Workplace Accommodations for People with Disabilities: Results of a Policy Delphi Study

Presented by

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Executive Summary:

This paper presents the results of policy research conducted by the Rehabilitation Engineering Research Center on Workplace Accommodations (WorkRERC) to support efforts to develop policy initiatives for addressing the key issues critical to the implementation of successful workplace accommodations. A review of pertinent literature was conducted to identify workplace accommodation and employment topics associated with the employment of people with disabilities in order to lay the groundwork for developing a conceptual framework to guide policy change. The framework informed research undertaken utilizing the policy Delphi method, a multi-round, iterative polling instrument used to assess stakeholder perceptions on key issues and intervention options regarding workplace accommodations for employees with disabilities. Participants in the Delphi were asked to provide input on four categories of questions. **Forecasts** are items that examine the feasibility of broad social, economic, regulatory, and technological trends that may affect the future of workplace accommodations. **Issues** items elicit the input of respondents on the importance of perceived and identified barriers and opportunities related to workplace accommodations. They are clustered into broad categories: 1) awareness, 2) policy/regulatory, 3) economic, 4) technological, and 5) social. **Goals** concentrate on the

desirability of particular outcomes in addressing pertinent issues. Finally, **Options** items ask respondents to consider the feasibility of initiatives and policy interventions to address issues deemed important and achieve goals determined to be desirable. Participants in our policy Delphi arrived at a set of 22 policy options that received the support of at least 75 percent of the panel. Many of these options take a collaborative approach, including the involvement of federal agencies such as the Office of Disability Employment Policy (ODEP) in the Department of Labor and the ADA Task Force of the Department of Justice.

1.0   Introduction

Despite the passage of legislation and adoption of regulatory rulemaking to ensure the inclusion of people with disabilities in all aspects of American society, the full participation of people with disabilities within the workplace remains a daunting challenge. First, there is the problem of general disparities of employment between Americans without disabilities and those with disabilities. In 2002, the U.S. Census Bureau found higher rates of unemployment among people with disabilities, 14.1 percent, compared to just 5.8 percent of the population without disabilities [1]. Despite efforts in recent years to ameliorate these disparities, recent findings from the Department of Labor suggest that more remains to be done to improve the employment of people with disabilities. In February 2009, the Department of Labor found that unemployment among people with disabilities was 14.0 percent, compared to 8.7 percent of the population without disabilities [2].

Compounding the problem of a disproportionately high unemployment rate among people with disabilities is the issue of workplace accommodations, which refer to those technologies and techniques for facilitating participation and inclusion of workers with disabilities within the workplace, both physically and socially [3]. Although reasonable accommodations for workers with disabilities have been mandated by such laws as Title I of the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008, little is known about the actual provision of accommodations. Head et al. (2006) reported on the difficulty of obtaining even the most basic information about the implementation of accommodations among Fortune 500 companies in the United States [4].

In response to this second problem in particular, we undertook a study on the issues, goals, and policy options surrounding workplace accommodations for Americans with disabilities.

2.0 Methods

2.1 Policy Delphi Method

Our study utilized the policy Delphi method, which is derived from the conventional Delphi method developed by Olaf Helmer and Norman Dalkey at the Rand Corporation during the 1950s and 1960s [5][6]. The Delphi method, as it was originally conceived, is a tool for military and economic forecasting based upon repeated surveys of experts in the given area under consideration [7]. The Delphi method essentially relies upon expert opinion, professional experience, and sometimes intuition and tacit knowledge, in order to render a forecast on a given issue of importance. This iterative technique is deployed with the intention of developing a better understanding, usually through the formation of a consensus, of problems, approaches, or future trends.

First described by Stanley Turoff in 1970, a policy Delphi modifies those goals somewhat, as it seeks to develop "pro" and "con" arguments about policy issues and their resolutions [8]. This technique, employed by our study, allows a panel of stakeholders to contribute elements to a complex situation with the intention of building a composite model of the topic under study. As Turoff and others defined it, a policy Delphi is less about the use of experts to generate a policy decision. Rather, it is more about employing a group of "advocates and referees" to present all the options and supporting evidence for a given issue, and it "generates the strongest possible opposing views on the potential resolutions of a major policy issue" [9].

Policy Delphis can have any of three important objectives: 1) to ensure that all possible options have been proposed for consideration; 2) to estimate the impact and consequences of any particular option; and 3) to examine and estimate the acceptability of any particular option. The most important objective here was a consideration of the feasibility and acceptability of the options proposed. In doing so, the Delphi relied upon the six phases in the communication process between its participants: 1) formulation of the issues; 2) exposing the options; 3) determining initial positions on the issues; 4) exploring and obtaining the reasons for disagreements; 5) evaluating the underlying reasons; and 6) reevaluating the options [7]. In the case of our policy Delphi, an initial set of issues and goals were formulated prior to the first round through the development of an analytic policy matrix supported by an informal review of the scholarly literature. During the first two rounds of the Delphi, these issues and goals were presented to the panel for review [9].

Policy Delphis typically adhere to four key principles: *anonymity*, which minimizes outside influences on the predictions panelists make and allows for candid responses; *asynchronicity*, the ability of participants to take part when and how they choose to; *controlled feedback*, as the results of one round of questions are used to inform the creation of the next; and *statistical response*, taking the opinions of experts on a given area and converting them into quantitative data [10].

The types of participants selected include both formal and informal stakeholders who have a vested interest in the policy issue. First-stage policy Delphi questions typically include four categories of items: forecasts, issues, goals, and options. The Policy Delphi on Workplace Accommodations utilized this approach. **Forecasts** examined the *reliability* of broad social, economic, regulatory, and technological trends that may affect the future of workplace accommodations. **Issues** elicited the input of respondents on the *importance* of perceived and identified barriers and opportunities related to workplace accommodations. These were clustered into five broad categories: 1) awareness, 2) policy/regulatory, 3) economic, 4) technological, and 5) social. **Goals** concentrated on the *desirability* of particular outcomes in addressing pertinent issues. **Options** items asked respondents to consider the *feasibility* of initiatives and policy interventions to address issues deemed important and achieve goals determined to be desirable. While each of these four categories (forecasts, issues, goals, and options) was relatively autonomous, it is also accurate to state that forecasts informed issues; issues informed goals; and goals informed options.

Because policy Delphi questions are designed to elicit conflict and disagreement, as well as to clarify opinions, the response categories do not typically permit neutral answers. The response choices are often rated on a 4-point Likert-type scale. The response choices for forecast items range from *certainly reliable* to *unreliable*. For issue items, response categories range from *very important* to *unimportant*. The response choices for goal items range from *very desirable* to *very undesirable*. For option items, the range is from *definitely feasible* to *definitely unfeasible*. In addition, open-ended responses are used to help formulate additional issues and goals through the Delphi. These responses are also used to gauge reasons for disagreement whenever a proposed issue or goal fails to receive a strong majority of support.

2.2 Electronic Delphi (e-Delphi)

A traditional pencil-and-paper policy Delphi can run five or six rounds using such a technique. However, the use of an electronic Delphi, via an Internet website developed for such a specific purpose, means that the Delphi may

be satisfactorily completed in fewer rounds and with greater convenience for the participants. Our three-round e-Delphi was conducted via the Human-Environmental Regional Observatory's (HERO) e-Delphi system, hosted by Pennsylvania State University [10].

2.3 Implementation

The authors solicited participants for the Policy Delphi on Workplace Accommodations by utilizing the mailing lists of the Center for Assistive Technology and Environmental Access (CATEA) at Georgia Tech and the Southeast Disability and Business Technical Assistance Center (DBTAC). Approximately 1,000 solicitations were sent out from these lists. Of these requests for participation, 139 responses were received indicating an interest (roughly a 13.9 percent response rate). These individuals were provided a username and password that enabled them to take part in the policy Delphi through HERO's e-Delphi system. Of these 139 respondents, 44 individuals completed the first round of the policy Delphi (a completion rate of 31.6 percent of those indicating an interest, and approximately 4.4 percent of the entire group solicited). Over the following two rounds, there was slight attrition as several of the original respondents failed to participate, but on the whole, the main panel remained intact throughout the course of the study.

The Policy Delphi on Workplace Accommodations was conducted over the course of three rounds. Round 1 took place between December 2006 and January 2007, during which, participants answered a set of forecasts, issues, goals, and options questions that were formulated in response to the baseline literature review and policy matrix. Of particular interest in this round was achieving clarity on the most important issues surrounding workplace accommodations for people with disabilities. Round 2 had two key objectives. First, it posed additional issues items to elaborate on the findings from Round 1. More prominently, however, Round 2 was devoted to discerning the most desirable goals. Round 3 took place between January and March 2009, and it was primarily dedicated to determining the most feasible policy options.

3.0 Summary of Results

The first round of the Delphi probed mainly on forecasts and issues, while also offering some preliminary goals and options for consideration by the panel. An overarching theme that emerged in this first round was the salience of awareness as the key issue in mitigating the barriers surrounding workplace accommodations for people with disabilities. Seven specific issues

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came out of the first round, most of which touched on aspects of awareness in some way:

1. Lack among stakeholders of a common understanding of workplace accommodations,
2. Unawareness among employers regarding the range of options and costs,
3. Importance of promoting a workplace receptive to employees with disabilities,
4. Improvement of emergency egress for employees with disabilities,
5. Ambivalence about telework options as viable accommodations,
6. "Problem" of aging workers as complex and multidimensional,
7. Varied role of policy options (e.g., market-oriented approaches vs. regulation) in achieving desired outcomes.

Round 2 of the Policy Delphi on Workplace Accommodations had two main objectives: 1) to elaborate on and probe more deeply the important issues surrounding workplace accommodations revealed in the first round, and 2) to discern the most desirable goals for addressing the key needs of disability stakeholders where workplace accommodations are concerned. With these aims in mind, seven pressing issues in particular were discerned in this round. Some of these findings augment those identified above, while others provide new insights:

1. The presence of many potential disincentives to bring people with disabilities into the workforce,
2. Employer (un)awareness of resources available to them to assist in identifying accommodation needs for employees with disabilities,
3. Consideration of employees with disabilities in the formulation of workplace emergency plans,
4. The possibility that training and educational programs may not be providing employees with disabilities with adequate or appropriate skills for meaningful employment,
5. Employer perceptions that hiring people with disabilities will increase insurance costs, as well as a lack of awareness about the out-of-pocket costs of accommodating employees with disabilities,
6. A lack of clarity, under the ADA, about employer obligations regarding accessibility of websites for employees and applicants with disabilities,
7. Co-worker perceptions that employees with disabilities may be unable to perform job tasks as well as individuals without disabilities.

Another primary concern of Round 2 was the identification of key goals that would be used to craft policy options for consideration in Round 3. Among the most important goals:

1. Development/dissemination of resources to educate employers about the benefits associated with hiring people with disabilities,
2. Revision/updating of existing telecommunication regulations to meet the needs of employees with disabilities in the workplace, with particular regard to newer technologies,
3. Development of programs to help employers further offset the costs of making accommodations for workers with disabilities,
4. Public awareness/information campaigns to encourage job recruitment websites to consider accessibility needs of people with disabilities,
5. Development of new technologies or adapting existing ones to address emergency needs of people with disabilities in the workplace,
6. Development of materials to educate employers about the capabilities of people with disabilities in the workplace,
7. Undertaking best practices research to develop initiatives such as worker partnership programs (i.e. "buddy system") to help integrate older workers in the workplace.

Based on the issues found to be most important and the goals determined to be most desirable by the Delphi panel, Round 3 focused on a consideration of policy options to achieve desired awareness, regulatory, economic, and technological outcomes in the area of workplace accommodations.

Among the most options determined to be the most feasible by the Delphi participants:

- The U.S. Department of Labor's Office of Disability Employment Policy (ODEP), in conjunction with the U.S. Department of Justice's ADA Task Force, could survey business/employee stakeholders to assess key regulatory and legal misconceptions regarding workplace accommodations. "Definitely feasible" or "feasible": 95 percent

- ODEP, in conjunction with the Disability and Business Technical Assistance Centers (DBTACs) and other relevant stakeholder groups, could conduct informational campaigns directed at helping employees understand their accommodation needs and how to request appropriate accommodations. "Definitely feasible" or "feasible": 92 percent.

- The development of employer peer groups, arranged by sector, to bring together employers to share information about making accommodations and obtaining VR resources, as well as share relevant case studies. "Definitely feasible" or "feasible": 84 percent

- ODEP, in collaboration with the Occupational Safety and Health Administration (OSHA), could identify primary employer concerns related to providing telework as an accommodation for workers with disabilities and clarify any misconceptions regarding employers' regulatory obligations for off-site work (i.e., OSHA safety guidelines for off-site telework locations). "Definitely feasible" or "feasible": 96 percent.

- As part of its efforts to update Section 508 of the Rehabilitation Act of 1973, the Access Board could facilitate additional outreach seminars or workshops involving business stakeholder groups to disseminate more widely the findings and recommendations made by the Board. "Definitely feasible" or "feasible": 92 percent.

- The FCC's Emergency Alert System (EAS), in consultation with the Disability Rights Office (DRO), could issue a Notice of Inquiry (NOI) to investigate employers' needs to consider people with disabilities when developing plans for the dissemination of emergency communications in the workplace. "Definitely feasible" or "feasible": 91 percent.

- The U.S. Department of Justice's ADA Task Force could consider adapting enforcement programs for the public accommodations statutes of the ADA (Titles II and III), such as Project Civic Access, for enforcement of the employment statute (Title I). "Definitely feasible" or "feasible": 92 percent.

- The U.S. Department of Justice, in collaboration with the Equal Employment Opportunity Commission (EEOC) and ODEP, could consider how barriers to public accommodations covered in the ADA's Titles II and III adversely impact the employment of people with disabilities. "Definitely feasible" or "feasible": 87 percent.

- ODEP could develop a voluntary program for the collection of data pertaining to workplace accommodations by employers (with an option of anonymity for legal protections) in order to discern prevalent accommodations practices and suggest possible best practices. "Definitely feasible" or "feasible": 77 percent.

- Federal lawmakers could adapt provisions of the Small Business Tax Credit, Internal Revenue Service (IRS) Code, Section 44: Disabled Access Credit, to cover employers who may not necessarily qualify under the small business limitation, in order to expand tax incentives for the provision of workplace accommodations by employers. "Definitely feasible" or "feasible": 91 percent.

- The Telecommunications Equipment Distribution Program Association (TEDPA), in association with its member state associations, could examine development of equipment distribution programs aimed at providing assistive technology through loan programs to offset the costs of making accommodations faced by employers. "Definitely feasible" or "feasible": 80 percent.

- ODEP, in collaboration with other stakeholders, could undertake campaigns to inform employers about the importance of accessible websites and other online resources for the purposes of job recruitment. "Definitely feasible" or "feasible": 99 percent.

- In consultation with the FCC's Disability Rights Office (DRO) and Emergency Alert System (EAS), authorities could promote telecommunications technologies to address the needs of people with disabilities in the workplace (e.g., receiving message details, providing egress information) in case of an emergency. "Definitely feasible" or "feasible": 95 percent.

- Research efforts by stakeholders such as NIDRR and its projects (i.e. RERC on Workplace Accommodations) might focus on exploring new "workspaces" such as online work collaborations, as an approach for workplace accommodations for people with disabilities. "Definitely feasible" or "feasible": 95 percent.

- Wireless telecommunications industry groups with significant interest in disability issues, in collaboration with other relevant stakeholders such as the Rehabilitation Engineering Society of North America (RESNA), could promote the development of new technologies or adaptation of existing ones (i.e. cellular and SMS text communication) to address the needs of people with disabilities within the workplace. "Definitely feasible" or "feasible": 84 percent.

4.0   Forecasts

The Delphi asked panelists seven probe questions pertaining to the reliability of certain forecasts. Three of the projections elicited a strong degree of support from respondents regarding their reliability. First, participants agreed that jobs would continue to become increasingly reliant on information and communications technologies (ICTs). Second, participants also agreed that over the next twenty years the pool of qualified workers with disabilities would continue to increase. Third, the Delphi panel

concluded that the U.S. workforce would include workers above the age of 65.

Q	Item	Scale			
		Highly Reliable	Reliable	Risky	Unreliable
FWT 1	Jobs will become increasingly reliant on information and communication technologies (ICTs). How certain are you that this projection is reliable?	63%	34%	2%	0%
FWS 2	The pool of potential qualified workers with disabilities will continue to increase during the next twenty years. How certain are you this projection is reliable?	59%	31%	6%	2%
FAA 1	Increases in the percentage of the population above the age of 65 will lead to major changes in the composition of the U.S. workforce. How certain are you that this projection is reliable?	47%	40%	9%	2%

In general, participants suggested that in order to make the workplace of the near future more available to people with disabilities, it is important that it be made more accessible, both in a physical and social sense. Toward those ends, respondents generally agreed that an increased use of universal design principles and heightened awareness of the capabilities and characteristics of employees with disabilities by their employers would contribute toward a more accessible workplace. However, regarding the role of telework and telecommuting options as one of those means, the Delphi panel was less convinced of the reliability of two forecasts. With notable dissent, a majority found that telework would become more prevalent in the American workplace. But half of the respondents also believed it risky to assume that a growth in telework as a work option for people with disabilities would necessarily increase the group's overall employment.

When asked what other trends they believed would have a significant impact on people with disabilities, the Delphi panel predicted: 1) changes in the labor force and economy in general, resulting in higher unemployment/outsourcing and increased competition for jobs, but also more part-time employment; 2) continued importance of information and communications technologies (ICTs) in the workplace, as well as their implications for employees with disabilities; and 3) ongoing confusion about employer obligations and rights regarding the employment and accommodation of people with disabilities, combined with ineffective or unclear federal guidelines.

In the second round, respondents were more divided than in the first round regarding the proposed forecasts. The highest proportion of Delphi participants believed that an increased emphasis on universal design principles might better address the needs of people with disabilities and create new opportunities to work. Also receiving support was a forecast that

changes in population characteristics would make the determination of appropriate workplace accommodations increasingly complex. Both of these items received at least 75 percent support from the Delphi panel, but neither received considerable support as a "highly reliable" forecast.

Q	Item	Scale			
		Highly Reliable	Reliable	Risky	Unreliable
FF2.2	The increased emphasis on universal design may better address the needs of people with disabilities and create new opportunities to work. How certain are you this projection is reliable?	29%	54%	9%	6%
FF2.1	Changes in population characteristics (aging, increases in obesity, environmental disorders such as asthma) will make the determination of appropriate employment accommodations increasingly complex. How certain are you this projection is reliable?	22%	61%	12%	3%

Two other forecasts received even more mixed support from the panel. A forecast that increased employer use of virtual environments and telework would improve work opportunities for people with disabilities was found to be risky by 35 percent and unreliable by three percent of the Delphi panel, although 60 percent found the forecast to be at least reliable. Another forecast that increased concern for "social responsibility" by employers would result in greater awareness of work options for people with disabilities received even less support. Only 56 percent of respondents believed the forecast to be reliable, while 36 percent found it risky and 6 percent replied that it was unreliable.

When asked about other forecasts they believed might be important, notable open-ended responses from the Delphi panel included increased concern over the federal government's ability to meet the needs of a growing population of people with disabilities. A number of respondents gave special attention to disabled veterans of the current wars in Iraq and Afghanistan. Some participants pointed to the increasing globalization of the services industry and the impact that increased competition for jobs might have on people with disabilities. Others discussed pending regulatory measures by the Department of Justice to strengthen the provisions in the ADA (i.e. the ADA Amendments Act) as a notable trend.

5.0   Issues

5.1 Awareness Issues

One key finding that emerged from the Issues questions asked in the Delphi is a need for better data collection on workplace accommodations. Most important, according to the Delphi panel, many employers lack clarity on

what is defined as an "accommodation." There is a need to define the concepts related to workplace accommodations for persons with disabilities. If employers do not understand the wide range of accommodations that may be provided for their employees, some respondents noted, then the range of possibilities may seem unnecessarily narrow for managers. A few respondents emphasized that not all accommodations need to be based around AT or other expensive technologies, and it is important to convey this broad understanding of "accommodations" to employers. In addition to making employers more aware of the types and range of accommodations, there is also a need to provide better data on the employment situations of persons with disabilities and the accommodations provided for such workers.

But the strongest point of agreement among the Delphi panel involved employee safety and emergency preparedness. The largest majority of respondents found that emergency plans may not be designed to fit the needs of people with disabilities, and employers should consider the needs of employees with disabilities during emergency situations. As with the forecasts on the issue, participants were decidedly mixed on the importance of issues pertaining to telework and telecommuting for employees with disabilities.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IDA4	Employers lack of clarity on what is deemed an "accommodation." How important is this issue?	62%	27%	9%	0%
IDA3	Employers' perspectives are lacking the development of "best practices" workplace accommodations. How important is this issue?	36%	50%	9%	4%
IWA2	Employers and employees lack awareness of the types of workplace accommodations that can be implemented. How important is this issue?	61%	30%	7%	0%
ISA1	Emergency plans for workplaces may not be designed to fit the needs of employees with disabilities. How important is this issue?	69%	16%	11%	2%
ISA2	Employers believe that (in an emergency situation) employees with disabilities are more likely to be at risk of serious injury than workers with no disabilities. How important is this issue?	51%	32%	13%	2%
ISDA1	Employers may hold misperceptions that implementing accommodations is costly in terms of money and time. How important is this issue?	47%	45%	2%	4%

Participants were asked what awareness issues they believed would pose significant work-related barriers for people with disabilities. Leading issues included: 1) employers' possible unawareness of resources, such as the disability community, rehabilitation professionals, or VR programs, which may help in the process and cost of establishing accommodations; 2) continuing need to implement universal design principles in the workplace

and ensure adequate interface between AT and ICTs; and 3) employers' need for a better understanding of how to structure telework as an accommodation.

In Round 2, two awareness issues received extremely strong support from Delphi participants. The first related to workplace emergency plans' consideration of the needs of people with disabilities. The second involved employer unawareness of resources to help them identify needs for accommodations for workers with disabilities. In both cases, 77 percent of respondents believed these two issues to be "very important."

Though receiving a majority of support, the other two items found the Delphi panel more divided: 1) employers lack tools or resources to implement virtual nodes of work such as telework as an accommodation for people with disabilities, and 2) employers may be unfamiliar with how to structure telework as an accommodation for people with disabilities. These findings further suggest that responses to telework as a viable workplace accommodation remain mixed among the Delphi panel.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IA2.2	Workplace emergency plans have not considered the needs of, or input from, employees with disabilities. How important is this issue?	77%	19%	3%	0%
IA2.1	Employers may be unaware of resources, such as disability advocates, national websites, local rehabilitation professionals, or VR programs that may help identify needs for accommodations for workers with disabilities. How important is this issue?	77%	16%	6%	0%
IA2.4	Employers lack tools or resources to implement virtual nodes of work such as telework as an accommodation for employees with disabilities. How important is this issue?	32%	54%	12%	0%
IA2.3	Employers may be unfamiliar with the approaches to structure telework as an accommodation for an employee with a disability in a manner mutually beneficial to employees and employers. How important is this issue?	35%	48%	16%	0%

When probing about other important awareness issues, respondents provided feedback regarding both employer-side and employee-side issues. The most salient employer-side issues involved potential misinformation about workplace liability, attendance and productivity issues for people with disabilities, employer lack of understanding regarding the pertinent rights of and policies governing workers with disabilities, and employer fears that making accommodations will be costly. Key employee-side issues included a need for workers with disabilities to understand how best to request accommodations and effectively communicate their needs to the employer.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IA3.2	Employees with disabilities may lack an understanding of how to request an accommodation, or may be reluctant communicate their needs to an employer. How important is this issue?	85%	14%	0%	0%
IA3.3	Employers believe that workers with disabilities will cost them more money than other employees because they will have to make mandated accommodations or pay more in worker's compensation benefits. How important is this issue?	81%	14%	3%	0%
IA3.1	The physical absence of teleworkers reduces participation in many workplace activities, leading to isolation, employee and employer dissatisfaction, and diminishing a worker's social capital and possible opportunities for advancement. These factors, along with efforts by disability stakeholders to improve the physical inclusion of people with disabilities in the workplace, challenge telework as a viable workplace accommodation. How important is this issue?	29%	48%	18%	3%

5.2 Policy/Regulatory Issues

A distinct majority of respondents cited as important the possible inaccessibility of the Internet for people with disabilities. Also important was the suggestion that legislation and rulemaking mandating the accessibility of telecommunications services for persons with disabilities fail to take into account newer technologies such as Web 2.0 and newer e-mail and wireless telecommunications services. Despite strong agreement over the importance of federal policies to ensure accessibility to telecommunications and Internet services by persons with disabilities, the Delphi group was split over the importance of federal regulation for telework and telecommuting. Just as many respondents were convinced that the issue was only slightly important or unimportant as those who found it very important or important. Once again, the Delphi group was mixed on the importance of this issue.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IWR4	The Internet improves access to employment for many, but people with disabilities may be disadvantaged (in the employment arena) by the inaccessibility of the Internet. How important is this issue?	56%	29%	13%	0%
IWR1	Legislation mandating certain telecommunications requirements for persons with disabilities does not include newer technologies like e-mail or wireless communication devices. How important is this issue?	52%	36%	9%	2%

Respondents were asked what other policy/regulatory linked issues they believed would pose the greatest barriers or benefits to people with disabilities in the workplace. Three notable issues identified were: 1) concern that individuals with disabilities may not have enough or appropriate training to enter specific workplaces, as well as a need for programs or policies to provide these individuals with such training or education; 2) a need for incentives to bring workers into the workplace, including better insurance/healthcare and a transition plan from unemployment to employment; and 3) a need for policies that encourage employers to provide flexibility for work arrangements and schedules, including flexible leave, job-sharing, part-time schedules, and customized employment policies.

One policy/regulatory issue stood out in particular during this round. Eighty-three (83) percent of participants described as "very important" the possibility that there are too many disincentives to bring people with disabilities into the workplace. The issue received more support than any other item presented in this round of the policy Delphi. Three other issues received very strong support: 1) concern that training and educational programs may not be adequately preparing people with disabilities to enter the workforce; 2) the possibility that ineffective enforcement of telecommunications regulations fails to compel manufacturers to produce accessible devices; and 3) telecommunications regulations' failure to consider physical disabilities, such as upper body impairment and poor dexterity, regarding telecommunications device use. It is also notable that another telework-related item received mixed support from respondents.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IR2.3	There may be too many disincentives (e.g., inadequate insurance and healthcare, lack of a transition plan from unemployment to employment) to bring people with disabilities into the workforce. How important is this issue?	83%	9%	3%	3%
IR2.2	Training and educational programs may not be providing people with disabilities with adequate or appropriate skills to prepare them for the professions in which they seek employment. How important is this issue?	64%	32%	3%	0%
IR2.5	Ineffective enforcement of telecommunications regulations (e.g., Section 508 of the Rehabilitation Act) fails to compel manufacturers to produce accessible devices. How important is this issue?	64%	29%	3%	3%
IR2.4	Telecommunications regulations have historically attempted to provide telephony access for people with hearing and communication impairments, neglecting people who are unable to use telecommunications devices (e.g., telephone) due to physical disabilities such as upper body impairment and poor dexterity. How important is this issue?	58%	38%	3%	0%

Q	Item				
IR2.1	Employers are often unaware of educational or training programs to help people with disabilities obtain employment in their profession. How important is this issue?	46%	40%	10%	3%

Open-ended responses elaborated further on the disincentives identified by a strong majority of participants as a key policy/regulatory issue. Among these are inadequate definitions of disability and telework by the federal government, problems associated with benefits from Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI), and a need for hiring preference programs rather than tax incentives to address needs of workers with disabilities.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IR3.1	The complexity of federal entitlement programs makes analysis of employment of people with disabilities more variable and less reliable, compounding the problems faced by researchers seeking to better understand workplace accommodations and lacking the necessary data to do so. How important is this issue?	37%	59%	3%	0%
IR3.2	Vocational rehabilitation (VR) professionals are oriented toward meeting the needs of individual clients, rather than corporate objectives. Another parallel system for helping employers deploy accommodations that benefit both employees and employers should be implemented. How important is this issue?	51%	22%	22%	3%

5.3 Economic Issues

Both economic issues considered by the Delphi panel—1) that ICT manufacturers may be unaware of markets for universally designed products, and 2) that employers are not willing to pay the cost for workplace accommodations—received strong support from a distinct majority of the Delphi participants. When asked what economic-linked issues they believed represented the greatest barriers or benefits for disabilities in the workplace, the Delphi panel named three key issues: 1) employers' lack of understanding of the actual cost of accommodations, their belief that other costs (insurance) will rise from hiring people with disabilities, and their possible lack of knowledge concerning the tax benefits associated with making accommodations; 2) a failure to appreciate how federal/state VR programs can benefit both the person with disability and the employer; and 3) how loss of medical/Social Security benefits upon obtaining employment, even low-paying jobs, creates a financial disincentive to seek employment.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IWE1	Manufacturers of information and communication technologies may be unaware of the market for universally designed products. How important is this issue?	53%	37%	6%	2%
ITE2	Employers are not willing to pay for the cost of workplace accommodations. How important is this issue?	61%	22%	13%	2%

The Delphi panel strongly agreed that all of the economic issues raised were important. Of particular concern was the use of universal design principles to drive down costs of making accommodations, a need for employer awareness regarding programs to identify and pay for accommodations, an overestimation by employers of the out-of-pocket expenses of accommodations, and employer beliefs that hiring people with disabilities will increase insurance costs.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IE2.4	Use of universal design principles in workplaces could drive down the costs of providing accommodations for employees with disabilities. How important is this issue?	61%	38%	0%	0%
IE2.5	Employers lack an awareness of the availability of state and federal VR programs to identify accommodations needs and pay for accommodations. How important is this issue?	64%	32%	0%	3%
IE2.1	Employers overestimate the out-of-pocket expense of workplace accommodations. How important is this issue?	61%	35%	3%	0%
IE2.2	Employers believe that hiring people with disabilities will increase insurance costs. How important is this issue?	67%	25%	6%	0%
IE2.3	Employers lack an understanding of the tax benefits (e.g., tax incentives to help pay for accommodations) associated with hiring employees with disabilities. How important is this issue?	61%	22%	9%	6%

Open-ended responses elaborated on some other key issues. Most popular among them was the issue of the cost for equipment and technical support. Other notable responses included a need to understand the differentiated nature of both disability and accommodation, so as not to overly generalize the issue when assessing costs and benefits, as well as a need to focus on cognitive and intellectual disabilities as much as physical and sensory disabilities.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IE3.1	The individualized nature of accommodations suggests that an analysis weighing the total expected costs of making accommodations against the total expected profits generated by the accommodated employees is too narrow a way to evaluate workplace accommodations. Incorporating other means of analysis, such as social return on investment analysis (SROI), that takes into account social costs and benefits may be more appropriate. How important is this issue?	37%	55%	7%	0%

5.4 Technological Issues

Findings for the technology issues reiterate the importance of website and ICT accessibility for people with disabilities. Particularly noteworthy is the Delphi panel's agreement that government website accessibility is an important issue. So, too, is the suggestion that recruitment websites run by employers may not be accessible to jobseekers with disabilities. Along with website and ICT accessibility, Delphi participants also affirmed the importance of emergency services and procedures as they relate to technology. A smaller but clear majority of respondents also noted the importance of issues related to technology and aging workers. The Delphi panel found it important that aging workers might need special training to use new technologies in the workplace, or that such workers might show resistance to them.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IWT2	State and local government websites are not designed for accessibility. How important is this issue?	61%	25%	11%	2%
IWT1	Websites used by employers for job recruitment may not be fully accessible. How important is this issue?	59%	27%	9%	4%
IST1	Emergency/egress procedures do not take into account the limitations of persons with disabilities. How important is this issue?	69%	23%	6%	0%
ISW1	The definitions of EIT (electronic & information technologies) as they apply to workplace accommodations and people with disabilities in existing legislation must be updated to meet changes in current technologies such as e-mail and wireless devices. How important is this issue?	52%	34%	6%	6%

Respondents were asked what other technological issues they believed were significant for disabilities in the workplace. Technology-related concerns seemed to fall into three general categories: 1) product design, particularly the need for universal design in technology and platforms that are interoperable with AT; 2) an expressed need for training and qualified individuals to instruct with electronic and information technologies (EITs)

and help make technology decisions; and 3) how the cost of AT devices may serve as a disincentive for employers to employ persons with disabilities.

In Round 2, two technology issues stood out above the others presented. Eighty-two (82) percent of respondents agreed that under the ADA, it is unclear what responsibilities employers have for ensuring that websites are accessible for both employees and job applicants with disabilities. Also, 73 percent of participants agreed that there is a lack of equipment that can be used by people with disabilities in an emergency.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IT2.1	Under the ADA, it is unclear what responsibilities employers may have for ensuring that websites are accessible to employees and applicants with disabilities. How important is this issue?	82%	17%	0%	0%
IT2.3	There is a lack of equipment (e.g., digitally based alert systems for people with hearing and visual impairments) that can be used by people with disabilities in an emergency or in the event of failure of communications systems. How important is this issue?	73%	20%	6%	0%
IT2.4	In the event of an emergency, technologies and workspaces have not generally been designed to communicate alerts in accessible formats (e.g., flashing lights) to employees with disabilities. How important is this issue?	67%	29%	0%	3%
IT2.2	Non-computer technologies within the workplace (phone systems/voicemail, printers, copiers, fax machines, microwave ovens, vending machines) are often inaccessible due to their small displays and interfaces or where they are located. How important is this issue?	54%	35%	6%	3%

5.5 Social Issues

Social factors are important, yet frequently overlooked in workplace accommodations and the employment of people with disabilities. Delphi participants strongly agreed that the possibility that employers and co-workers underestimate the ability of employees with disabilities to perform a certain job represents an important issue. Respondents also noted that the assimilation of workers with disabilities into a workplace is an important social dimension when considering workplace accommodations. The possibility of such negative attitudes toward workers with disabilities and their accommodation in the workplace is especially true regarding aging workers. The Delphi panel found it important that older workers might be affected adversely by corporate culture and a reticence by employers to hire such workers.

Delphi participants were also asked to consider the social issues of telework and telecommuting. While reaction to the various telework/telecommuting

issues was mixed during the course of the study, a majority of respondents considered the various social dimensions of telework and telecommuting to be important issues. The potential loss of social capital and relative lack of upward social mobility for workers in such employment arrangements was viewed as an important issue by the Delphi respondents.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IWS1	Employers and co-workers underestimate the capability of employees with disabilities to perform a job. How important is this issue?	54%	31%	11%	2%
IAS2	Workers aging into disability are less likely to find new employment or to be rehired after a job loss. How important is this issue?	59%	36%	4%	0%
IAS3	Older workers with disabilities may lack awareness that they may be eligible for workplace accommodations. How important is this issue?	46%	44%	9%	0%
IAS1	Employer corporate culture may negatively impact attitudes towards keeping older workers. How important is this issue?	41%	44%	11%	2%

When asked about social issues that pose significant barriers to people with disabilities in the workplace, leading responses from participants included, 1) a need to overcome attitudinal barriers in the workplace, notably the possibility that employers and co-workers may not be tolerant of employees with disabilities or aged workers, 2) addressing the social isolation associated with telework, 3) and the possibility that other facets of employment besides the workspace (office celebrations, carpools, field trips, cafeteria/break rooms) may be inaccessible.

Regarding social issues, the issue of co-worker perceptions that employees with disabilities may not be as competent or able to perform job functions as well as non-disabled employees received the greatest support. Also notable was the issue that employees with disabilities face social exclusion in the workplace as the result of the inaccessibility of other spaces (cafeterias, break rooms, conference rooms) apart from the actual workspace.

Q	Item	Scale			
		Very Important	Important	Slightly Important	Unimportant
IS2.3	Co-worker perceptions, that employees with disabilities may not be as competent or unable to perform job functions as well as able-bodied employees, are common. How important is this issue?	67%	29%	0%	3%
IS2.1	Employees with disabilities face social exclusion in the workplace as a result of the inaccessibility of other spaces (e.g., cafeterias, break rooms, conference rooms) and employment activities (e.g., celebrations, carpools, client offices). How important is this issue?	51%	35%	9%	3%

| IS2.2 | Older workers with disabilities may lack awareness that they may be eligible for workplace accommodations. How important is this issue? | 41% | 35% | 19% | 3% |

6.0 Goals

The Delphi probed on a number of goals. Several received very high support, including: 1) the development and dissemination of resources to educate employers about the economic incentives associated with hiring people with disabilities, 2) the revision of existing telecommunications regulations to address access to cutting-edge technologies by people with disabilities, 3) the development of programs to help employers offset the cost of providing workplace accommodations, and 4) encouraging job recruitment websites to consider the needs of people with disabilities.

6.1 Awareness Goals

Round 1 of the Delphi proposed three goals, all in the area of awareness, for participants to consider. Two goals in particular elicited strong support from the Delphi panel, and, not surprisingly, they both pertained to employers. Considered most desirable was a goal to promote better understanding of barriers to increased employment of persons with disabilities from the employer view. Almost as popular among the respondents was a recommendation to develop examples and models for corporate implementation of accommodations and hiring of persons with disabilities. Another goal receiving a majority of support from the Delphi panel was a proposal to improve the accuracy of existing data sets regarding people with disabilities and workplace accommodations, in the hope that doing so would allow for a greater understanding of the current state of workplace accommodations.

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GA2	Promote better understanding of barriers to increased employment of persons with disabilities from the employer point of view. How desirable is this objective?	58%	39%	2%	0%
GA1	Development of examples and models for corporate implementation of accommodations and hiring persons with disabilities. How desirable is this objective?	50%	40%	6%	2%
GA3	Improve the accuracy of existing data sets regarding people with disabilities and workplace accommodations, which will allow for greater understanding of the current state of workplace accommodations. How desirable is this objective?	36%	54%	4%	4%

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GA2.1	Development and dissemination of resources to educate employers about the economic incentives associated with hiring people with disabilities and provision of workplace accommodations. How desirable is this goal?	70%	22%	3%	3%
GA2.2	Development of resources to educate employers about the benefits associated with telework/telecommute options and how best to develop and manage such work arrangements. How desirable is this goal?	51%	38%	6%	3%

When asked what other awareness focused initiatives could be developed to advance opportunities for people with disabilities in the workplace, notable open-ended responses included the development of an "employer peer network," in which employers could share their experiences in providing workplace accommodations, with insights into what worked, what didn't work, costs, and impact on the person's ability to do the job tasks. As one respondent noted, "Sometimes hearing from a peer if something works means more than any government publication." Other responses also focused on the need for greater employer awareness, either through case studies, dissemination of information on alternative loan programs to facilitate accommodations, or through training sessions led by VR professionals. However, a common emphasis was made about the necessity of avoiding "reinventing the wheel."

Regarding awareness goals, some respondents also addressed employee-related issues, too. One noted that participation by employees with disabilities in employer or community networks/clubs such as the Chamber of Commerce, Lions Club, or Rotary Club, could further networking and relationship building and serve as excellent ways for building awareness. A more critical assessment however addressed two key points: 1) a need to focus on promoting the civil rights side, rather than a reliance on charity organizations, of getting this large group of unemployed Americans to have a fair shot at employment, and 2) the possibility that employers who tend to hire persons with disabilities for economic incentives are not likely to be good employers. "I think that we should leave that alone as a selling point," one respondent observed regarding this last point. A couple of participants also articulated a notable criticism to the use of telework as a workplace accommodation. In the words of one, "I do not believe that telework is the answer for the majority of persons with disabilities. They need to be in the workforce, out of the home."

6.2 Policy/Regulatory Goals

When we inquired about what other policy/regulatory initiatives or strategies could be developed to help advance the opportunities for people with disabilities in the workplace, participant answers ranged from placing emphasis on local government involvement in transportation and facility accessibility, to utilizing continuing education to dispel employer fears about the problems with regulations governing accommodations. Some more specific recommendations were also made. For example, one respondent suggested that OSHA regulations might be too burdensome for employers. Yet, one thread that seemed to be common to the myriad suggestions received was a need for regulatory flexibility to accommodate the wide range of disability needs and serve the interests of both able-bodied people and people with disabilities.

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GR2.1	Revise existing telecommunications regulations to include access by people with disabilities to newer technologies such as e-mail and wireless communication. How desirable is this goal?	61%	35%	3%	0%
GR2.2	Provide more clarity in OSHA workplace safety regulations regarding safety in telework/telecommuting work environments. How desirable is this goal?	45%	45%	3%	6%

6.3 Economic Goals

Regarding economic goals, additional tax incentives received the greatest measure of support from the Delphi group. But some more specific initiatives included, 1) personal tax credits for people with disabilities who choose to work, based on income earned, 2) increased use of AT lending programs, and 3) strategies of continuing education. However, one participant warned that, "if you create economic value in hiring persons with disabilities, some employers will hire persons with disabilities just for the cost value - this does not teach social responsibility, in my experience."

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GE 2.1	Develop state or federal initiatives, such as subsidies for VR services, to help employers offset the cost of providing workplace accommodations. How desirable is this goal?	61%	22%	9%	6%

6.4 Technological Goals

Technology goals examined by the Delphi panel addressed ICT issues quite prominently, such as the development of websites with audio assistance and sign language or the usefulness of Microsoft's disability options. However, technology was not limited solely to computer issues, as one participant's reminder that the tables must be just as accessible as the computers on which they sit, or to allow for adjustable lighting, attests.

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GT2.3	Initiate public awareness/information campaigns to encourage job recruitment websites to consider the accessibility needs of people with disabilities. How desirable is this goal?	70%	29%	0%	0%
GT2.1	Develop new technologies or adapt existing ones (e.g., cellular and SMS text communication devices) to address the needs of employees with disabilities (e.g., receiving message details, egress) in case of an emergency at the workplace. How desirable is this goal?	61%	38%	0%	0%
GT2.2	Develop regulations to mandate web accessibility for private and public websites. How desirable is this goal?	54%	38%	3%	3%

6.5 Social Goals

Social-related goals discussed by participants included the promotion of an inclusion philosophy that goes beyond the workplace to consider other social spaces such as churches, schools, and public organizations. But there were some specific goals put forward regarding the employer, such as 1) mentorship programs and employer sponsorships for job trials, as well as employer investment in natural supports, 2) listserve resources to engage VR professionals, employers, and employees about their common issues and goals, and 3) national recognition of companies that have made strides in the employment of people with disabilities. However, not all respondents were so positive about such initiatives. One noted, "This cannot be legislated. If the employer promotes a workplace in which people are encouraged to work in teams, there is a culture of friendships and support and people with disabilities will be ok. It is hard to force a culture on someone who may not understand the importance of social inclusion and a diverse workforce." Another openly criticized the role of social programs and advocacy: "Good corporate team practices can 'accommodate' for all of the above. Pointing out the need for any further social programs devalues the people with disabilities and plants yet another seed of doubt in the minds of employers. To the contrary, when people with disabilities naturally fit in, overall corporate culture is enhanced. This almost always happens, and again, more hiring will lead to more of this natural benefit to be seen. More

hiring is the only way to overcome the problems. Proof of benefit must be seen to be embraced. Too much advocacy can work against a cause."

Q	Item	Scale			
		Very Desirable	Desirable	Undesirable	Very Undesirable
GS 2.1	Development of models and materials to educate employers about the capabilities of employees in the workplace. How desirable is this goal?	54%	41%	3%	0%
GS 2.3	Conduct best practices research to help develop initiatives such as worker partnership programs (i.e., "buddy system") to help integrate older workers into workplace environments. How desirable is this goal?	45%	51%	3%	0%
GS 2.2	Development of models and materials to educate employers abut workplace inclusion, especially including employees in the social environment of the workplace beyond an individual's workspace (cafeterias, break rooms, conference rooms, off-site gatherings, etc.). How desirable is this goal?	48%	45%	6%	0%
GS 2.4	Provide employers with information on how to prevent the social isolation and other complications associated with telework. How desirable is this goal?	35%	58%	6%	0%

7.0   Policy Options

7.1 Awareness Options

In the first round, the Delphi panel was asked to consider the feasibility of a set of preliminary policy options in the awareness and policy/regulatory arenas. While a majority of the respondents agreed with the feasibility of all the options presented, some drew more mixed reactions than others. Most popular was an option to involve people with disabilities in the emergency plan development process, which was in accord with the strong agreement of the Delphi panel regarding the importance of the issue. Also popular was the feasibility of increased outreach efforts to encourage corporate awareness about information technology accommodation resources such as the Job Accommodation Network (JAN) and World Wide Web Consortium (W3C). Given that respondents considered it very important that employers might be unaware of accommodations they could make for their employees, agreement on the feasibility of this particular option may help address this important issue.

Delphi respondents were asked two open-ended questions about options. First, when asked what other awareness focused initiatives or strategies could be developed to help advance opportunities for people with disabilities in the workplace, many responded that there is a need for both a central clearinghouse for information, perhaps organized at the federal level, and awareness campaigns through the media to inform the public of the availability of such resources. Second, when asked what other

policy/regulatory initiatives or strategies would provide the greatest benefit to people with disabilities in the workplace, leading responses included, 1) development of a policy model that integrates aging and disability within reasonable accommodations and AT, 2) updates to Section 255 of the Telecommunications Act of 1996 and Section 508 of the Rehabilitation Act of 1973, and 3) revisions in health care and benefits policies so people with disabilities do not automatically lose benefits after gaining even minimal employment, thus creating a disincentive to seek work.[2]

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OWA 1	Increased outreach efforts to encourage corporate awareness about information technology accommodation resources like the Job Accommodation Network (JAN) and the World Wide Web Consortium (W3C). How feasible is this policy option?	33%	62%	4%	0%
OSR2	Involve people with disabilities and disability organizations in the emergency plan development process. How feasible is this policy option?	64%	28%	6%	0%
OSR1	Development of federal standards to emergency equipment more universally accessible. How feasible is this policy option?	34%	53%	11%	0%
OWR 2	Develop policies to facilitate updating telecommunications regulations at shorter intervals to keep up with pace of technological innovations and societal needs. How feasible is this policy option?	17%	68%	11%	2%
OAR1	Development of federal programs to encourage accommodation of aging workers. How feasible is this policy option?	34%	52%	13%	0%

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OA 2.1	Investigate the innovative approaches (wikis, blogs, social networks, virtual environments) to create a central clearinghouse of information for employers and employees, perhaps within the Department of Labor's Office of Disability Employment Policy or the National Institute on Disability and Rehabilitation Research, about the resources for workplace accommodations. How feasible is this option?	29%	58%	9%	3%

In Round 3, we probed awareness options intended to achieve the most desirable goals and address the most important issues identified by the Delphi panel. In most of these instances, policymaking and regulatory intervention at the federal level was proposed. Some items also considered

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[2] Regarding proposals to update Section 508, the U.S. Access Board has been at work on this issue since 2006. See http://www.access-board.gov/sec508/update-index.htm for more information.

the role that national-level stakeholders in the private sector could play in meeting these needs.

The most feasible options pertained to labor and employment policy, implemented specifically through the Department of Labor's Office of Disability Employment Policy (ODEP), to address the issues of employer misunderstanding and employee unawareness on the issue of workplace accommodations. In the first instance, ODEP might work in collaboration with the Department of Justice's ADA Task Force to survey employers and businesses as part of an effort to gather data on and assess the most common misconceptions about workplace accommodations. With the collection of this data, it would then be possible for federal policymakers to clarify its policies. In the second instance, ODEP could pair up with the NIDRR-funded Disability and Business Technical Assistance Centers (DBTACs) to equip employees with disabilities with the information and resources necessary to help them effectively request reasonable accommodations.

Though somewhat less feasible in the opinion of our respondents, two other options received significant support. In one instance, employer peer groups arranged according to sector or industry could help bring employers together to discuss the issue of hiring and accommodating workers with disabilities, as well as share pertinent best practices. In another, NIDRR-funded projects might continue exploring the potential of new Internet resources (i.e. Web 2.0) to further the goal of accommodating workers with disabilities, especially where dissemination of information to employers is concerned.

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OA 3.2	The U.S. Department of Labor's Office of Disability Employment Policy (ODEP), in conjunction with the U.S. Department of Justice's ADA Task Force to conduct survey of business/employee stakeholders to assess key regulatory and legal misconceptions regarding workplace accommodations. How feasible is this option?	34%	61%	3%	0%
OA 3.3	The U.S. Department of Labor's Office of Disability Employment Policy (ODEP), in conjunction with the Disability and Business Technical Assistance Centers (DBTACs) and other relevant stakeholder groups to undertake informational campaigns directed at helping employees understand their accommodation needs and how to request appropriate accommodations. How feasible is this option?	55%	37%	7%	0%
OA 3.4	The development of employer peer groups, arranged by sector, to bring together employers to share information about making accommodations and obtaining VR resources, as well as share relevant case studies. How feasible is this option?	51%	33%	14%	0%

OA 3.1	National Institute of Disability Rehabilitation Research (NIDRR)'s projects, such as the Rehabilitation Engineering Research Center on Workplace Accommodations (WorkRERC) and the Disability and Business Technical Assistance Centers (DBTACs) to explore development of new Internet (i.e. Web 2.0) based resources to inform employers about the economic and social benefits of providing accommodations for workers with disabilities. How feasible is this option?	25%	51%	22%	0%

7.2 Policy/Regulatory Options

Round 3 also considered a number of options aimed at addressing the regulatory components of workplace accommodations. Taking into consideration the most salient issues and goals from the first two rounds of the Delphi, these items examined the potential of federal policymakers to address ongoing policy barriers in workplace accommodations. Of special concern here were the issues of telework, ICT access, emergency alerts and egress in the workplace, enforcement, and data collection. The options were proposed in such a way that the most relevant agency or office for a given issue was considered as the primary stakeholder to implement the given option.

Of the proposed options, an option for ODEP and OSHA to clarify employer obligations regarding telework received the greatest level of support. This option suggests that, while telework goals received mixed support from the Delphi panel, it remains important to address longstanding issues. Two other options that received strong support call attention to the role of ICT in the workplace. One involves the potential for the Access Board to better promote its efforts to update Section 508, while the other deals with the role of emergency communications for workers with disabilities. Finally, ADA-related options to ameliorate barriers to employment and workplace accommodations also received strong support.

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OR 3.2	The U.S. Department of Labor's Office of Disability Employment Policy (ODEP), in collaboration with the Occupational Safety and Health Administration (OSHA) to identify primary employer concerns related to providing telework as an accommodation for workers with disabilities and clarify any misconceptions regarding employers' regulatory obligations for off-site work (i.e. OSHA safety guidelines for off-site telework locations). How feasible is this option?	37%	59%	3%	0%

Q	Item	Scale			
OR 3.1	As part of its efforts to update Section 508 of the Rehabilitation Act of 1973, the Access Board would facilitate additional outreach seminars or workshops involving business stakeholder groups to disseminate findings and recommendations made by the Board. How feasible is this option?	55%	37%	7%	0%
OR 3.6	The FCC's Emergency Alert System (EAS), in consultation with the Disability Rights Office (DRO), to issue a Notice of Inquiry (NOI) to investigate employers' needs to consider people with disabilities when developing plans for the dissemination of emergency communications in the workplace. How feasible is this option?	51%	40%	7%	0%
OR 3.3	The U.S. Department of Justice's ADA Task Force to consider adapting enforcement programs for the public accommodations statutes of the ADA (Titles II and III), such as Project Civic Access, for enforcement of the employment statute (Title I). How feasible is this option?	33%	59%	7%	0%
OR 3.4	The U.S. Department of Justice, in collaboration with the Equal Employment Opportunity Commission (EEOC) and the Department of Labor's Office of Disability Employment Policy (ODEP), to consider how barriers to public accommodations covered in the ADA's Titles II and III adversely impact the employment of people with disabilities. How feasible is this option?	25%	62%	7%	3%
OR 3.5	The U.S. Department of Labor's Office of Disability Employment Policy (ODEP) to develop a voluntary program for the collection of data pertaining to workplace accommodations by employers (with the option of anonymity for legal protections) in order to discern prevalent accommodations practices and suggest possible best practices. How feasible is this option?	44%	33%	22%	0%

7.3 Economic Options

Two economic options received support from a majority of respondents. However, an item to adapt the federal tax code to provide credits to more businesses and employers of individuals with disabilities received substantially more support than an option to expand state AT loan programs.

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OE 3.2	Federal lawmakers to adapt provisions of the Small Business Tax Credit, Internal Revenue Service (IRS) Code, Section 44: Disabled Access Credit, to cover employers who may not necessarily qualify under the small business limitation, in order to expand tax incentives for the provision of workplace accommodations by employers. How feasible is this option?	51%	40%	7%	0%

Q	Item				
OE 3.1	The Telecommunications Equipment Distribution Program Association (TEDPA), in association with its member state associations, to examine development of equipment distribution programs aimed at providing assistive technology through loan programs to offset the costs of making accommodations faced by employers. How feasible is this option?	29%	51%	18%	0%

7.4 Technology Options

Finally, the policy Delphi probed on policy options to mitigate barriers to technology as part of workplace accommodations. Three of the options, in particular, stood out, especially as they addressed issues of importance and fulfilled key goals identified by respondents. Most popular was an option to inform employers about the need for more accessible websites, especially given that most job recruitment and applications now take place online. Also important was an option to improve emergency communications and egress by workers with disabilities. Such an option addresses one of the leading goals of the Delphi, the development of emergency plans and procedures accessible to and mindful of employees with disabilities. Finally, participants supported an option that NIDRR fund research into online "workspaces" to increase the employment of more individuals with disabilities, as well as provide an additional accommodation within the workplace.

Q	Item	Scale			
		Definitely Feasible	Feasible	Possibly Unfeasible	Definitely Unfeasible
OT 3.3	The Department of Labor's Office of Disability Employment Policy (ODEP), in collaboration with other stakeholders, to undertake campaigns to inform employers about the importance of accessible websites and other online resources for the purposes of job recruitment. How feasible is this option?	55%	44%	0%	0%
OT 3.2	In consultation with the FCC's Disability Rights Office (DRO) and Emergency Alert System (EAS) authorities, stakeholders identified in OT3.1 to promote telecommunications technologies to address the needs of people with disabilities in the workplace (e.g., receiving message details, providing egress information) in case of an emergency. How feasible is this option?	44%	51%	3%	0%
OT 3.4	Research efforts by stakeholders such as NIDRR and its projects (i.e. RERC on Workplace Accommodations) to focus on exploring new "workspaces" such as online work collaborations, as an approach for workplace accommodations for people with disabilities. How feasible is this option?	29%	66%	3%	0%

OT 3.1	Wireless telecommunications industry groups with significant interest in disability issues, in collaboration with other relevant stakeholders such as the Rehabilitation Engineering Society of North America (RESNA), to promote the development of new technologies or adaptation of existing ones (i.e. cellular and SMS text communication) to address the needs of people with technologies within the workplace. How feasible is this option?	44%	40%	14%	0%

8.0 Discussion and Analysis

In order to make the workplace of the near future more available to people with disabilities, it is important that it be made more accessible, in both a physical and social sense. Toward those ends, respondents generally agreed that an increased use of universal design principles and increased awareness of the abilities and characteristics of employees with disabilities by their employers would contribute to the creation of a more accessible workplace. However, regarding the role of telework and telecommuting options as one of those means, the Delphi panel was less convinced of the reliability of two forecasts. First, a majority, with notable dissent, found that telecommuting would become more prevalent in the American workplace. But half of the respondents also believed it risky to assume that a growth in telework as a work option for people with disabilities would necessarily increase the group's overall employment.

Most of the open-ended comments for forecasts tended to be rather pessimistic about the future of employment accommodations for persons with disabilities. In particular, they focused on greater competition for jobs that might disadvantage PWD, the continued lack of employer awareness about accommodations and the "paralyzing" effect of current government rules on this subject, and the introduction of new EIT and ICTs that may not take the needs of employees with disabilities into account. One commenter even noted that even if telework continues to grow, it will privilege those already with jobs rather than those hoping to use it as a means to gain employment. However, there are some positive comments which focus on the role that both UD concepts and AT will enable more people to gain access to the workplace. Others suggest that employers may become more enlightened about the contributions that workers with disabilities may make to the workplace and, as a result, become more receptive to accommodations.

One key finding which emerges from the Issues questions asked in the Delphi is a need for better data collection on workplace accommodations. Most important, employers lack clarity on what is defined as an "accommodation." First and foremost, there is a need to define and operationalize the concepts related to workplace accommodations for

persons with disabilities. If employers don't understand the wide range of accommodations that may be provided for their employees, some respondents noted, then the range of possibilities may seem unnecessarily narrow for employers.   A couple of respondents noted that not all accommodations need to based around AT or other expensive technologies, and it is important to convey this broad understanding of accommodations to employers. In short, it is necessary to make employers aware of the many types of workplace accommodations that can be implemented for their employees. In addition to making employers more aware of the types and range of accommodations, there is also a need to provide better data on the employment situation of persons with disabilities and the accommodations provided for such workers.

A salient finding of the Delphi, and the strongest point of agreement among the Delphi panel, regards employee safety and emergency preparedness. The strongest majority of respondents found that emergency plans may not be designed to fit the needs of people with disabilities, and employers need to better consider the needs of employees with disabilities during emergency situations.

Most of the comments related to awareness focused on employer-side issues. Either employers simply refuse to make accommodations, refuse them on the grounds of cost, or don't know much about the needs of employees, the accommodations process, or resources available to them. However, another important aspect, not listed above, is simply the attitudes of employers toward hiring persons with disabilities—either they fear co-worker reactions/violence, are unaware of the skills, loyalty, and longevity that an employee with a disability can bring to a job, or suffer from negative perceptions in general of persons with disabilities. There are some employee-side issues, however. Most relate to an over-zealousness of employees with disabilities to enter jobs that may not be congruous with their capabilities and a possible presumption that all accommodations are reasonable (telework is such an example, as some jobs may require physical presence for fulfillment of essential job functions).

Just as emergency-related issues elicited strong support by the Delphi panel, so too did issues relating to the accessibility of the ICTs, the Internet, and telecommunications services. A distinct majority of respondents cited as important the possible inaccessibility of the Internet for persons with disabilities. Also important was the possibility that legislation and rulemaking mandating the accessibility of telecommunications services for persons with disabilities is failing to take into account newer technologies such as e-mail and wireless telecommunications services. Despite strong agreement over the importance of federal policies to ensure accessibility to

telecommunications and Internet services by persons with disabilities, the Delphi group was split over the importance of federal regulation for telework and telecommuting. As many respondents were convinced that the issue was only slightly important or unimportant as those who found it very important or important. Once again, the Delphi group was mixed on the importance of this issue.

Both economic issues considered by the Delphi panel—1) that ICT manufacturers may be unaware of markets for universally designed products, and 2) that employers are not willing to pay the cost for workplace accommodations—received strong support from a distinct majority of the Delphi participants.

The first issue reinforces findings that suggest a need for broader awareness about the needs of persons with disabilities in the workplace, not just among employers, but among all stakeholder groups who may influence the quality of employment and workplace accommodations experienced by persons with disabilities. The findings in this issue from Round 1 echo the findings of the Wireless RERC's Delphi on the use of and access to wireless technologies by people with disabilities. In short, workplace accommodations are not merely an employer-employee issue, but one that also involves manufacturers and designers (and many other groups). If manufacturers and designers are not made more aware of the needs of people with disabilities in the workplace, then the issue of workplace accommodations may be rendered somewhat moot: What good are employers receptive to making accommodations for their employees if the technologies and services are not there to support such needs?

Yet, the second issue considered reminds policy researchers that the issue of workplace accommodations remains, in many respects, an employer-side issue. If workplaces are to be made more accessible to people with disabilities, employers must be willing to make accommodations for employees who need them. Consider the inverse of the previous question: What good are technologies and services to support accessible workplaces if employers are unwilling to pay for them? The conundrum is that the participation of all stakeholder groups is important to the success of increasing workplace accommodations for employees with disabilities, not to mention increasing employment prospects and outcomes for people with disabilities.

Findings for the technology issues reiterate the importance of website and ICT accessibility for people with disabilities. Particularly noteworthy is the Delphi panel's agreement that government website accessibility is an important issue. So, too, is the suggestion that recruitment websites run by

employers may not be accessible to jobseekers with disabilities. This issue raises another important point—workplace accommodations should consider the needs of not only those individuals who are currently employed but those seeking employment. As many of the resources used to locate, research, and apply for employment opportunities, not to mention many employer recruitment tools, are now located on the World Wide Web, it is unclear whether these resources and services have been made more accessible to persons with disabilities. The Internet opened new avenues for seeking and obtaining employment, but if such methods are inaccessible because screen readers are unable to read website text, for example, then these new methods may be less accessible than more traditional means of finding jobs. As such, certain types of employment, especially in technological fields, may be less available to jobseekers with disabilities.

Along with website and ICT accessibility, Delphi participants also affirmed the importance of emergency services and procedures as they relate to technology. A smaller but clear majority of respondents also noted the importance of issues related to technology and aging workers. The Delphi panel found it important that aging workers might need special training to use new technologies in the workplace, or that such workers might show resistance to them.

The social component of workplace accommodations has been discussed already, especially in the area of awareness. But this all illustrates just how important social factors are in workplace accommodations and to the employment of people with disabilities. Delphi participants strongly agreed that the possibility that employers and co-workers underestimate the ability of employees with disabilities to perform a certain job represents an important issue. Respondents also noted that the assimilation of workers with disabilities into a workplace is an important social dimension when considering workplace accommodations.

The possibility of such negative attitudes toward workers with disabilities and their accommodation in the workplace is especially true regarding aging workers. The Delphi panel found it important that older workers might be affected adversely by corporate culture and a reticence by employers to hire such workers. At the same time, aging workers who are employed might be unaware of the availability of accommodations or their eligibility to receive them. Though the Delphi did not probe this issue further, research on the subject suggests that aging workers identities of themselves as not having a disability might contribute to such attitudes.

Delphi participants were also asked to consider the social issues of telework and telecommuting. While reaction to the various telework/telecommuting

issues has been mixed so far, a majority of respondents considered the various social dimensions of telework and telecommuting to be important issues. The potential loss of social capital and relative lack of upward social mobility for workers in such employment arrangements was viewed as an important issue by the Delphi respondents. While this set of issues has probably garnered the highest degree of support of all those asked about telework and telecommuting, the results are not necessarily incongruous with other sets that received mixed results from the panel. Whereas other issues sought to focus on the positive aspects of telework and ways to widen its usage and improve the experience, leading to uncertainty among the respondents regarding the importance of such issues, this set of questions generally focused on more negative aspects pertaining to telework and telecommuting. That a majority of Delphi participants saw these negative issues as important seems agreeable to the mixed reaction to viewing positive issues as important.

9.0 Conclusion

The policy Delphi revealed a number of findings that will undoubtedly help policymakers to understand ongoing issues surrounding workplace accommodations, especially as key stakeholders see them. However, a number of findings stand out.

First of all, respondents agree that developing a common understanding of "workplace accommodations" and the collection of data on practices is a very important issue. Without developing a framework for what constitutes an accommodation, it will remain difficult for stakeholders to discuss the issues substantively. In addition, there is a need to collect data on the incidence of accommodations and, perhaps more importantly, what they cost. A widely held perception among members of the Delphi panel is that employers either fail to provide accommodations because they are unaware of the range of options available to them, or that they refuse to pay for them because they assume that they are too expensive. While the related option to develop a best practices database suggests that data collection will not be easy because of employer reticence to collect or divulge data, the salience of this issue in not in doubt.

Second, the Delphi reminds us that many of the issues pertaining to workplace accommodations remain employer-side issues. Employers are ultimately responsible for making accommodations for their employees with disabilities. As such, it remains important that they are educated about the types of accommodations available and their costs, and that they are incorporated as key stakeholders in raising awareness about the issues of workplace accommodations. However, it is not enough to presume that

employers are willing to make accommodations once they have received the appropriate facts and figures. The participants in the Delphi also stress the importance of creating a workplace where employers and co-workers are receptive to having employees with disabilities and are made aware of the invaluable contributions that such workers can make to the workplace.

Third, emergency preparedness and safety issues received the highest degree of support among the issues considered by the respondents. It is imperative that these issues be given due consideration when crafting subsequent goals and options.

Fourth, the Delphi panel tended to minimize, surprisingly, the importance of telework and telecommuting options for employees with disabilities. While it has been presumed in the scholarly and policy literature on the subject that telework as a workplace accommodation will continue to rise in the coming years, our respondents were not as convinced of the importance of the issue. To a lesser extent, respondents also believed that the issue of aging workers may be overstated somewhat, also. Because these issues have been presumed to be important, it is imperative that subsequent rounds of the Delphi explore the dimensions of these issues further.

Finally, the Delphi participants appear to be ambivalent about the feasibility of any policy options that rely solely upon federal mandates or rulemaking for their success. It is also important the subsequent rounds determine whether such a trend has developed because of a preference for free market solutions and voluntary involvement, or for some other reason.

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