouraging more collection of data by changing default settings for data collection on disability from off to on (where the employer has to ask for disability functionality to be removed, rather than added). In addition, many HCM products include search functionality designed for searching/reporting according to gender or ethnicity—adding disability to this capability would be a good step.

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- Support for future evolutions of the Disability Equality Index digital accessibility questions is important. It does ask today about WCAG internally and externally although it's not clear that these requirements are fully understood. They don't currently touch on issues such as discriminatory recruiting tools using AI.

- Increasing the number of PWDs that self-identify is hampered by the restrictive form/language of the federal form. Tackling the standard disability identification form language by advocating in Washington, DC for more inclusive and accessible language could help significantly.

- LinkedIn recently announced an expanded commitment to building diversity into their talent products so that employers can recruit, report, and measure based on diversity goals. Using hidden metadata to protect individual's privacy, they could be able to identify and aggregate information about candidate pools and recruiting success. While their first focus is on gender, they intend to expand this eventually to other demographics including disability. We believe this could be a potentially strong incentive to encourage LinkedIn members to self-identify, and a powerful tool for employers looking to recruit people with disabilities. A member's disability status would not be visible on their profile but it could be used to proactively present job opportunities, as well as deliver incredible data on employment and underemployment of people with disabilities if implemented as we would hope.

Guiding Employers from Compliance to Opportunity

While the business case for diversity has been made, disability is still more considered an issue of compliance rather than opportunity. Helping employers make this shift, and piggyback on existing diversity and inclusion programs focused on gender and ethnicity, is a major opportunity for the diversity field.

While many of these recommendations actually address business practices, all of these changes will drive change in tech products that exist or could exist.

- Accelerate the shift by providing tools for employers and HCM vendors to minimize reinventing the wheel. Possibilities include:
  - A guide to employers and HCM vendors about what is friendly vs. non-inclusive language (with examples) for recruiting and job descriptions. Many HCM products include standard templates for job descriptions and interview questions that must be audited so that non-inclusive language is remedied.
  - A guide for employers on how to use inferences for proactive recruiting (e.g., attending Gallaudet probably means the candidate is a PWD; certain groups within LinkedIn; certain skills). This is analogous to practices already widely used for recruiting women and minorities.
  - Tested language that encourages self-id. It is a well-understood issue that most PWDs do not disclose their disability. It's not surprising given the fear of stigma that is only reinforced by *how* the question is asked. Devising language

  Only 21% of employees with disabilities disclose to HR that they have one.—Harvard Business Review

  that counters this fear would go a long way in helping employers and the field collect this essential information—even if only used before the federal mandated language.
  - Tools/language to employers to facilitate microsites for recruiting PWDs.

- Encourage employers to:
  - Ensure that PWDs are part of any unconscious bias training already in place.
  - Audit job descriptions for unnecessary requirements that might rule out PWDs.
  - Audit recruiting materials for non-inclusive language.

- - Ensure that people with disabilities are full participants in the Diversity & Inclusion programs operated by the employer, including programs like Employee Resource Groups.
    - Adopt language that encourages self-id.
    - Default to collecting data about disability whether they are required to report it or not.
    - Develop pro-disability hiring microsites (modelled after those targeted at minority populations such as veterans, African Americans, or Spanish speakers).
- Engage the disability community more broadly to provide feedback.
    - Yelp-like consumer reviews by candidates and employees with disabilities.
    - Constructive complaints website for non-inclusive language, inaccessible technology (including internally developed systems), inaccessible facilities, with the idea that these are bugs to be fixed as opposed to creating the basis for a lawsuit.
    - Secret candidate programs as a means for auditing recruiting systems (combination of vendor supplied products and employer implementation and integration of products).
- Ensure that people with disabilities are included in the new wave of job training/upskilling programs aimed at disadvantaged communities. Many of these programs have an explicit diversity objective which doesn't happen to include disability.

Tech Opportunities

While there are tech opportunities in most of the sections above, we identified other areas that tech could help increase the hiring of people with disabilities. Some of these include:

- Developing referral databases to facilitate more local relationships (nonprofit organizations as well as vocational rehab offices). Benetech is already developing open standards and software to do this cost-effectively throughout the health and human services field, so a model should be available in the coming year.
- Encouraging job board vendors to provide equivalent capabilities for PWDs as exists for veterans with job posting capabilities and job boards.
- Encouraging LinkedIn to add expanded metadata for proactive recruiting of PWDs (as mentioned above), and suggest the rest of the industry follow suit.
- Developing a guided analytics approach to encourage hiring of PWDs (this would go well beyond the DEI) modelled after Home Energy Analytics programs that assist homeowners figure out what to do quickly.
    - Quick questionnaire that provides guidance and assistance.
    - Questions themselves that build awareness about disabilities and accommodations that the user might not be familiar.
    - Concrete recommendations and guidance to drive use.
    - Combination of AI and rules-based systems to automate recommendations.
    - Highlighting of high-benefit/low-cost actions.
- Encouraging employer-rating companies like Glassdoor, Comparably, etc. to include a "bias" score (gender, race/ethnicity, PWD). For example, Comparably is already doing this for women and minorities.

Conclusion

Greatly increasing the hiring of people with disabilities requires large-scale social change. Employers, recruiters, managers, educational and training institutions, employees without disabilities, and people with disabilities will all need to change behaviors, modifying corporate culture. These changes are not easy, but the history of the past century has provided numerous examples of where cultural change increased economic opportunity for traditionally disadvantaged groups, such as women and ethnic minorities.

Changes in legislation helped set the stage for these changes, but ultimately their widespread adoption was encouraged by proof that more inclusive workforces were more profitable ones for businesses.

Technology plays a key role in enabling these longer-term social changes. It can remove barriers, and enable people to become more productive. It also plays a key role in generating the data that helps manage and guide these changes as they continue to evolve and progress.

It's clear that every aspect of the modern recruiting, hiring, and work environment is touched by technology and that if people with disabilities are not considered in the design of these systems, the goal is not achievable. It is unfortunately possible that we could fall even further behind with respect to discrimination.

We suspect that some of the technology products we examined either violate current civil rights laws, or subject employers that use them to risk of litigation. Ignorance of the law will need to fade rapidly as an excuse, as these issues are pointed out by more and more observers and existing litigation is resolved with public commitments to eliminate discrimination powered by software and data.

Employers will need to drive the vendors of these systems to make their products accessible and refuse to purchase products that cannot demonstrate they are not discriminatory. It's by far the biggest leverage for change. As long as employers do not complain and continuing buying these products, the vendors will not address these issues.

People with disabilities also have a big role to play. More self-identification will bring the largest changes, as employers appreciate this community as a major component of their workforce.

Without better data, we will make very little progress and will not be taking full advantage of the power of software and data to guide our path forward. Fundamentally, we need better data to measure whether we've reached our goal: today's compliance framework cannot possibly get us there.

We hope and expect that this report will join other voices advocating for change. Organizations such as Disability:IN, the leading organization of employers dedicated to hiring more people with disabilities, has been helping model progressive behaviors through its Disability Equality Index, awards programs, and case studies. Organizations representing people with disabilities see economic opportunity as a core advocacy and social justice objective. A select few technology companies are already dedicated to this more positive future for people with disabilities through commitments to inclusive and universal design.

Although we did not engage with government, there is a clear opportunity to translate some of the issues we identified into funding, legislation, regulation, and standards. Several of our recommendations advance the hiring goal but have value that can't be captured by industry players. Government often pioneers equal opportunity advancements, and we hope our recommendations affect government program spending, employment opportunities, regular software procurement, and legislation.

We believe strongly in the positive case for employment of diverse and inclusive workforces as a way to strengthen the competitiveness of business and the effectiveness of the public and social sectors. We hope positive incentives will be the primary driver of change, as this is the quickest and most cost-effective path to scale. We expect that building universally and inclusively designed products will become part of the professional craftsmanship narrative for technology professionals: an essential part of how quality products should be built.

The field of human capital management technology tools needs to own disability inclusion as one of their core priorities. We hope that this report is an important milestone in unlocking the potential of technologists to be a force for good in creating more opportunity for people with disabilities.

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