# Consumers with Disabilities as Co-developers

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**ABSTRACT**
The panel session presents and discusses why and how consumers with disabilities are participating in various elements of product design and development. Due especially to public policy and public relations pressures, companies in the information industry are improving their responsiveness to the needs of their customers with disabilities. Since in-house design staffs usually lack detailed knowledge about disability and how functional limitations affect product usability, there is a perceived design resource gap. One method companies are using is to bring these consumers into their businesses as consultants for design and other purposes. The panel will discuss some key programs, current trends, and the implications for participatory design in general.

**Keywords**
Disability, accessibility, product design, universal design, user model, Telecommunications Act

**INVISIBLE USERS**
Although rehabilitation clinicians have recognized the value of their clients' autonomous participation in their own treatment [1], companies that manufacture much of the built environment have not. People with disabilities are frequently "designed out" of products and systems, and are rendered unable to interact with technology as either employees or consumers. This product performance gap represents more of a failure of the design process than a "natural" result of any given disability itself. In fact, accommodations for most functional limitations require neither new technology nor large investments. People with disabilities are simply not considered within the range of "typical" users, and so disappear from product planning. Negative business attitudes about these users, especially about their interest in new products, purchasing power, and demographic size, contribute to the problem.

Until recently people with disabilities were expected to use special assistive technology (AT) to achieve their goals. AT devices either perform the desired function as standalones, or allow the user to control a mainstream device by means of some compatible connection. AT is often costly and does not cover the full range of functions a person might want to perform.

"Universal design" (UD) promises to reduce the need for AT by building accessibility features into mainstream products. Often these features benefit all users, such as pay telephones with volume controls, sidewalk curbcuts, and speech recognition. There is a growing recognition that usability can be affected by situational and environmental conditions as well as by disability. If I am carrying two bags of groceries, a round doorknob looks

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like a barrier to me; if I am in a noisy airport, a telephone call can be a frustrating babble. UD brings people with permanent functional limitations back into the mainstream – and back into the marketplace struggle for respectful attention from mainstream companies and their designers.

## ANTIDOTE TO ARROGANCE

That struggle begins with how marketers and designers model who a typical user is. It is a cliché that they too often project themselves (stereotyped as six-foot tall white male Americans, age 25) into their designs. When given enough motivation to understand other users, say for the international market, they may consult respected ergonomic resources. However, mainstream designers and engineers are taught little or nothing about people with disabilities. In addition, there is no consistent, codified body of knowledge about the performance and preferences of people with disabilities. In most cases, designers recognize this gap. Disability is so foreign to their personal experience that it disrupts their ability to project themselves as typical users – a good thing all around, PD-wise.

This makes people with disabilities the only recognized – the only possible – true experts on their own situation. Although, like average consumers of all types, most of them are not technologically sophisticated, disabled end users can be effective collaborators in the design of products meant to be attractive to them. Not only are they clearly aware of the barriers products and features often present, they are also past masters in devising grassroots accommodations that should interest designers.

## EXPERIMENTS IN PARTICIPATION

The "invisibility" of disabled consumers has been radically reduced whenever people with disabilities have been consulted regarding their needs and preferences. So far only a few companies have taken thorough steps to do this. Case studies of this design inclusion will be presented.

Some experience indicates that disabled users can be a "usability acid test", challenging designs in ways that redound to the benefit of non-disabled users. Often the sheer mechanics of setting up the collaboration, such as sending out design documents in accessible formats, has moved the process forward. "Champions" within the companies have used the participatory programs to reach other internal staff and promote their efforts. These programs can be said to be a nexus of a "Universal Design movement" that encompasses self-selected individuals within and outside the corporate sector.

## CAN PARTICIPATORY DESIGN BE MANDATED?

A form of participatory design has been mandated as part of the Telecommunications Act of 1996. Regulations covering Section 255 of the Act require telecommunications service providers and equipment manufacturers to make their products and services "accessible to and usable by people with disabilities." One way they are encouraged to do this is to work with disability-related organizations and individuals both in re-engineering their new product processes and in designing their products and services.

The history of these provisions and the current plans of telecommunications companies, policy makers, and disabled consumers and advocates will be included in the presentations and discussions. There may be interesting implications for the rest of the participatory design movement.

## PANEL MEMBERS

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