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Employment Prospects in a Digital World

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A Report for the NCD

- National Council on Disability commissioned "**The Power of Digital Inclusion: Technology's Impact on Employment and Opportunities for People with Disabilities**" in 2009.
- Researching and writing completed in 2010. Published on October 4, 2011
- Six sections plus executive summary, 284 pages

Employment in the Digital Age

- Problem: Workers with disabilities are typically
  - older than other workers,
  - work fewer hours per week,
  - less likely to have a college degree,
  - more likely in low-growth, low-wage occupations
- The potential of the digital age often still seems distant for people with disabilities
- Are new technologies bridges, barriers or a combination of both, to employment?

The "Vectors"

- Georgia Tech explored employment possibilities of key digital technologies – called "vectors":
  - Wireless communication platforms
  - Social networks
  - Immersive digital environments, including virtual worlds and tiered digital interactions, such as electronic games
  - Open publishing
  - Open source processes

Key Ideas: Human and Social Capital

- Human capital: the knowledge, abilities and skills of an individual (the "know-how"). People do better who are better educated, more intelligent, more attractive, more articulate, more skilled.
- Social capital: where people gain advantage because of their location in a social structure (the "know-who"). People do better who are better connected.
- The vectors are conduits to social capital, the connections among individuals

Key Idea: Social Capital

- Both finding and engaging in work depend on social capital, on networks of empowering relationships
- People with disabilities often lack this important element of social capital
- Digital technology and new media are changing how people access social capital, social networks, and the new employment environment

Findings: Unemployment Problem - 1

- Networks may have greater value for people with disabilities than for general population
  - social capital that underpins networks weaker
  - matching between employer and potential employee less effective
- Exception: Young people with disabilities are more similar to the non-disabled in terms of internet access
- Above 30, people with disabilities less likely to socialize than general population. The young (18-29) actually socialize more than their counterparts with disabilities

Findings: Unemployment Problem - 2

- Higher unemployment among people with disabilities assumed to be because of competitive disadvantage (= lack of human capital)
- Need to look at ways that job opportunity and job seeker match (= social capital)
- As knowledge generated largely through social interaction, social capital ("know-who") may become more significant than acquired knowledge ("know-how")

Areas of Employment Growth

- Employment potential of the information economy
- Vectors seen as avenues to work
- "Occupations of interest," in areas of business and employment growth, include
  - mobile broadband,
  - social networking,
  - "serious gaming" and "tiered digital interaction" (aka electronic games), and
  - open or peer publishing

Interviews with Industry - 1

- Interviews with industries operating in the vector areas
- How do the vectors affect the ability *to do work* as well as *to create* or *to find work?*
- Vectors seen primarily as work *creators*
- Disability community NOT seen as a viable market, and tech industry NOT adopting universal design principles

Interviews with Industry - 2

- Work revolves around interpersonal relationships and trust
- Individual has to be proactive in searching for or creating employment, and staying up to date
- Challenge: the disability market is seen as "niche" or outside the mainstream, not substantial enough to justify development work
- Characteristics of aging workers overlooked

User Studies - 1

- Explored perceptions and awareness of the vectors
- How vectors facilitate participation in the workplace, or potential for finding/creating work
- Three stages: (1) Focus Groups; (2) Online Social Network Groups; and (3) Delphi Study

User Studies - 2

- Vectors seen differently according to disability and familiarity with a particular technology
- Most familiar vector was wireless communication platforms, in particular, smartphones
- Users felt strongly about telework
- Vectors that allowed control of interactions or information (social media) or had reference utility (open publishing) seen as most useful

Focus Groups - 1

- 3 focus groups conducted between May and June 2010, with a total of 21 participants
- A range of disabilities were represented
- Smartphone most commonly referenced technology:
  - Opportunities: Access to social networks with greater ease and mobility
  - Barriers: Employer acceptance/workplace policies, learning curve, and cost
  - Interface important but not a "deal breaker" (IPhone example)

Focus Groups - 2

- Technology that permits user control or makes information manageable (social media, wireless platforms) viewed favorably
- Communications utilities very helpful (e.g. instant messaging)
- Technologies with reference utility (open publishing) viewed as increasing workplace engagement and opportunity
- Less enthusiasm for immersive digital environments and open source

Online Social Network Groups

- Development of virtual communities on Facebook and LinkedIn, census of disability groups with employment focus
- Employment not prominent theme for social media groups, less than 1% on Facebook and LinkedIn
- Disability social network use patterns not dissimilar from general use
- Social media under exploited for educational, training, and informative uses in workplace

Delphi Study - 1

- Iterative, 3-round study involving 30 participants
- Themes: 1) applicability of digital technologies to work, 2) awareness of tech, 3) affordability, 4) accessibility, and 5) adoption
- Belief that technology becoming critical for employment
- Belief that increased *use* of accessible digital technologies will increase employment opportunities for people with disabilities

Delphi Study - 2

- Universal (inclusive) design viewed as way to achieve greater uptake in digital technologies
- Employer issues (workplace technology policies, lack of organizational flexibility) viewed as barriers to the adoption of novel, accessible technologies
- Strong support for social media's potential in the workplace, especially for collaboration
- Mixed support for immersive digital environments and open peer publishing applications in increasing employment opportunities

Findings and Recommendations - 1

Finding 1. Necessity of education to increase awareness and technical skills

- **Recommendation 1: Tackle core issues of education** with key stakeholders at the federal, state and local level.

- **Recommendation 2: Develop accessible online literacy curriculum** aimed at people with intellectual disabilities in conjunction with family, self-advocate and service-provider groups.

Findings and Recommendations - 2

Finding 2. There are significant barriers to making a dispersed workforce a reality.

- **Recommendation 3: Address issues of Internet access** as a critical component of the vectors.

- **Recommendation 4: Explore industry partnerships to address cost,** for example, by providing in-kind services, devices, or partnerships to minimize cost to the end-user.

- **Recommendation 5: Monitor and contribute to federal and state legislative and regulatory language with regard to assistive technology** (AT) and meta-design *and* develop a standardized instrument to measure AT outcomes.

Findings and Recommendations - 3

Finding 3. The vectors may offer pathways to employment, enhancing proactive social interaction, building social capital, led by the young

- **Recommendation 6: Develop social-media campaigns** directed at people with disabilities between ages 15 and 30
  - an advisory board of the 15-30 target audience;
  - collecting/disseminating success stories
  - collecting/disseminating case studies of companies who employ people with disabilities as a resource; and
  - collecting evidence-based best practices

Findings and Recommendations - 4

- **Recommendation 7: Explore the possibilities of four national awards** modeled after the Malcolm Baldridge National Quality Award.
  - For creative use of the vectors and other digital technology in developing new employment opportunities
  - To recognize employment creation
  - A "Design for Ability" award, for a design management system with a commitment to universal design (UD) principles
  - An "Entrepreneur with Disabilities", to recognize original developments of "computer-supported collaborative work"

Findings and Recommendations - 5

Finding 4. The disability community needs to expand efforts to enhance awareness of the presence, capacities, and potential of people with disabilities.

- **Recommendation 8: Advocate for people with disabilities as an untapped resource and as a market,** using traditional as well as social-media channels.

- **Recommendation 9: Create discussion forums focused on the potential of the market that people with disabilities represent.**

Findings and Recommendations - 6

Finding 5. Social, technological, attitudinal barriers exist to raising awareness of the potential of the new networked economy among people with disabilities

- **Recommendation 10: Educational/outreach campaign** focused on the potential of information technologies to create new job opportunities
  - The Department of Labor (ODEP) to lead an industry partnership featuring businesses involved in the vectors (such as Google, IBM, Facebook).
  - Campaign to be centered on a major job fair, moving different major urban centers, focusing on the job potential of the networked economy

Findings and Recommendations - 7

Finding 6. Encourage the adoption of meta-design approaches

- **Recommendation 11: Conduct listening sessions with business and industry representatives**

- **Recommendation 12: The National Institute on Disability and Rehabilitation Research (NIDRR) to solicit input on the importance of research and development of meta-design applications as part of its focus on universal design for all government-funded projects.**

Findings and Recommendations - 8

Finding 7. Encourage development of communities of entrepreneurs with

- **Recommendation 13:** Explore programmatic initiatives to encourage **enhanced interagency coordination** and collaboration and to build outreach efforts.
- **Recommendation 14:** **Develop field workshops among the research, policy, and advocacy communities** to expand "community-level" input into public-sector processes that affect growth of communications channels

The Power of Digital Inclusion

- **Full report: www.ncd.gov/publications/2011/Oct042011.**

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