

Development of Uniform Standards for Cognitive Technologies

Peter W. Axelson, MSME
Beneficial Designs, Inc.
Minden, Nevada



Goal

Increase access to technology for people with cognitive disabilities

Develop standards for cognitive technologies:

Household products

Consumer electronics

Internet

Objectives

- 1) Identify aspects of technology standards that have implications for users and address the needs of people with cognitive disabilities
- 2) Work with appropriate bodies, including implementers as well as standards developers, to create implementable standards that address these aspects of technology

Objectives (Cont.)

- 3) Draft technical standards for Assistive Cognitive Technology (ACT)
- 4) Research to support the development process of Assistive Cognitive Technology (ACT) Standards
- 5) Promote adoption of standards that address these aspects of technology within the appropriate bodies

Benefits of Standardization

Informed consumers

Educated technology developers

Uniform safety testing

International consistency

Target Groups

People who have cognitive impairments or disabilities:

Alzheimer's

Down's Syndrome

Attention Disorder

Learning Disability

Brain Injury

Parkinson's Disease

Cerebral Palsy

Stroke

Target Groups

People who are at different developmental stages:

Children

Elderly

People who have difficulty communicating or speak a different language

Ease-of-Use Rating System

Example:

Simple versus complex cell phone

Cognitive Ranking: A

No excess programs
Easy function buttons
Larger print text
Larger button size
Color contrast
Easy to grasp shape
Louder speaker



Cognitive Ranking: C

Many application layers
Multiple programs
Email
Camera
Calendar
Non-universal iconography
Small print text
Small button size



Products

Communication (Phones)

Entertainment (TVs/games)

Household Products (Appliances)

Self Care (Clothing/bathroom items)

Transportation (Bus routes)

Time Reminders (Clocks/alarms)

Computers

Hardware:

- Setup

- Internet Connection

- Controls

Software:

- Calendars

- Email

- Social Networks

Evaluation Criteria

Switch activation force	Actuation feedback
Product shape/size	Switch size/profile
Color contrast	Text size and font
Number of layers	Language level of text
Complexity of function	DB of any audio output

Survey!

We need your input IF you represent or work with people with cognitive disabilities for example:
researchers, educators, caregivers, staff at disability organizations, etc.

<http://www.beneficialdesigns.com/236survey/>

*Development of Uniform Standards for
Cognitive Technologies is funded by the
National Institute on Disability and
Rehabilitation Research under the US
Department of Education, Grant
#H133E090002 and the Coleman Institute for
Cognitive Disabilities*

Beneficial Designs, Inc.

Minden, Nevada

www.beneficialdesigns.com

mail@beneficialdesigns.com

775.783.8822 voice

775.783.8823 fax

*Working toward universal access
through research, design & education*