Barriers to Independence and Use of Technology

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Human-Machine Interface

Hardware and Software
General Approach

- Requirements definition
- High Level Design
- Detailed Design
- Development
- Testing
- Tuning
Specific Research

- Case Studies
  - Interviews
  - Records review
  - Standardized measures
- Usability Testing
- Wizard of Oz studies
Case Studies

- **Participants**
  - 6 consumers
    - 4 with developmental disabilities
    - 2 with acquired brain injury
  - 6 caregivers
    - 3 paid; 3 unpaid (family)
Case Studies

- Interviews
  - Daily routine
  - Transportation goals
  - Devices used
Case Studies

- Analysis
  - Qualitative using NVIVO coding software
Supports Model

Barriers

- Community
  - feeling safe
  - transportation

- Individual
  - executive function
  - planning
  - representing
  - evaluating
  - problem-solving

Supports

- what works
  - people
  - devices

- what doesn't work
  - vision
  - hearing
  - speech
  - dexterity

To be independent

- scheduling
- pathfinding
- representing
- executive function
- planning
- evaluating
- problem-solving
Conclusions

• Different perspectives on competence
• Caregivers report significant concern for consumer safety
• Privacy vs. safety needs to be more fully explored
• User interfaces to meet multiple needs