

Toward a Single Global Market for Assistive Technology

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Abstract. Public and private sector programs in North America parallel programs underway in the European Communities. Pursuing a single global market for assistive technology will reduce duplication, leverage resources, and accelerate progress toward our shared goals. This paper presents a rationale, reviews relevant programs in North America and invites participation in a global effort.

1 Introduction

The European Community established the Technology Initiative for Disabled and Elderly People (TIDE) in 1991. TIDE's major objectives are to improve the EC's environment for pre-competitive research and development in assistive technology, and thereby increase the technology's value and accessibility. To this end, TIDE established the concept of a single EC market for assistive devices. TIDE is implementing the single market concept through research and development projects on specific technologies and applications, along with supporting projects on broader issues such as standards and information distribution.

2 Need for a Single Global Market

The EC has many reasons for promoting a single market in assistive technology. Some are:

- 1) The number of persons *aging with disabilities* is increasing due to reduced mortality rates for persons with developmental disabilities and degenerative diseases. Emergency and trauma medicine enables people to survive injuries that were previously fatal.
- 2) The number of persons *aging into disabilities* is increasing due to the general increase in average life spans, and the aging of the post-World War II population cohorts.
- 3) The costs of dependent care continue to escalate, making the costs associated with preserving independence relatively attractive. Sustaining independence through assistive technology is a cost-effective option for a portion of persons with disabilities and the elderly.
- 4) The marketplace for assistive technology is fragmented. Marketers, clinicians and consumers have difficulty finding each other. Marketing costs inflate retail prices, but consumers make sub-optimal decisions without good information. Cost reimbursement and product liability issues remain significant disincentives for marketers and consumers alike.

The circumstances driving TIDE's programs are equally compelling to the rest of the world community. In North America, the United States and Canada are funding programs, and consumer and professional organizations are active. Defense-based industries are exploring technology transfer options, but they encounter the long-standing barriers to estimating

market sizes and product revenues. The market's climate remains uncertain as funding, reimbursement, regulation and liability problems persist. A single market approach would focus North America's resources and prompt policy reforms.

In the Far East, Japanese industry/government research centers explore assistive technology, because Japan faces significant issues in eldercare and building access. Russia as yet lacks adequate capital to educate their health professionals, but they recognize the need. Countries in Southern Asia, Africa and South America are considering the civic and economic value of "appropriate" assistive technologies -- those designed for local production and support. Asia and the Southern Hemisphere need a single market approach to effectively translate and apply the installed base of assistive technology from nations in the Northern Hemisphere.

3 U.S. Programs with Global Application

3.1 Federally-Sponsored Research and Development

Many federal agencies fund programs in assistive technology. The Department of Education's National Institute on Disability and Rehabilitation Research (NIDRR) funds sixteen Rehabilitation Engineering Research Centers, and thirty-six Rehabilitation Research and Training Centers. These centers conduct research and development, and information dissemination on specific disability or technology areas. NIDRR also funds the state Technology-Related Assistance projects, mandated to provide consumers with information and referrals on assistive technology devices and services.

The Department of Veteran Affairs operates the Technology Transfer Service to evaluate and fund prototype devices useful for disabled veterans. The DVA has four regional Rehabilitation Research and Development Service centers, where DVA medical researchers collaborate with university faculty on device development. The National Institutes of Health's National Center for Medical Rehabilitation Research funds research on functional impairments and outcomes. The National Science Foundation operates the program, Engineering Senior Design Projects to Aid the Disabled, which supports student engineers at twenty universities in the design and construction of customized assistive devices.

In addition to these targeted programs, sixteen federal departments support over six hundred research and development laboratories. Members of the Federal Laboratory Consortium (FLC) volunteer to collaborate with private companies and state and local governments. Participating laboratories are organized into six geographic regions. Locator services provide information on their program interests and resources. Federal laboratories sponsored by the Department of Defense, the Department of Energy and the National Aeronautics and Space Administration (NASA), are all now evaluating the field of assistive technology as an application area for their advanced materials, products and systems.

3.2 Private Sector Development and Application

The Electronic Industries Association's Assistive Devices Division is developing design standards for devices with electronic components. The National Association of Medical Equipment Suppliers is collaborating with RESNA to improve the quality of marketing information. Manufacturers and suppliers of assistive devices are partnering with researchers, clinicians and consumers to improve the exchange of products and information. The U.S. government supports private sector activity by having federal agencies allocate

money to fund the Small Business Innovation Research program, where small businesses in the private sector compete to provide research and development support. These small businesses often seek partnerships with outside firms to secure needed expertise for projects.

3.3 Professional Organization Information Dissemination

Professional organizations in the U.S. have much to offer. For example, RESNA as an interdisciplinary society, sponsors special interest groups in technology transfer, information networking and international applications. The professional associations in occupational therapy, physical therapy, speech and hearing, and special education, all have assistive technology concentrations. The American Society on Aging is addressing assistive technology and home modifications for older persons. The Institute of Electrical and Electronic Engineers now has a division for rehabilitation engineering. These organizations all have international chapters, improving opportunities for global cooperation.

4 Summary

We all need a single global market for assistive technology. This review shows the wealth of expertise and resources that remains largely untapped between nations. Developed countries could readily identify existing products, share prior research and focus available resources. Developing countries could emulate the best practices in knowledge transfer and technology transfer. A single global market would decrease overhead costs for marketers and decrease access costs for consumers -- making more resources available without additional investments. Producers and consumers have much to gain, and nations have little to lose by establishing a single, global market. Let the dialogue commence with a global vision.

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