Mobile Devices in the Assistive Technology Industry

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Richard Mander Background
• Stanford - Psychologist interested in making technology understandable
• Apple, Group Manager - Advanced Technology, Interactive Media
• Zanzara, Principal - User-centered design of technology products
• Navman, CTO - GPS for car, boat, and personal navigation
• HumanWare, CEO - Blind, Low Vision, and Learning Disabled devices
• Board member - Several startups
• BigScreenLive, CEO - Internet access for seniors
• Interested in making technology work for people
• Universal design is the future
• Blog www.designedfortherestofus.com
• Helping UW Tech Transfer Office explore commercialization of research

The Assistive Technology Market
• Markets: How big? Growing? Well served?
• Blindness
  - Small percentage of the population
  - Slow growth
  - Well penetrated market: sympathetic.
• Low vision
  - Bigger market than blindness
  - Slower growth due to poorer visibility and longer life expectancy
  - Not well penetrated: hidden.
• Learning disabled
  - Multitude: 1/4 of all school age children
  - Growing due to greater awareness
  - A day away at a time: hidden.
• Augmentative and alternative communication
• Deafness
• Mobility
• Prosthetics
• Cognitive disability
• Aging?

Blind products
• Work in Braille, Text to Speech, Navigate
  - BrailleNote HumanWare
  - Brailliant HumanWare
  - Breeze HumanWare
  - Tiger ViewPlus
  - KMFB Reader

Screen Readers
• Read the screen to me
  - JAWS Freedom Scientific
  - Window-Eyes GW Micro
  - VoiceOver Apple
  - Mobile Speak Code Factory

Low vision
• Magnify text and my viewing experience
  - Clearview Optelec
  - Compact Optelec
  - Jory Enhanced Vision
  - Mobile Magnifier Code Factory
  - Graduate HumanWare
  - ZoomText Ai Squared
Learning Disability

- De-cypher text, read it, or help me read it

The major players

- Blind
  - HumanWare - Note-takers, DAISY players, Braille displays, GPS
  - Freedom Scientific - JAWS, Note-takers
  - Guine - Note-taker
  - Duxbury - Braille
  - Code Factory - Screen readers for mobile devices
  - Apple - Accessible PC, iPod shuffle
  - KNFB - KNFB Reader
- Low vision
  - A-Squared - Screen magnifier
  - Optelec - CCTV, Hand-held magnifier, Portable viewer
  - Freedom Scientific - CCTV, Hand-held magnifier, Portable viewer
  - HumanWare - CCTV, MyReader, Hand-held magnifier, Portable viewer
  - Enhanced Vision - Jovy
- LD: Learning disability
  - Cambium (Kurzweil 1000), HumanWare (ClassMate)

Challenges in the AT industry

- Small market
- Lack of funding
  - Niche market to the big companies
  - Many small companies lack investment in R&D
- Low volume manufacturing
  - Makes products expensive
  - Can lead to low quality
  - Where to buy?
  - How to market
- High support costs
- Most disabled people have limited funds
- Adapt mainstream products or build dedicated products?

Solutions

- Build a custom device
  - e.g. HumanWare Trekker Breeze
- Adapt mainstream devices
  - e.g. KNFB Reader
- Create special I/O peripherals
  - e.g. Braille displays with Bluetooth to PC
- Make mainstream products work for everyone
  - e.g. Apple iPod Shuffle and VoiceOver

Technology trends in mobile

- Processing power
  - Text to speech, Voice recognition, Image processing
- Storage
- Addition of sensors: accelerometer, camera, video ...
- Connectivity, bandwidth
- Positioning: GPS, FM, WIFI, integration
- PAN: Bluetooth
- Touchscreen UX
- Web 2.0 LAMP
  - Linux, Apache, MySQL, PHP
- Mobile devices with SDKs - Microsoft, Apple, Palm ...
- Cloud and SaaS
  - Storage and server power with no investment
  - Ability to scale on demand
- It has never been easier than now to create something

Finding an opportunity

- Who is the user?
  - How old, school, homework ...
  - What's the job they are trying to get done?
- Who is the customer?
  - Parent, Teacher, Doctor, Therapist, Employer
- People buy solutions not products
  - Your product will be part of a larger solution. Where can you add value?
Some opportunities

• Color picker for Blind
• Location flashlight for Blind
• Daisy reader for Blind/Low Vision
• Magnifier for Low Vision
• NIMAS reader for LD
• Games

• What are your ideas?