The ConnectAbility Challenge: Design Challenge for Digital Tech

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Co-Director, NYU Ability Project
Program Director, Online, Post-professional Clinical Doctoral Program (OTD)
• The AT&T-NYU Connect Ability Challenge was a three-month, global software development competition leveraging mobile and wireless technologies to improve the lives of people living with disabilities.
• This 2016 initiative, matched developer talent and client users with disabilities and $100,000 in prizes were given to the best projects.
Pre-Planning: Start Early

• Ongoing relationship with US telecommunications company, AT&T
  • Ongoing collaboration
  • Previous challenges Metropolitan Transit Authority AppQuest (2013); Connected Intersections (2015)

• Planning meetings
  • Early inclusion of technology users with disabilities (our exemplars)

• Collaboration with Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)
NYU Ability Project

- **Interdisciplinary, interschool** project with focus at **intersection** of disability and function and assistive technology

- **Active engagement** through
  - cross-school courses,
  - client-centered design and research,
  - collaboration with faculty and researchers across the University, and
  - collaboration with community partner organizations and individuals with disabilities.

- Emphasis on **human-centered design** approach to research and learning about assistive technologies

- Guiding Principle: Technology serves people best when they participate in its design. Whenever possible, we include people with disabilities in the design process.

- Guiding Principle: Multidisciplinary approach is better than trying to solve problems alone.
ConnectAbility Exemplars: The Heart of the Competition

- Xian Horn
- Jason DaSilva
- Paul Kottler
- Gus Chalkias
The Process

• Honored the 25th Anniversary of the passing of the Americans with Disabilities Act
• Encouraged exploration of leveraging technology to create better access for all people
• Encouraged open source code

• Hack-a-thon Kick Off event- 36-hour event
• 3-month challenge
• Judging
Hackathon Kickoff

• 36 hours
• Able to find team members
• Exemplars available
• Short lectures on related topics
Hack-a-thon Prize Winners
The Challenge

• Submission Categories:
  • Solutions for People with Sensory Disabilities
  • Mobility Solutions
  • Social / Emotional Solutions
  • Solution for People with Communicative and Cognitive Disabilities
  • Solutions Impacting Policy and Society

• Solutions must include a software component such as:
  • a native smartphone or tablet solution (iOS, Android, Blackberry, Windows Mobile)
  • a web solution (mobile or desktop)
  • a desktop solution (Windows PC, Mac Desktop)
  • software running on other hardware (including, but not exclusive to, wearable technology, open source hardware, etc.)
The Process: Community Events

- Panel Discussion at NYC Apple Store
- From Left:
  - Mike, Bawa, Moderator
  - Victor Calise, Commissioner of NYC Mayor’s Office for People with Disabilities
  - Anita Perr, NYU Occupational Therapist and co-founder of Ability Lab
  - Gus Chalkias, Technology Instructor at Baruch College Center for Visually Impaired Persons, and Exemplar for Connect Ability Challenge
  - Xian Horn, Lecturer on Disability and Self Esteem, and Exemplar for Connect Ability Challenge
## Prizes: $100,000 USD total

<table>
<thead>
<tr>
<th>Category</th>
<th>Prize</th>
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</thead>
<tbody>
<tr>
<td>Hackathon</td>
<td>$10,000</td>
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<tr>
<td><strong>Challenge</strong></td>
<td>$90,000</td>
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<tr>
<td>Grand prize</td>
<td>$25,000 Best in show</td>
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<tr>
<td>Best solution for motor function</td>
<td>$10,000 Best in functional category</td>
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<tr>
<td>Best solution for sensory function</td>
<td>$10,000 Best in functional category</td>
</tr>
<tr>
<td>Best solution of cognitive function</td>
<td>$10,000 Best in functional category</td>
</tr>
<tr>
<td>Best solution of emotional function</td>
<td>$10,000 Best in functional category</td>
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<tr>
<td>Runner up prizes for functional categories ($5,000/ea x4)</td>
<td>$20,000 Runners up from four functional categories</td>
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<tr>
<td>Best nonclinical application</td>
<td>$5,000 Best policy and advocacy-oriented solution</td>
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JUDGES

Zach Suchin
Co-Founder / CEO, Brand Knew

Aaron W. Bangor, Ph.D., CHFP
AT&T Lead Accessible Technology Architect

Marissa Shorenstein
President of AT&T New York

Anita Perr
Clinical Associate Professor, Department of Occupational Therapy, NYU

Jason DaSilva
Producer/Director of AXS Lab, @AXSMap

Paul Kotler
Student, Blogger, Lecturer, and Advocate, @pdkotler

Gus Chalkias
Assistive Technology Specialist in Blindness, @gussiec

Xian Horn
Teacher, Speaker, Blogger and Beauty Advocate, @XianForBeauty83

Jerry Weisman
Principal, Rehabilitation Technology Services / President, Assistive Technology Solutions, Inc.

Paul Schwartz
Assistive Technology Services Manager, Stout Vocational Rehabilitation Institute (SVRI), University of Wisconsin-Stout

Victor Calise
Commissioner of the Mayor’s Office for People with Disabilities
Judging Criteria

• **Quality of the Idea/Vision**
  Includes creativity and originality of the idea.

• **Implementation of the Idea**
  Includes how well the idea was executed by the developer, the sophistication of the technology, and the ease of use for the target user.

• **Potential Impact**
  Includes the potential impact the solution has on assisting people with disabilities overcome barriers that restrict and strain everyday life.

• **Demonstration of Feedback by the End User**
  Includes the extent to which user feedback was obtained, in particular with individuals who have a disability which the solution is designed to address.
Submissions

- 63 entries completed
- Representing 15 countries
NYU ABILITY PROJECT

Winners

ava - true autonomy to the deaf
A mobile application that transcribes speech into text. Ava, let's you see in
Pieter Doevendans

KinesicMouse
Nextgen hands-free computer access with 50+ input signals
Markus Proell

LOLA
LOLA—Laugh Out Loud Aist: Laugh while learning goals every day
Cristina Ulerio & 1 other

MySupport - The Match.com
MySupport is the Match.com of Homecare Support
Yin Lin & 3 others

InstAid
iPad app that serves as an accessible Nurse Call System in a home
Elizabeth Hadley & 1 other

DrumPants TAPS: Wearable A
Wearable triggers give a voice to people who have limited mobility
Tyler Freeman & 2 others

EnLight
Navigate with Grace
USA

EnLight
Beacon-based navigation for the visually impaired
Ashwin Kumar & 1 other

Smart Ear for deaf people
Help deaf people to be alerted to all emergency sounds
Anwar Almousa

Accessible Peak Meter
World's first accessible audio peak-level meter using 2#onification ADAW
Nick Bryan-Kirme & 3 others

USA
Austria
USA
UK
USA
USA
USA
USA

https://connectability.devpost.com/submissions
Winner: Best Solution for People with Sensory Disabilities: Ava

- **Pieter Doevendans**
- Mobile app that transcribes speech into text
- Group had own "exemplar"
Winner: Best Social/Emotional Solution AND Popular Choice Award: (Laugh Out Loud Aid) LOLA

- Cristina Ulerio
- Beth Rosenberg
- Sends funny reminders about social and daily living skills
- Created by TechKids Unlimited
  - https://devpost.com/software/lola-sdqa0
Winner: Best Mobility Solution AND Grand Prize: Kinesic Mouse

- Markus Proell
- Hands free PC control through facial gestures and head movements
- (for Jason)
- [https://devpost.com/software/kinesicmouse](https://devpost.com/software/kinesicmouse)
Lessons Learned

• Start early
• Stay excited
• Focus on tech user in every step
Thank you

Promotional Partners

UCD United Central Parks
tobii dynavox
fresh tilled soil
RESNA
UDOO
Tikkun Olam Makers
NYU Tisch School of the Arts
NYU Steinhardt
NYU Tandon School of Engineering