2019 Think Tank Summary Report:
The Intersection of Emerging Technology and Inclusive Employment

Partnership on Employment & Accessible Technology (PEAT)
U.S. Department of Labor's Office of Disability Employment Policy (ODEP)

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Executive Summary

On January 17, 2019, the Partnership on Employment & Accessible Technology (PEAT) hosted an in-person meeting of the PEAT Think Tank with leadership from the U.S. Department of Labor's Office of Disability Employment Policy (ODEP). The Think Tank took place at the Microsoft Innovation & Policy Center (MIPC) in downtown Washington, D.C. PEAT designed this invitation-only event to refine the initiative's strategic efforts and explore key issues related to accessible workplace technology and the future of work. Discussions centered around the goal of removing barriers to employment for people with disabilities (PWD) and enhancing the productivity of all workers.

The Think Tank's 60 participants represented the diverse perspectives of public and private employers, technology companies, universities, and technology end users with disabilities. Attendees engaged in rich facilitated discussions and working groups to share their thoughts and ideas throughout the day. Please see the Appendix for a full list of attendees and the 2019 Think Tank agenda.

Potential Action Steps

Based on an in-depth analysis of insights gathered at the meeting, PEAT distilled a set of potential action steps that PEAT, the U.S. Department of Labor (DOL), and other organizations can use to prioritize emerging and prospective efforts around advancing accessible technology and employment.

Discussions throughout the day pointed optimistically to how accessibility awareness has expanded significantly over the past few years. The majority of the companies in PEAT's network now have digital accessibility policies and programs in place for both their internal systems and the products and services they bring to the marketplace. As one participant noted, they are "moving away from compliance and now are moving towards a mindset of how do we translate accessibility into an asset for our organization."

Despite this promising shift, participants throughout the day raised numerous concerns about the rapid growth of emerging technologies, such as automated vehicles (AVs), artificial intelligence (AI), and the Internet of Things (IoT). One participant shared: "Voice recognition is not there [and] gesture recognition is really not there," referencing a lack of accessibility features that are useful for people with different levels of dexterity, patterns of speech, and even the general population without disabilities. They added: "Language production is really not there for people [who] have disabilities, communication disabilities." Other participants raised significant concerns about privacy

and security, as well as potential benefits that dynamic software and adaptable UI may bring. It is critical, the group concluded, that PWD have representation at the table to ensure that their needs and those of older users are included in the design and development stages.

Participants encouraged ODEP and PEAT to support these goals by increasing their focus on emerging technologies in the workplace through a disability lens—similar to PEAT's previous work on digital accessibility. They recommended that PEAT concentrate on generating and sharing data and resources in these areas to inform policy and to leverage, amplify, and drive such resources to employers to raise general awareness. The discussion outlined many tangible ways that PEAT and ODEP can take the lead in these efforts. These suggestions ranged from organizing multi-stakeholder trainings for future leaders to socializing awareness and collaborations across various government agencies and groups.

Participants also shared their own experiences with the accessible technology skills gap. They encouraged PEAT to continue spotlighting this issue in both higher education (as part of preparation for employment) and work-based learning, such as apprenticeship. Many organizations run trainings and offer resources that PEAT can tap to share with a wider audience. "What we need is scale and we need targeting. And I think that is something PEAT could excel at," noted one participant.

Finally, participants stressed that workplace inclusion efforts are an essential piece of the puzzle. They suggested several ways in which PEAT and ODEP could utilize data and enhance policy to further progress in this area. Suggestions included producing a position statement on degree requirements and job-based learning and creating small business resources for leaders who may lack understanding about providing workplace accommodations.

Potential action steps gathered from the Think Tank include:

A. Emerging Technology Development and Design

1) Infusing Accessibility into Key Emerging Technologies
- Identify emerging technologies (5G, AI, etc.) to ensure that an accessibility lens informs their development.
- Encourage the adoption of open-source software solutions, learn from community involvement, and leverage funding sources.

2) Developing Standards and Policies

- Develop policy standards and resources to facilitate the use of emerging technologies in human resources (HR) and workplace contexts.
- Build a standardized framework for data collection on the employment of PWD, similar to the World Health Organization's International Classification of Functioning, Disability, and Health (ICF).
- Ensure policies across government agencies support accessible technology by collaborating with entities like the National Institute of Standards and Technology (NIST), Federal Communications Commission (FCC), General Services Administration (GSA), and U.S. Department of Defense (DoD).

3) Fostering Multi-Stakeholder Interventions
- Seed a strong multi-stakeholder community through a series of trainings and events to build the technical skills of people with disabilities as accessibility leaders and advocates. The goal is to foster a base of leaders who can create standards and policy dialogues for emerging technologies. This effort is similar to what the World Wide Web Consortium (W3C) has done for web accessibility. Organizers would seek multiple hosts and venues for the trainings and events and adhere to a common set of logistical guidelines:
  - Promote multi-stakeholder convening, planning, and discussions with representation from industry, disability research, different levels of government, and education.
  - Address a wide breadth of emerging technologies, such as AI, virtual reality (VR) and AV.
  - Target a diverse range of themes and issues (privacy, security, credibility).
  - Teach strength of multi-stakeholder negotiation, actual technical expertise, and policy-centered knowledge.

4) Opening Pathways for Businesses to Evolve
- Encourage companies to embrace definitions of diversity that include disability throughout the design process.
- Create user-centric design standards so that all design teams can begin their work with a baseline for accessibility, inclusion, and equity for PWD.

B. The Accessible Technology Skills Gap

1) Curating Top Accessibility Training Resources
- Expand trainings and resources developed by subject matter experts (SMEs) by promoting them to employers. For example, W3C is starting a WAI guide project to produce an international authoritative curriculum on web accessibility.
- Convene employers to provide national feedback on training and course curriculum models, and help DOL/ODEP identify elements that are in demand.

2) Incorporating Accessibility into Curricula
- Work to shorten the gap between the Universal Design for Learning (UDL) framework and Universal Design (UD) practices by ensuring incorporation of accessibility in higher education discussions and teachings about UDL.

3) Branding Accessibility as a Business Asset
- Spearhead an awareness campaign on the impact and market potential of creating products to support access for PWD.

4) Leveraging AI to Inform Role-Based Learning
- Create and promote resources to employers (such as the WAI guide) regarding the use of role-based learning (RBL) for machine learning

5) Promoting Relevant Government Policies and Actions
- Require government technology procurements to incentivize companies to support accessibility requirements in software design and development.
- Take the lead on expanding awareness of technology accessibility needs across relevant agencies.

C. Workplace Inclusion

Participants returned to their small groups and then reported their takeaways to the main group. Their suggestions included steps that PEAT and DOL can take, and best and promising practices to promote to employers.

1) Supporting Businesses through Clear Policies and Goals

- Take a leadership role to convene chief executive officers (CEOs) at varied executive levels and develop an ecosystem of organizations interested in hiring PWD, and addressing employment disparities. Work with PWD to develop

essential workplace skills and place them in job opportunities in which their skills can best be leveraged.

   ○ A CEO forum could kindle public service announcement campaigns that highlight the positive impact that technology brings and how employees with disabilities can positively shape technology advancements.
   ○ Develop resources for both startups and enterprise-level organizations, and carry the workplace inclusion message to mainstream conferences and events. In particular, produce resources for small and medium-sized companies that want to employ PWD. This includes companies that may not know where to start in workplace inclusion efforts, including for enhancing use of supports and accommodations to remove barriers.

2) Honing Inclusive Recruitment and Hiring Strategies

● Develop a policy or position statement on degree requirements, on-the-job training, and work-based learning.
● Work to pass legislation making Rehabilitation Act Section 503 self-ID data that employers collect mandatory to report; this would make requirements similar to those for data from the Equal Employment Opportunity Commission (EEOC).
● Convene a panel with the Office of Federal Contract Compliance Programs (OFCCP) to make the self-ID form more inclusive by improving the language to include people with disabilities by following best practices advanced by other countries.

3) Connecting Employees with Disabilities through Professional and Affinity Networks

● Support the establishment professional associations for PWD to encourage networking, career and peer mentoring, and exposure to new professional fields.
● Guide employers to launch and maintain disability and mental health affinity groups within organizations to provide space for identity affirmation and growth, which leads to retaining diverse employees.

4) Promoting a Meaningful Culture of Inclusion

● Develop a position statement for employers and employees with common language to understand and rank inclusive environments. Specify criteria for what it means for a company to be an inclusive organization.
● Collect data on what makes PWD successful in the workplace by establishing federal policy that companies doing business with the federal government must collect and report data for recruiting, hiring, training, retaining, and advancing PWD. This would involve incorporating these requirements into federal contracting.

5) Looking Ahead and Using Data to Raise Awareness
- Map jobs of the future (identified through resources such as DOL's O*NET database), and work to train a future pool of PWD for technical skills needed for the emerging and future workplace.
- Explore and participate in mainstream initiatives and think tanks focused on the future of work landscape, such as those run by the Aspen Institute and Innovation for Jobs.

In-Depth Meeting Walkthrough

The meeting kicked off at 9:00am with welcoming remarks from ODEP Deputy Assistant Secretary Jennifer Sheehy, ODEP Policy Advisor and Federal Project Liaison Nathan Cunningham, and PEAT Co-Director Josh Christianson. Christianson and PEAT Senior Strategic Consultant Joiwind Ronen facilitated a day of facilitated discussions, break-out exercises, and solutions-oriented brainstorming that asked participants to identify:

1. Trends and issues they are seeing and the primary challenges and opportunities affecting PWD;
2. Work that their organization is performing in this space; and
3. Actions that this community, PEAT, and DOL can take to promote accessible technology and advance employment of PWD.

A. Emerging Technology Development & Design

Topic 1: What are the major technologies, trends, and issues impacting the future workplace? What happens at the intersection of those for PWD? How do we prepare for the future?

Pop-up Speakers

- **Nathan Cunningham, Policy Advisor, ODEP**: Cunningham discussed emerging technologies with implications for accessibility, including: remote-based work, online trainings, user experience and customer experience in interface design, the gig economy, cloud technology's impacts on data collection/analysis, "big data", AI, robotics, augmented reality, IoT, blockchain, and AVs.
- **Judy Brewer, Director, Web Accessibility Initiative (WAI), W3C**: Brewer asked the audience to focus the day's discussions through a lens of authentic inclusion. She emphasized prioritizing that people with disabilities have a seat at the table for the creation, design, and testing of the emerging technologies discussed throughout the day.
- **Steve Ewell, Executive Director, CTA Foundation**: Ewell recapped CES 2019 as a demonstration of how accessibility has become increasingly mainstream. This year's Richard Branson's Extreme Tech Challenge, a general contest, included multiple winners that focused on either accessibility or aging.

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Discussion

Participants worked in small groups to discuss emerging technology development and design. Then they reported their takeaways back to the main group.

<u>Infusing Accessibility into Key Emerging Technologies</u>

- Participants suggested that PEAT could lead efforts to generate the knowledge base on exploiting 5G and other emerging technologies, as well as potential impacts on wayfinding, real-time data transfer, geolocation, and other ways to assist this community.
- Much discussion focused on large gaps affecting emerging technology accessibility. One participant shared: *"Voice recognition is not there [and] gesture recognition is really not there,"* referencing a lack of accessibility features that are useful for people with different levels of dexterity, patterns of speech, and even the general population without disabilities. They added: "Language production is really not there for people [who] have disabilities, communication disabilities." Another group suggested that mainstream companies could do more to create robust trainings for PWD about how to use emerging technologies.
- Multiple discussions raised the need for infusing accessible design in training and integrating accessibility into education for future developers at all levels—from early childhood to postsecondary education. One participant remarked, *"How do we educate early on? How do we engage professionals in that education to prepare as we move forward?"* A prospective solution could involve creating a platform with a standardized framework like Bloom's taxonomy that students could use to develop new applications and leverage best and promising practices.

<u>Developing Standards and Policies</u>

- Discussions highlighted the need for more data and research on policy implications for emerging technology use in workplace human resources (HR), and the need for regulation in this area. This focus would also address potential challenges. For instance, sourcing and screening technologies could inadvertently identify undisclosed information about individuals through pattern finding. It would also examine benefits to making better use of dynamic software and adaptable user interfaces.
- Development standards represented a frequent focus of discussion across multiple groups. One group suggested that the International Standards Organization (ISO) could produce new standards for technology accessibility.

Another group suggested that DOL could create a standardized framework for data collected on employment and retention of PWD that would be similar to the ICF framework. This would ensure validity of data collection to inform better decision making for the community.

- Multiple groups encouraged PEAT to investigate and amplify workon how data and privacy policy meet in relation to disability and technology accessibility.
- Groups suggested taking the lead on raising awareness of accessible technology issues across various government agencies and groups to ensure policies in place support emerging technology for PWD in the workplace. This means connecting with relevant federal agencies, such as the National Institute of Standards and Technology (NIST), Federal Communications Commission (FCC), General Services Administration (GSA), and U.S. Department of Defense (DoD).

<u>Fostering Multi-Stakeholder Interventions</u>

- Groups discussed the need to seed a strong multi-stakeholder community through a series of trainings and events to build the technical skills of people with disabilities as accessibility leaders and advocates. This would ensure they have the skills and knowledge needed to be engaged and represented at the table in decisions related to emerging technologies. The goal would be to produce leaders who can develop standards and policy dialogues on emerging technology—similar to what W3C has done for web accessibility. Organizers should seek multiple hosts and diverse venues and promote events with a common set of logistical guidelines:
  - Promote multi-stakeholder events for convening, planning, and hosting discussions with representation from industry, disability research, different levels of government, and education.
  - Address a wide breadth of emerging technologies (AI, VR, AV, etc.).
  - Target a diverse array of themes and issues (privacy, security, credibility, etc.).
  - Teach strength of multi-stakeholder negotiation, actual technical expertise, and policy knowledge.
  - Attendees would include representation from the business community, disability advocacy organizations, and government. The specific focus would be on recruiting people with disabilities.
- Multi-stakeholder methods should include:
  - Promote intersectionality within and outside of the disability community across racial, cultural, gender, socio-economic, and other dimensions.

- ○ Ensure authentic inclusion of people with disabilities by relying on multiple approaches for facilitating inclusion in the events, including for supporting full accessibility (i.e., cognitive, sensory, physical access).
  - ○ Customize these trainings and events to the host culture and also localize some of discussions in diverse geographical areas.
- One group focused on disconnects between mainstream tech companies and assistive technology makers. They identified ways to bridge this divide through the encouragement and adoption of open-source software and deep involvement in the community. Collaborators would ideally include people with disabilities participating as developers, designers, managers, and contributors within companies.

Opening Pathways for Businesses to Evolve

- One group noted, *"The need for business cases for small businesses and large businesses can be very different. And what we need are opportunities for testing and trialing intervention solutions for the workplace and to demonstrate that they are effective, that there's a positive return on investment, and that way there are companies that can judge whether—what reasonable accommodation is. They'll actually have a real world benchmark of what reasonable accommodation means for an employee."*
- Groups frequently indicated that companies needed encouragement to:
  - ○ Embrace an expansive definition of diversity that includes disability throughout the design process. This means bringing PWD to the table, but also field experts, SMEs, and individuals who are familiar with different frameworks.
  - ○ Create user-centric design standards so that all design teams can begin their work with a baseline for accessibility, inclusion, and equity for PWD.
  - ○ Develop customized frameworks and design standards for specialized fields, including medical and educational fields.
  - ○ Generate personas for individuals for different use cases or commonly identified user scenarios for PWD.
  - ○ Focus on the development of ethical AI through the use of personas to allow individuals to do their best at work.

B. The Accessible Technology Skills Gap

Topic 2: What is the state of the current technology skills gap and what progress can be made? How are key partners working to close the gaps and what can we do to help?

Pop-up Speakers

Joiwind Ronen, PEAT: Ronen shared an overview of how PEAT has addressed findings and recommendations from the last Think Tank in December 2017. In partnership with Teach Access, PEAT surveyed member companies about their experiences with the need and availability of talent with accessible technology skills and released a resource on the [Accessible Technology Skills Gap](). PEAT has also enhanced partnership efforts to explore inclusive apprenticeship as an approach toward building accessible technology skills. PEAT has spotlighted that apprenticeship enables companies to quickly train and recruit talent with the technical skills they need, while also diversifying their workforce. PEAT also supported the growth of Teach Access to foster further integration of accessibility into standardized curricula for future web developers.

Kate Sonka, Assistant Director of Academic Technology, Michigan State University: Sonka provided a brief history of Teach Access, its beginnings, and the early focus on infusing accessibility requirements into job descriptions. She reviewed activities and milestones that Teach Access has achieved in the last year, including:
- Increasing college students' exposure to industry experts through a robust guest lecture program.
- The Study Away program that has proven successful as a vehicle for bridging the gap between students and private industry and exposing students to professionals in the field of technology who can speak on the importance of accessibility in their day-to-day jobs.
- Faculty grants dispersed to professors enabled them to develop new curricula or update existing curricula to include or expand technology accessibility as a key learning objective. This activity has resulted in about 2,000 students learning more about technology accessibility.
- Working with accreditation bodies to foster the integration of accessibility into mainstream courses in design, computer science, engineering, human-computer interaction, user experience, industrial design, usability, ergonomics and related fields.

Cathy Bodine, Associate Professor, Department of Bioengineering, University of Colorado: Bodine discussed her department's plans for building the "next generation of bioengineering folks who actually can go to work and create technology that works for people with disabilities." They are launching a new master's degree program focusing on inclusive technology and a related undergraduate track that includes a core course in accessibility (open to all engineering students). They increasingly stress an

interdisciplinary approach that places engineering students in the clinic and clinicians in the classroom with engineers. This ensures that students can learn how to collaborate with and focus on the needs of PWD. It also means that PWD can find themselves fully included in these roles.

Anil Lewis, Executive Director of Blindness Initiatives, National Federation of the Blind (NFB): Lewis described how NFB now offers Accessibility Inclusion Fellowship grants to professors and teachers in the IT space and higher education, with an emphasis on outreach to community colleges. This work similarly focuses on how to help instructors integrate accessibility in their existing curriculum. They also offer transformational seminars to companies. The seminars provide an overview about blindness and the nonvisual methods of obtaining information with topics such as Braille, independent travel, and other alternative skills of blindness, including access technology. One company wanted to become more aware of the impact of accessibility on their web design processes. As a result, they became more competitive when bidding on federal contracts, and it also fueled their creativity generally: "By making them aware of the overall impact their work has on blind and low vision individuals. The developers that were doing the coding were now motivated by other means. They were learning [that] the skill set they were taught through the group's implementation made them better at what they do and made their website experience better for everyone."

Discussion

Participants discussed these issues and shared the following key takeaways.

Curating Top Accessibility Training Resources

- Participants emphasized a growing demand for integrating technology accessibility into job descriptions, but "there's not a lot of places throughout where somebody can get, you know, good training beyond maybe inside of a corporation or individualized." One participant expressed a wish for solid affordable courseware suite or online platforms to support professional development on technology accessibility and make it easier for employees to access.
    - Teach Access is working to address this issue by indexing and curating top resources, such as resources by W3C and Microsoft.
    - W3C is developing a Web Accessibility Initiative (WAI) guide, an international authoritative curriculum on web accessibility and other resources that would be freely available for anyone to use as a foundation

for teaching and developing courses that integrated technology accessibility focuses.

- ○ NFB offers seminars for organizations to help them understand the lived experience of being blind and related technology access needs.
- Amplify trainings and courses developed by SMEs in the room by promoting them to employers. For example, W3C is starting a WAI guide project which will offer an international standardized curriculum on web accessibility. This guide will be freely available as a foundation for teaching technology accessibility and developing courses.
- Convene employers to generate national-level feedback on training and course curriculum models. Seeking direct feedback from employers could help DOL/ODEP identify in-demand elements.

Incorporating Accessibility into Curricula

- Discussion highlighted that awareness of technology accessibility is growing among higher education institutions, which represents a significant improvement. Schools increasingly understand that they need to collaborate directly with PWD leaders to incorporate this focus into their curricula and get students energized and engaged.
- Several participants noted the gap between the Universal Design for Learning (UDL) framework and accessibility needs. They suggested collaborations with CAST to integrate accessibility needs more broadly into UDL curricula and components.

Branding Accessibility as a Business Asset

- One participant noted, *"We're moving away from compliance and now are moving towards a mindset of how do we translate accessibility into an asset for our organization? And that is a huge change really for the economy—for private and public sector.."*
- One participant similarly noted that the accessibility camps and meetup groups he runs in Silicon Valley have a steady influx of new participants; 80 percent of participants are at the beginner level, or they are just starting to focus on accessibility. People have interest in focusing on this area, but *"a lot of it comes down to the fact that people are just not given the time to put accessibility in, in the work that they're doing."*
- Companies are starting to embed accessibility into design thinking, such as through the inclusion of accessibility language into basic design camps.

- One participant noted, *"Accessibility has reached the senior team leadership level, but I think there's still a disconnect between what we're doing technologically in this room and the broader reach to accessibility in the boardroom and executive leadership levels."* This means engaging executive leadership and prioritizing accessibility at all levels.
- Several companies have moved their accessibility leadership team from their engineering to design units, thus embedding accessibility into design thinking throughout the company culture.
    - Another company supports accessibility in three areas: Human Capital (compliance areas), Design and User Testing, and Remediation. They are working to bring those groups together into one cohesive global accessibility group.
- PEAT should spearhead an awareness campaign on the impact and market potential of creating products to support access for PWD.

Leveraging AI to Inform Role-Based Learning

- Role-based learning (RBL) can facilitate development of technology accessibility skills. Designer, developer, and tester roles have diverse duties, and their requirements for education on accessibility can vary widely. Companies can simplify this pursuit by defining the role and then using AI and related approaches to curate the content in real time via a role-based definition. Incorporating machine learning into RBL efforts represents a prospective project for this focus.
    - The WAI Guide would likely be role-based with different modules available, including a module focused on managers.
    - PEAT should drive technology accessibility employer resources. One participant noted, *"We have no way to get it directly to the kind of channels that you work with... what we need is scale and we need targeting. And I think that is something PEAT could excel at."*

Promoting Relevant Government Policies and Actions

- Require government technology procurements to incentivize companies to support accessibility requirements in software design and development. To align with Section 508, the federal government should insist that any software be purchased from a company that meets accessibility standards. In concert with this idea, a participant stated, *"Whatever it is that you're buying, a company should meet a certain bare minimum accessibility requirement in order to be a supplier to the federal government."*

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- ○ This is only a piece of the puzzle. Many companies that need to up their accessibility don't sell to the government.
  - ● ODEP could take the lead on expanding awareness of technology accessibility needs across relevant agencies. They already work closely with federal partners, such as the U.S. Department of Commerce, on inclusive apprenticeship.

C. Workplace Inclusion

Topic 3: What are workplace inclusion trends, including apprenticeship, that you are seeing in your organization and in the marketplace? What are the best practices and coming challenges and opportunities? How do we make progress in more workplace inclusion?

Pop-up speakers

Lisa Wadors, Program Manager, Benetech: Wadors noted that while the diversity and inclusion movement is accelerating, a large gap remains for people with disabilities in the workforce:
- ● She emphasized an increased dependency on workplace technologies that frequently are not accessible or are biased against PWD, such as big data analysis of personality traits and resumes. A facial recognition technology may also, for instance, discriminate against a person with a stroke.
- ● Supporting general accessibility in the workplace continues to be an issue. Many employers remain unaware of how best to provide accommodations. They also do not recognize that most accommodations are without cost or low cost.
- ● A dearth of reliable data exists to help experts and employers understand this space.

Lori Golden, Abilities Strategies Leader, EY: Golden noted that the nature of work today is increasingly remote-based, less centralized, and less place-based, which can make acculturation and community building within the context of the workplace more difficult. She also noted that work is becoming less hierarchical, more collaborative, and more driven by strategic partnerships. There is a growing emphasis on continuous learning that has created a more competitive evolving workplace.

Jennifer Carlson, Executive Director, Apprenti: Carlson emphasized that 2.8 million technology jobs remain unfilled in the U.S. She highlighted concerns for the lack of diversity in the technology sector and the difficulty companies face in retaining workers.

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This scarcity could represent a driving force to build a business case for employers and other institutions to focus on accessibility through an investment in training and education—particularly for new collar industries. Apprenticeship is one solution to achieve this goal, but companies can also shift to make concerted efforts to recruit, retain, and retrain diverse candidates—which some companies are starting to realize. She called on Think Tank participants to "pull together not only the resources but the means of identifying and setting out all of that kind of information to show companies not only why they make the business case but the how to make the business case and to show them the way and the path that's already been brought before them so that they're not having to start from scratch*."*

Discussion

Participants returned to their small groups and then reported their takeaways to the main group. Their suggestions included steps that PEAT and DOL can take, and best and promising practices to promote to employers.

Supporting Businesses through Clear Policies and Goals

- Create resources focused on small and medium-sized companies that want to employ PWD, but may not know where to start, particularly for supports and accommodations.
- Take a leadership role in convening CEOs at diverse executive levels and developing an ecosystem of organizations interested in recruiting and hiring PWD and addressing major job disparities for the current future workplace. Collaborate with PWD to develop essential work skills and support placements into employment opportunities where these skills can best be leveraged.
  - For instance, a CEO forum could spark campaigns to produce public service announcements that highlight the positive impact that technology brings and how employees with disabilities can positively shape technology use.
- Promote accessibility regulations beyond Rehabilitation Act Section 508 to include products in the private sector.
- Emphasize conversations about creating an environment for retaining PWD talent, rather than simply hiring/recruiting.
- Ensure procurement practices for software integrate accessibility requirements and enable staff members with diverse abilities to assume these roles throughout the company or add the duties to their current role.
- Increase accountability for the vendor community, including for their documentation and remediation plans.

Honing Inclusive Recruitment and Hiring Strategies

- Develop a policy or position statement on degree requirements, on-the-job training, and work-based learning. Companies such as EY and IBM have eliminated degree requirements in line with a growing emphasis on continuous learning to support a more competitive evolving workplace.
- Recruit from non-traditional sources, such as by using virtual recruiting and leveraging partnerships with student services offices at colleges and universities. One participants' company noted that they have developed recruiting videos that use American Sign Language.
- Evaluate the effectiveness of recruitment efforts and review historical trends to identify hot spots for recruiting. Consider quality—not just quantity—in hiring and recruitment efforts, and make sure to track progress to identify what does and does not work well.
- Consider blind interviewing to level the playing field for PWD.

Connecting Employees with Disabilities through Professional and Affinity Networks

- Spur the establishment of professional associations for PWD to encourage networking and career and peer mentoring and exposure to new fields and opportunities.
- Guide employers to launch and maintain disability and mental health affinity groups within organizations to provide space for identity affirmation and growth, which leads to retaining diverse employees.

Promoting a Meaningful Culture of Inclusion

- Develop a position statement for employers and employees with common language to understand and rank inclusive environments. Specify criteria for what it means for a company to be an inclusive organization. Simply employing PWD and individuals from other under-represented groups in an organization does not mean that a business is fully inclusive.
- In the workplace, encourage meaningful micro-interactions that can seed large-scale policy and culture shifts. One participant's company provided microwaves at different height levels, and provided braille labels for coffee makers in their community kitchens.
- Develop HR-driven, company-wide policies for reasonable accommodations, and emphasize that workplaces can universally empower all workers to drive greater performance and productivity. Teleworking and access to virtual private networks

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(VPNs) has proven instrumental to the success of PWD in workplaces, but policies supporting these practices are typically manager-specific rather than company-wide. Companies should also state their commitment to these practices in job descriptions.
- Think about how innovative software solutions can drive workplace inclusion.

<u>Looking Ahead and Using Data to Raise Awareness</u>

- Address major gaps in availability of data—particularly reliable data on technology accessibility and employment barriers—to help experts and employers better understand this space.
- Explore and participate in mainstream initiatives and think tanks focused on the future of work landscape, such as those run by the Aspen Institute and Innovation for Jobs.

Prioritization of Core Ideas

Participants ended the day by returning to main group to identify and prioritize discussions for several key focus areas. They gathered in self-selected groups to specify tangible actions that ODEP and PEAT could take in the next few years to yield the greatest impact.

A. Core Ideas and Final Pitches

1. Work to pass legislation making Rehabilitation Act Section 503 self-ID data employers collect mandatory to report—similar for existing requirements for EEOC data. This will lead to more data that we can utilize.
2. Convene a panel with OFCCP to make the self-ID form more inclusive by enhancing the language to include people with disabilities. Leverage best practices from other countries that have previously achieved success in this area, such as the United Kingdom.
3. Create a standardized framework for data collected on employment of PWD and retention that is similar to the ICF framework. This would ensure validity of data collection to inform better decision making for the community.
4. Support the generation of data on what makes PWD successful by establishing federal policy that federal contractors must collect and report data for recruiting, hiring, training, retaining, and advancing people with disabilities. These companies should also be required to have a stated policy on how they encourage workplace inclusion for PWD.
5. Seed a strong multi-stakeholder community through a series of trainings and events to build the technical skills of people with disabilities as accessibility leaders and advocates. The goal is to create leaders who can produce standards and policy dialogues on emerging technology—similar to what W3C has achieved for web accessibility. This would ensure they have the technical skills and knowledge to be engaged and represented at the table for decision making on emerging technology. Organizers should seek multiple hosts and diverse venues and promote events with a common set of logistical guidelines:
   a. Promote multi-stakeholder convening, planning, and hosting of discussions with representation from industry, disability research, different levels of government, and education.
   b. Address a wide breadth of emerging technologies (AI, VR, AV, etc.) and their coming impacts on PWD.

c. Address a diverse array of themes and issues (privacy, security, credibility)
　　　d. Teach strength of multi-stakeholder negotiation, actual technical expertise, and policy knowledge
　　　e. Attendees would include representation from corporate entities, disability advocacy, and government. The specific focus would be on recruiting people with disabilities. Approaches could include:
　　　　　i. Promote intersectionality within and outside of the disability community across racial, cultural, gender, socio-economic, and other dimensions
　　　　　ii. Ensure authentic inclusion of PWD by tapping multiple approaches for reaching out for inclusion in events, including to support accessibility in all dimensions (i.e., cognitive, sensory, physical)
　　　　　iii. Customize these trainings and events to the host culture and also localize some of discussions in diverse geographical areas.

6. Encourage the adoption of open-source software and sustained involvement in the community (both in the creation and use of the technology), particularly for identifying funding sources.

7. Map jobs of the future (identified through resources such as the DOL's O*NET database), and work to train a future pool of people with disabilities with these skills.

8. Take the business case for accessibility in all facets to CEOs at *mainstream* conferences and events. Embed key messages for technology accessibility and create materials for learning and sharing tailored to their audiences. The approaches should be tailored based on company size:
　　　a. Startups: Develop a toolkit for accessibility awareness focused on the gaps in technology accessibility, including via presentations from PWD about their lived experiences
　　　b. Enterprises: Highlight distinct attributes and skill sets that people with disabilities bring to the workplace and how companies lose valuable talent sources when they do not ask for more resources and information about recruitment and hiring of people with disabilities.

B. Concluding Remarks and Reflections

Deputy Assistant Secretary Jennifer Sheehy closed the day by sharing her appreciation for the expertise, input, and energy that participants brought to these conversations—particularly those who traveled long distances to attend in person. She

noted, "It is remarkable to me to see so many leaders that I respect, admire, and am in awe of in one room."

Following the event, participants emphasized the importance of the day's discussions and takeaways for their own activities, and they highlighted next steps:

- "An impressive meeting of leading minds in the field of accessibility today. This collaborative initiative provides an excellent environment to discuss real-world solutions to accessibility problems with participation and support by those with the charter and political know how to transform them into policy (in some form) to address the challenges of digital inclusion / accessibility in the workplace and in the public domain."
- "Once again the PEAT team convened a group of leaders to produce a road map to effective initiatives."
- "This was an inspiring event with a real open-mindedness to find impactful solutions. I volunteered to help drive action on one of our big ideas and I encourage PEAT to follow up and engage participants to actually pursue some of the great ideas generated at this event."
- "The Department of Labor has an opportunity to make an impact if they are willing to focus resources and leverage the many available partners."
- "These conversations are imperative to getting the thought leaders in the industry onto the same page, so when we move into larger circles, we present a united front with clear objectives and plans for bringing digital accessibility and assistive technology into all kinds of workplace environments successfully."
- "The PEAT Think Tank is a valuable coming-together of experts from diverse backgrounds and responsibilities, all dedicated to improving and exploiting technology to improve the lives of people with disabilities. The ideas that emerged from the meeting were practical and implementable and promise to have tangible beneficial effects in the short- and long-term."
- "PEAT and DOL do an amazing job to bring stakeholder and experts with diverse backgrounds and opinions to solve disability employment and workforce issues."
- "This event epitomizes stakeholder engagement, and very efficiently reveals next period goal areas that will increase employment of people with disabilities and foster focused digital accessibility innovation."

C. Continuing the Momentum: A Model for Future Action

After the Think Tank, the PEAT team worked diligently to compile this summary report. One participant, Judy Brewer, shared a follow-up action plan regarding the idea to develop inclusive trainings on digital accessibility for emerging technologies. This plan

serves as a model for next steps that the PEAT team can take in collaboration with Think Tank partners. The text of this plan appears below.

Inclusive Training on Digital Accessibility for Emerging Technologies

Report of break-out session at PEAT 2019 Think Tank, as reported by Judy Brewer, Director, Web Accessibility Initiative, W3C/MIT.

Goal:
Capacity building: help build the next generation of disability leaders and allies who can engage effectively in development of digital accessibility for emerging technologies.

Objectives:
1. Increase awareness among multiple stakeholder groups, especially including people with disabilities, of the importance of digital accessibility across a broad range of emerging technologies.
2. Increase the ability of multiple stakeholder groups, especially including people with disabilities, to engage effectively on digital accessibility issues through organizations involved in the design and development of emerging technologies.

Context:

The pace of technology innovation impacting people's lives is extremely rapid, and too often people with disabilities are not at the table. Designers, engineers and developers may be unaware of the requirements of people with disabilities and older users, and/or because of their unfamiliarity with people's requirements may make assumptions that do not match people's requirements or may not comprehensively address people's requirements. Many people with disabilities may be insufficiently aware of the time-sensitive design and development industry windows for new technologies; may have less opportunities to learn about and engage in development of cutting-edge technologies; and/or be less familiar with effective practices for promoting and ensuring accessible design and development of technologies.

Approach:

Promote training events, following a specific set of criteria such as those below, to be hosted by diverse types of hosts, for instance AAAS, NFB, CTA/CES, corporations, government agencies, and universities. Encourage these hosts to customize this framework to match the culture of their communities.

Proposed characteristics of training events:
1. Promote **multi-stakeholder convening, planning and discussions**, including representatives of industry, disability communities, research, different levels of government, and education, with a particular focus on including people with disabilities.
2. **Address the breadth of emerging technologies**, including artificial intelligence, virtual reality, voice recognition, autonomous vehicles, 5G, digital publishing, digital assistants, Internet of Things/Web of Things, and more.
3. **Address a breadth of cross-cutting themes**, including accessibility, privacy, security, and credibility.
4. **Include training on disability policy, advocacy, standards and guidelines development, and multi-stakeholder negotiation.**
5. **Promote intersectionality, within and outside of the disability community,** including across racial, cultural, and gender issues.
6. **Ensure authentic inclusion of people with disabilities in all events**, relying on multiple approaches to recruiting and welcoming divers participants. Ensure that all events are accessible, in all dimensions.
7. **Customize trainings and events to the culture of the event hosts**. Localize some of the discussions geographically, by region as well as urban/rural and including under-resourced communities.
8. **Use a train the trainer approach to amplify the event hosting**.

Proposed role for PEAT:
- Help with differentiating principles from actionable ways to pursue those principles;
- Help define specific outcomes to aim for;
- Articulate the framework in a way that will appeal to very diverse types of hosts – advocacy organizations, corporations, science associations, government, etc.;
- Convene and moderate at least two events;
- Refine the framework and promote different hosts using it in multiple instances.

Appendix

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Agenda

9:00-10:15am Opening and Introductions
- Opening Remarks: Jennifer Sheehy
- Introduction of PEAT/Think Tank: Nathan Cunningham
- Introductions & Agenda & PEAT Update: Josh Christianson
    - Updates as informed by last year's Think Tank
    - Agenda overview
- Participant Introductions

Break

10:30-12:15pm Emerging Technology
What are the major technologies, trends, and issues impacting the future workplace?
What happens at the intersection of those for PWD? How do we prepare for the future?

- 10:30-11 Pop-up speakers
    - Nathan Cunningham, DOL
    - Steve Ewell, CTA Foundation
    - Judy Brewer, W3C

- 11-11:45 Small Group Discussions
    - What other emerging trends and issues are you seeing?
    - What are the primary challenges and opportunities for PWD?
    - What can you/your organization, this community, PEAT and/or DOL do to prepare for the future?

- 11:45-12:15
    - Report outs
    - Large group discussion

Lunch

1:30-2:15pm Accessibility Skills Gap
What is the state of the current technology skills gap and what progress can be made?
How are key partners working to close the gaps and what can we do to help?

- 1:30-1:45 Pop-up speakers:
    - Joiwind Ronen, PEAT
    - Kate Sonka, University of Michigan
    - Anil Lewis, National Federation of the Blind

- 1:45-2:15 Large Group Discussion
    - What are the primary challenges and opportunities?
    - What can you, this community, PEAT and/or DOL do to close the gap?

2:15-3:30pm Workplace Inclusion
What are workplace inclusion trends, including apprenticeship, that you are seeing in
your organization and in the marketplace? What are the best practices and coming
challenges and opportunities? How do we make progress in more workplace inclusion?

- 2:15 - 2:45 Pop up speakers
    - Jennifer Carlson, Apprenti
    - Lori Golden, EY
    - Lisa Wadors, Benetech

- 2:45 - 3:10 Small Group Discussions
    - What other trends and issues are you seeing?
    - What are the primary challenges and opportunities for PWD?
    - What can you/your organization, this community, PEAT and/or DOL do to
      create a more inclusive future?

- 3:10-3:30
    - Report outs
    - Large group discussion

Break

3:45-5:00pm Prioritization and Close

- 3:45-4:00 Prioritization
  - Of the issues raised today, where can we have the biggest impacts?
  - Group prioritizes issues into 3-6 focus areas
  - Break into self-selected groups around these issues

- 4-4:30 Small Groups
  - How would the group address the priority issue identified
  - What can ODEP and PEAT do in the next few years to address the issues we've discussed today?

- 4:30-5:00 Reports and Next Steps
  - Groups report out to ODEP
  - Questions and reactions from ODEP

List of Participants

Charles Adams, Senior Technical Accessibility Architect, Oracle

Lori Adams, Veterans Policy Director & Senior NLx Advisor, National Association of State Workforce Agencies (NASWA)

Jennison Asuncion, Engineering Manager, Accessibility, LinkedIn

Matt Ater, Vice President, Vispero

Steve Bauer, Program Officer, National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR)

Cathy Bodine, Associate Professor, Department of Bioengineering, University of Colorado

Rod Bradley, Diversity Recruitment Program Manager, IBM

Judy Brewer, Director, Web Accessibility Initiative, W3C/MIT

Mary Bougher, Executive Vice President, Operations, Bender Consulting Services, Inc.

Jennifer Carlson, Executive Director & Co-Founder, Apprenti

Josh Christianson, Co-Director, PEAT

Henry Claypool, Technology Policy Consultant, American Association of People with Disabilities (AAPD)

Nathan Cunningham, Policy Advisor, Office of Disability Employment Policy (ODEP), Department of Labor

Ted Drake, Principal Engineer, Accessibility, Intuit

Dan Ellerman, Inclusion and Diversity Senior Manager, Accenture

Steve Ewell, Executive Director, Consumer Technology Association (CTA) Foundation

Jillian Fortin, Development & Communications Director, Knowbility

Larry Goldberg, Senior Director, Accessible Media, Verizon Media

Lori Golden, Abilities Strategy Leader, Ernst & Young

Mindy Greenberg, Accessibility Program Manager, Google

Roxann Griffith, Regional Veterans Outreach Coordinator, Department of Labor

Angel Harlins, Project Management Consultant, PEAT

Martha Jackson, Assistant Commissioner Employment and Business Development, NYC Office of the Mayor

Carolyn Jones, Senior Policy Advisor, Office of Disability Employment Policy (ODEP) Youth Policy Team, Department of Labor

Ananya Kassahun, Sr. Accessibility Solution Engineer, AT&T

Andrew Kirkpatrick, Head of Accessibility, Adobe

Jeff Kline, Program Director, Statewide EIR Accessibility, State of Texas

Vinz Koller, Senior Strategist for Capacity Building, Social Policy Research Associates

Jonathan Lazar, Professor, iSchool, Associate Director, Trace Research & Development Center

Kathleen Lee, Extension Associate, Cornell Yang and Tan Employment and Disability Institute

Christopher Lee, Managing Director, International Association of Accessibility Professionals (IAAP)

Anil Lewis, Executive Director of Blindness Initiatives, National Federation of the Blind (NFB)

Patrick Mannix, Chief of Staff, Office of Disability Employment Policy (ODEP), Department of Labor

Megan Mauney, Principal Product Manager for Accessibility, HR Department, Amazon

Daniel Nichols, COO, Candidit

Sassy Outwater-Wright, Executive Director, Massachusetts Association for the Blind and Visually Impaired

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Lauren Rabb, Consultant, Ethos Strategic Consulting

Antonette Rogers, Account Executive, Microsoft

Michael Reardon, Supervisory Policy Advisor, Office of Disability Employment Policy (ODEP), Department of Labor

Patrick Romzek, CEO and Founder, Three Talents Advisors

Scott Robertson, Policy Advisor, Office of Disability Employment Policy (ODEP) Youth Policy Team, Department of Labor

Joiwind Ronen, Strategic Consultant to PEAT, Ethos Strategic Consulting

Michael Schmidt, Digital Advisor, Microsoft

Eric Seleznow, Director, Center for Apprenticeship, Jobs for the Future

Ather Sharif, Founder and Researcher, EvoXLabs

Jennifer Sheehy, Deputy Assistant Secretary, Office of Disability Employment Policy (ODEP), Department of Labor

Alexander Schulte, Consultant, Ethos Strategic Consulting

Kate Sonka, Assistant Director of Academic Technology, Michigan State University

Daniel Sullivan, Vice President, AudioEye

Shea Tanis, Acting Executive Director, Coleman Institute for Cognitive Disabilities

Ben Tarbell, Manager, Global Connectivity & Access Policy, Facebook

Shari Trewin, Accessibility Research Leadership, IBM

Lisa Wadors, Senior Program Manager for Education, Research, and Partnerships, Benetech

Corinne Weible, Co-Director, PEAT

Frances West, Founder, FrancesWestCo

Taryn Williams, Lead, Office of Disability Employment Policy (ODEP) Youth Policy Team, Department of Labor

Tom Wlodkowski, Vice President, Accessibility, Comcast

Jay Wyant, Chief Information Accessibility Officer, State of Minnesota

Mohammed Yousuf, Research Transportation Specialist, Dept. of Transportation, FHWA