# Partners in Policymaking: Exploring Assistive Technology

Session presented by:
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College of Architecture
Georgia Institute of Technology

www.amacusg.org

# Workshop Objectives

**Participants (You) will be able to identify and explain:**

- Assistive technology (AT)
- AT in Legislation and Policy
- Your AT Act Program – Tools for Life
- AT solutions need to be considered in various settings
- Trends to track in AT

# Session Presenter

**Carolyn Phillips**

**Assistive Technology Director**

Carolyn P. Phillips is nationally recognized in the field of assistive technology and disabilities. Carolyn serves as Director and Principal Investigator of Tools for Life, Georgia's Assistive Technology (AT) Act Program at Georgia Tech | AMAC.

# AMAC Accessibility

AMAC Accessibility is a social change organization on a mission to create affordable services for governmental, private and non-profits organization working with individuals with disabilities. Services include e-text, braille, captioning, assistive technology, office management software and consulting.

Georgia's Assistive Technology Act Program

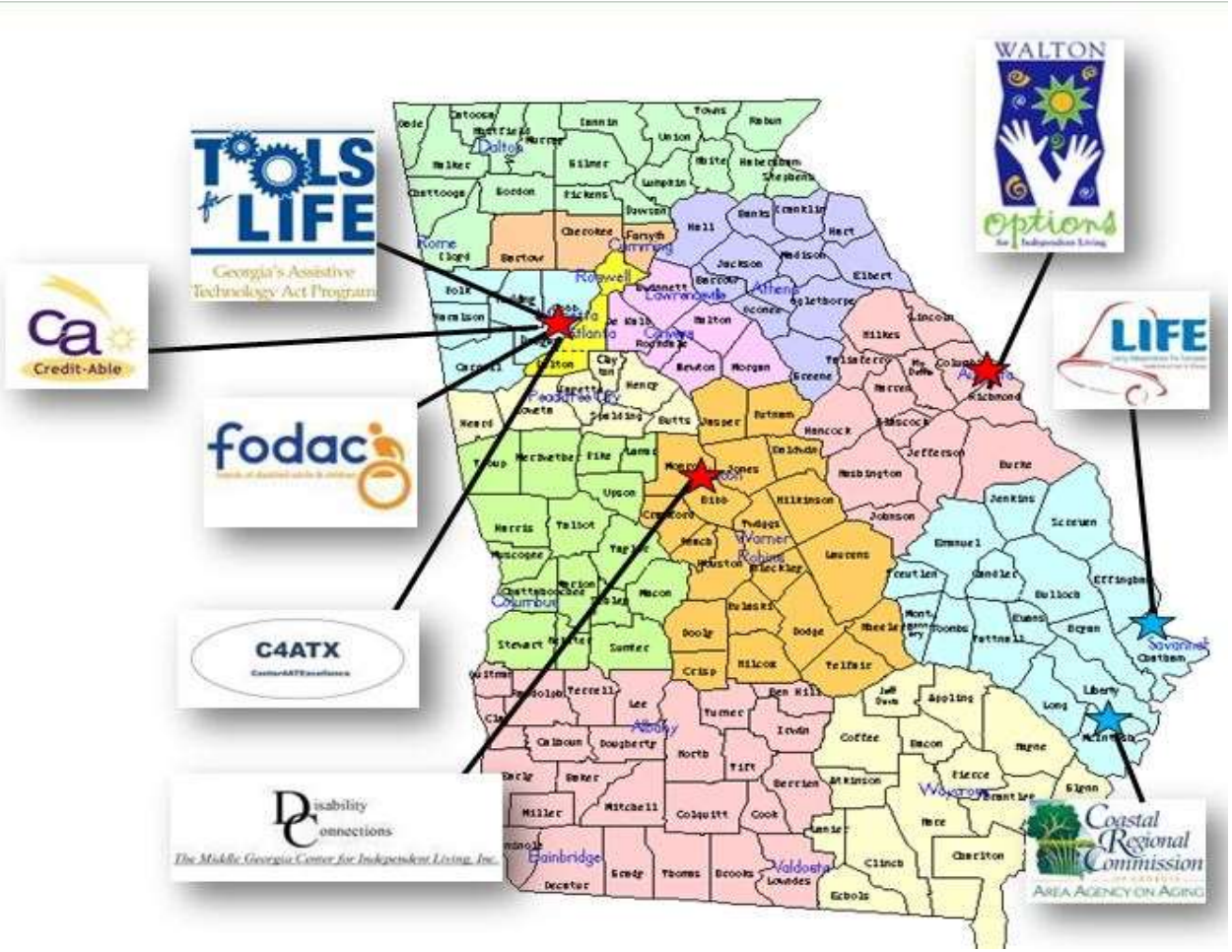
# Tools for Life Mission

We’re here to help Georgians with disabilities gain access to and acquisition of assistive technology devices and assistive technology services so they can live, learn, work, and play independently in the communities of their choice.

# Tools for Life
# Georgia's Federal AT Act Program

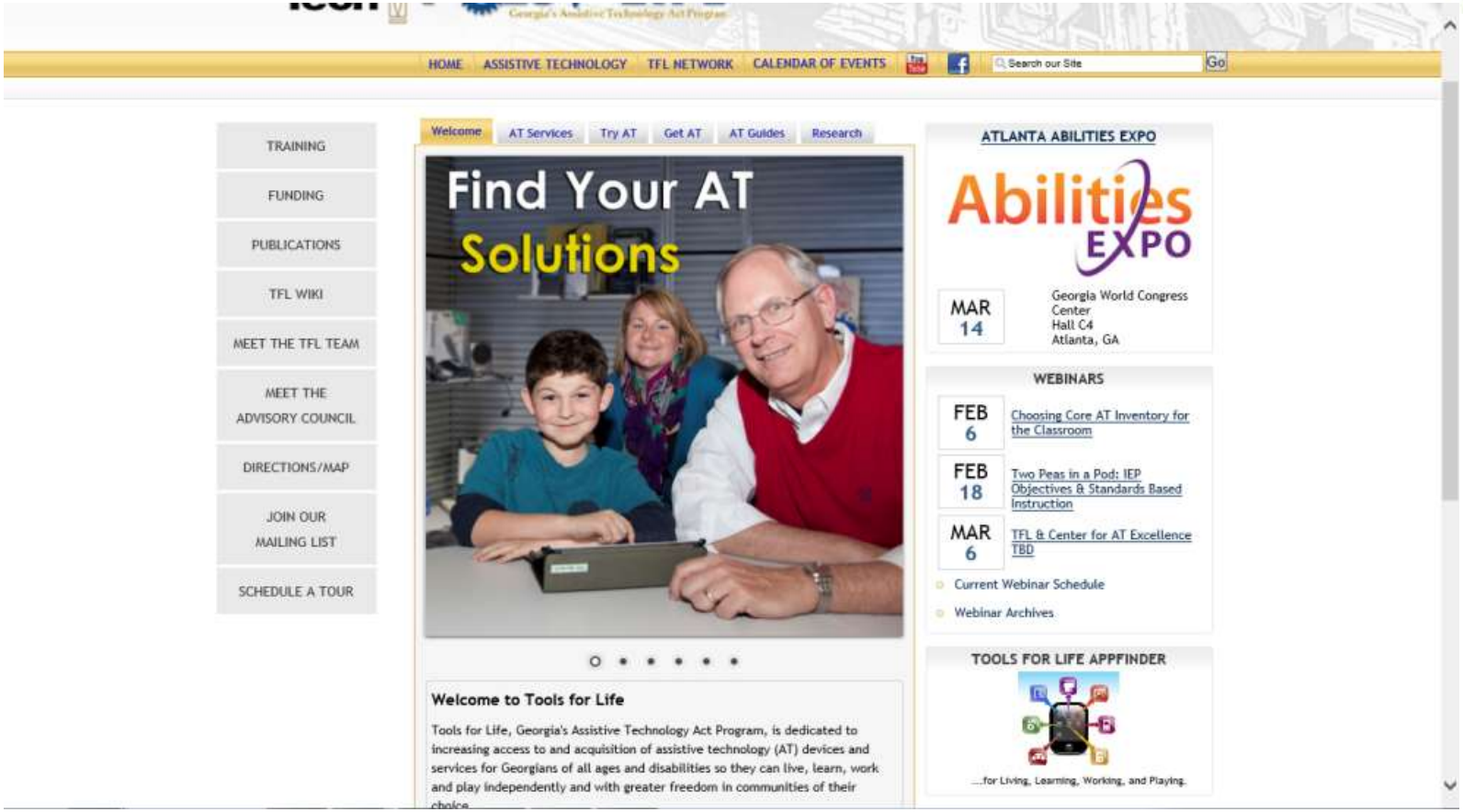
- TFL developed Georgia's Plan for AT
- We serve individuals of all ages & all disabilities in Georgia
  - Over 50,000 thru various activities throughout the year
- TFL Network
  - Assistive Technology Resource / Outreach Centers
  - Lending Libraries
  - Training and Demonstrations
  - AT Reuse
  - AT Funding Education/Assistance and Resources
- Online Resources
  - 5,000 unique visitors a month

# The TFL Network



# Come Visit Us!

AMAC
Accessibility for All



# What is Assistive Technology?

- Assistive Technology (AT) is any item or piece of equipment that is used to increase, maintain or improve the functional capabilities of individuals with disabilities in all aspects of life, including at school, at work, at home and in the community.

- Assistive Technology ranges from no/low/light tech to high tech devices or equipment.

# Defining Universal Design

- **Universal Design makes things *safer*, *easier* and *more convenient* for everyone.**

- Universal Design involves designing products and spaces so that they can be used by the widest range of people possible.

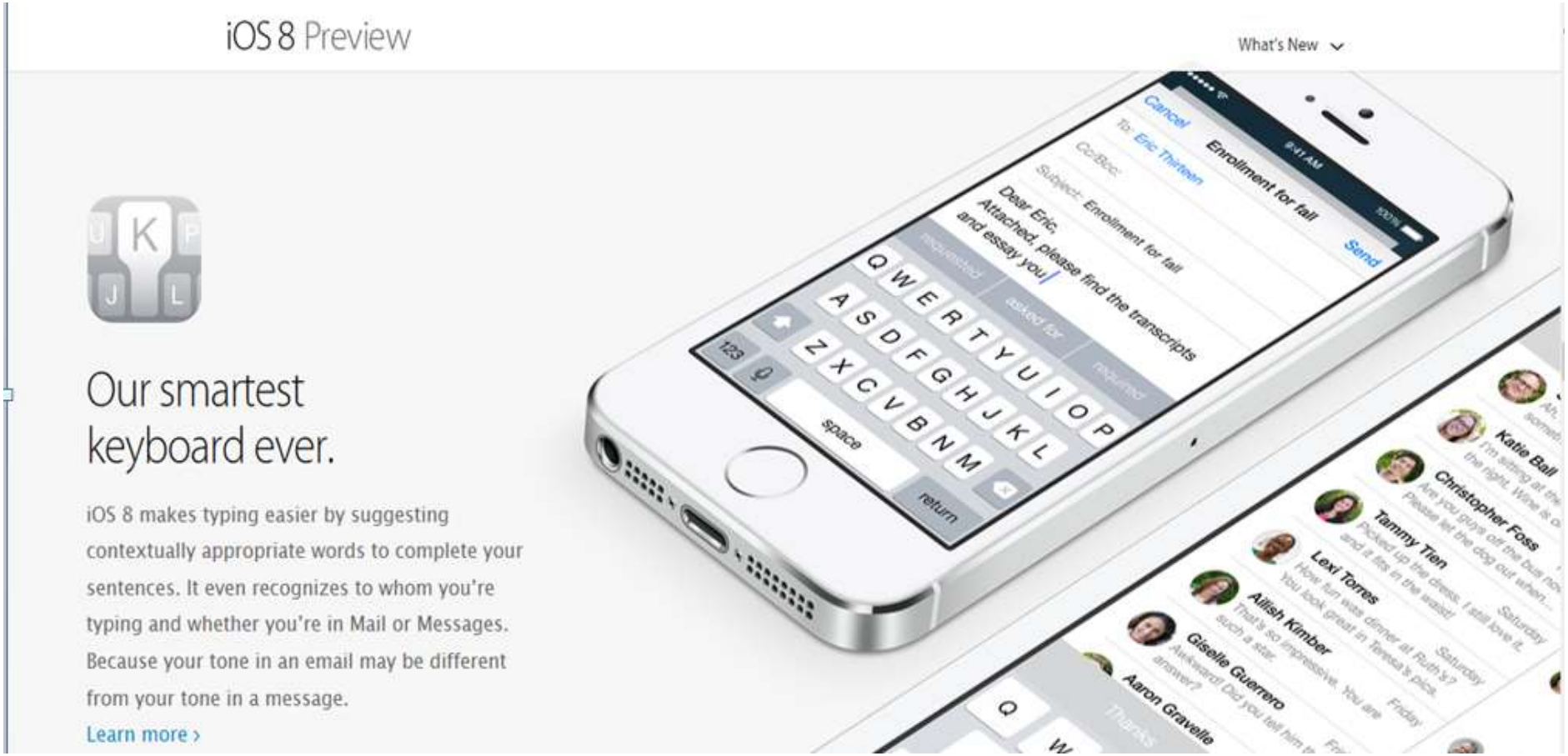
# In the Shadows…Mainstream

- Tim Cook, Apple Chief Executive
- 2013 speech at Auburn University
- …people with disabilities are "in a struggle to have their human dignity acknowledged."
- "They're frequently left in the shadows of technological advancements that are a source of empowerment and attainment for others."

# Mainstream Example: Mobile/Smart Phones

- iPhone - mobile phone in the mainstream market.
- Apple included a screen reader in the IOS for every iPhone.
- Increased Access for everyone – especially individuals with disabilities
- Decreased Cost – not as costly as it would be for a company specializing on screen readers
- Moved us Out of the Shadows, Into the Light!

# iOS 8 – released in 2014



# Why Assistive Technology?

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- For a person without a disability, technology makes things easier.
- For a person with a disability, technology makes things possible.

# Assistive Technology

**Assistive Technology Device**

...any item, piece of equipment or product that is used to increase, maintain or improve functional capabilities of individuals with disabilities.

- Public Law 105-394 [29 USC 2201]

## Low/No-tech

- pencil grip
- adapted books
- slant board
- highlighters, tape
- magnifiers
- color coding
- read to out loud
- picture schedule
- strategies for memory
- colored transparencies
- Proof readers
- note taker

## Mid-Tech

- word prediction
- text to speech
- speech to text
- spell checkers
- talking calculators
- digital recorders
- organizers
- e-books
- adapted keyboard
- adapted mouse
- adapted toys
- CCTV
- apps under $100

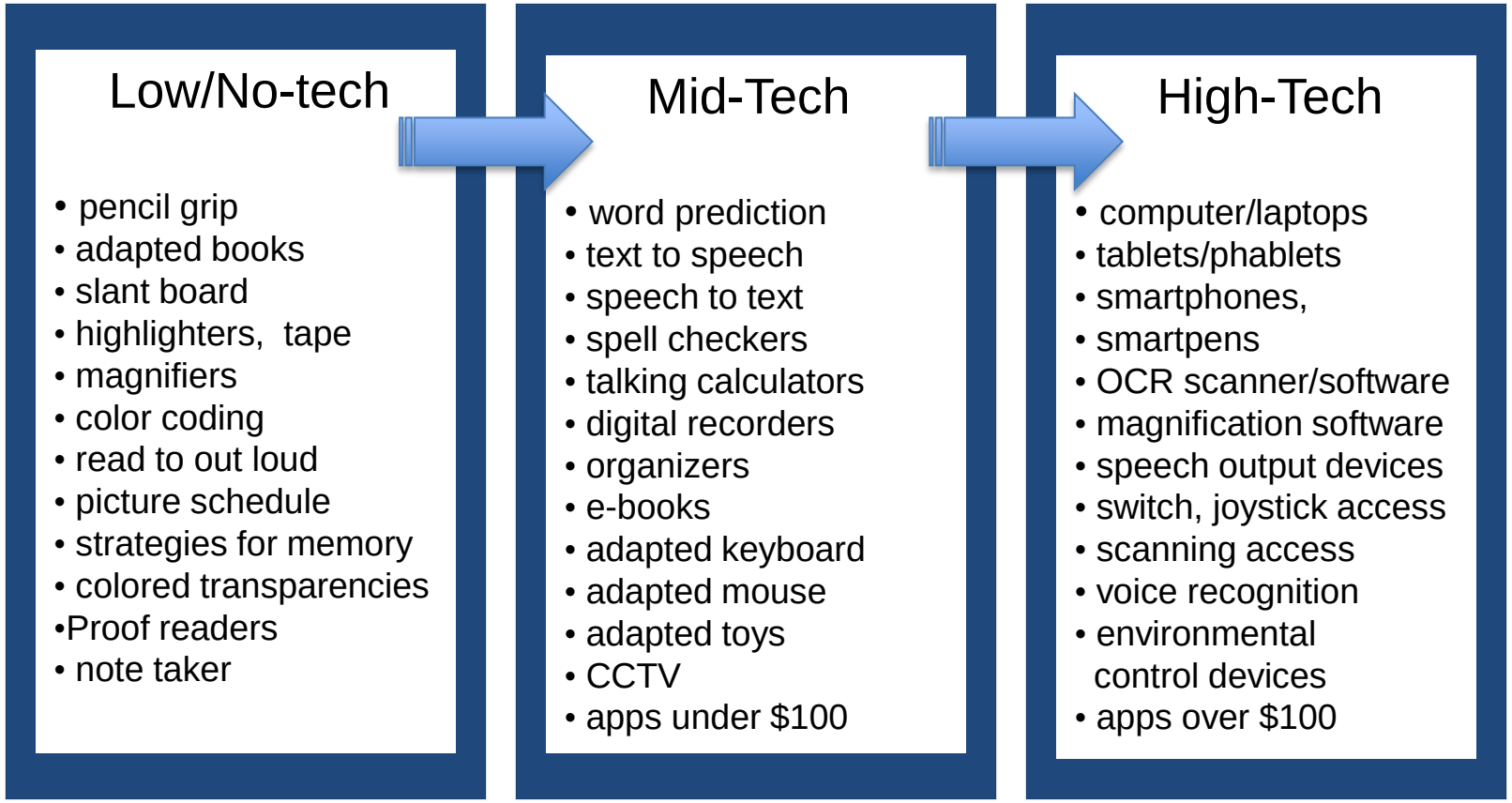
## High-Tech

- computer/laptops
- tablets/phablets
- smartphones,
- smartpens
- OCR scanner/software
- magnification software
- speech output devices
- switch, joystick access
- scanning access
- voice recognition
- environmental control devices
- apps over $100

# Assistive Technology Continuum

**Observations & "Hanging out with Intent"**

Assistive Technology is a **continuum of tools, strategies, and services** that match a person's needs, abilities and tasks.



# History of AT in Legislation

- 1980s and 90s, the civil and education rights of individuals with disabilities were strengthened.

- "...for all individuals, technology can provide important tools for making the performance of tasks quicker and easier, but for some individuals with disabilities, assistive technology is a necessity that enables them to engage in or perform many tasks."

# “Nothing about us without us.”

- Disabled Persons Organizations (DPO) rightly believe that unless they can influence decisions that directly affect their lives, they will remain excluded from mainstream life and development and be merely the passive recipients of aid and assistance from governments or other sources.

- Active participation of persons with disabilities in decision making: “Nothing about us without us.”

# Assistive Technology Laws

- There are a wide range of laws and policies related to assistive technology (AT) services and devices.
- Following are brief summaries of laws that impact the provision of assistive technology and special education services.
- Federal laws are amended regularly.

# Assistive Technology Laws: AT Act

- **Assistive Technology Act of 1998**
  **Public Law 105-394 [29 USC 2201]**
  The Assistive Technology Act, also known as the "Tech Act" provides funds to states to support programs for:
  - the establishment of assistive technology (AT) demonstration centers, information centers, equipment loan facilities, referral services, and other consumer-oriented programs
  - protection and advocacy services to help people with disabilities and their families, as they attempt to access the services for which they are eligible
  - Programs for alternative financing options to help people with disabilities purchase needed assistive technology.

# Assistive Technology Laws: ADA

- Americans with Disabilities Act ( ADA )
  Public Law 101-336 [42 USC 12101]
  The ADA prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation, and telecommunications.
  - Title I addresses employment, saying that any employer who has 15 or more employees must offer “equal opportunity” to employment-related activities.
  - Title II applies to state and local governments, and insists that people with disabilities be given equal access to public education, employment, transportation, recreation, health care, and other areas under their control.
  - Title III addresses public accommodations that may be provided by private companies, including private schools, restaurants, stores, hotels, doctors’ offices, etc.
  - Title IV addresses assistive technology specifically, as it requires that telephone companies provide the necessary services to allow people who are deaf or hearing impaired to use telecommunications devices.

# AT Laws: Section 508

- Section 508 of the Rehabilitation Act requires that all electronic and information technologies developed and used by any Federal government agency must be accessible to people with disabilities.
- This includes websites, video and audio tapes, electronic books, televised programs, and other such media. Individuals with disabilities may still have to use special hardware and/or software to access the resources.

# Assistive Technology Laws: IDEA

- Individuals with Disabilities Education Act (IDEA).
- The Individuals with Disabilities Education Act (IDEA) was initially passed in 1975, and guaranteed that eligible children and youth with disabilities would have a free and appropriate public education (FAPE) available to them, designed to meet their unique educational needs.

# AT Laws: Telecommunications

- **Telecommunications Act of 1996**
- **Title I - Public Law 104-104 [47 USC 255]**
  This law requires that telecommunications equipment and services be accessible to and usable by persons with disabilities.
- **Title III - Public Law 104-104 [47 USC 613]**
  Discusses rules on closed captions and video descriptions of video programming.

# Assistive Technology Act of 2004

- With the 2004 edition, the Act now required States to provide direct services to individuals with disabilities to ensure they have access to the technology they need. As a result, the majority of State efforts are required to be conducted in the following areas:
  - assistive technology reutilization programs,
  - assistive technology demonstration programs,
  - alternative financing programs
  - device loan programs

# Outcomes of the AT Act of 2004, Part 1

- Due to the efforts of the State Tech Act Programs, millions of Americans with disabilities are able to go to work, go to school, participate in recreation activities, and be contributing members of their communities.

# Outcomes of the AT Act of 2004, Part 2

- A summary of these accomplishments is compiled by the Association of Assistive Technology Act Programs; complete copies of each State Plan can be found at the National Information System for Assistive Technology.

# CATADA
# Center for Assistive Technology Act Data Assistance Website

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# 2014: The Workforce Innovation and Opportunity Act

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# Get to Know Your AT Act Program

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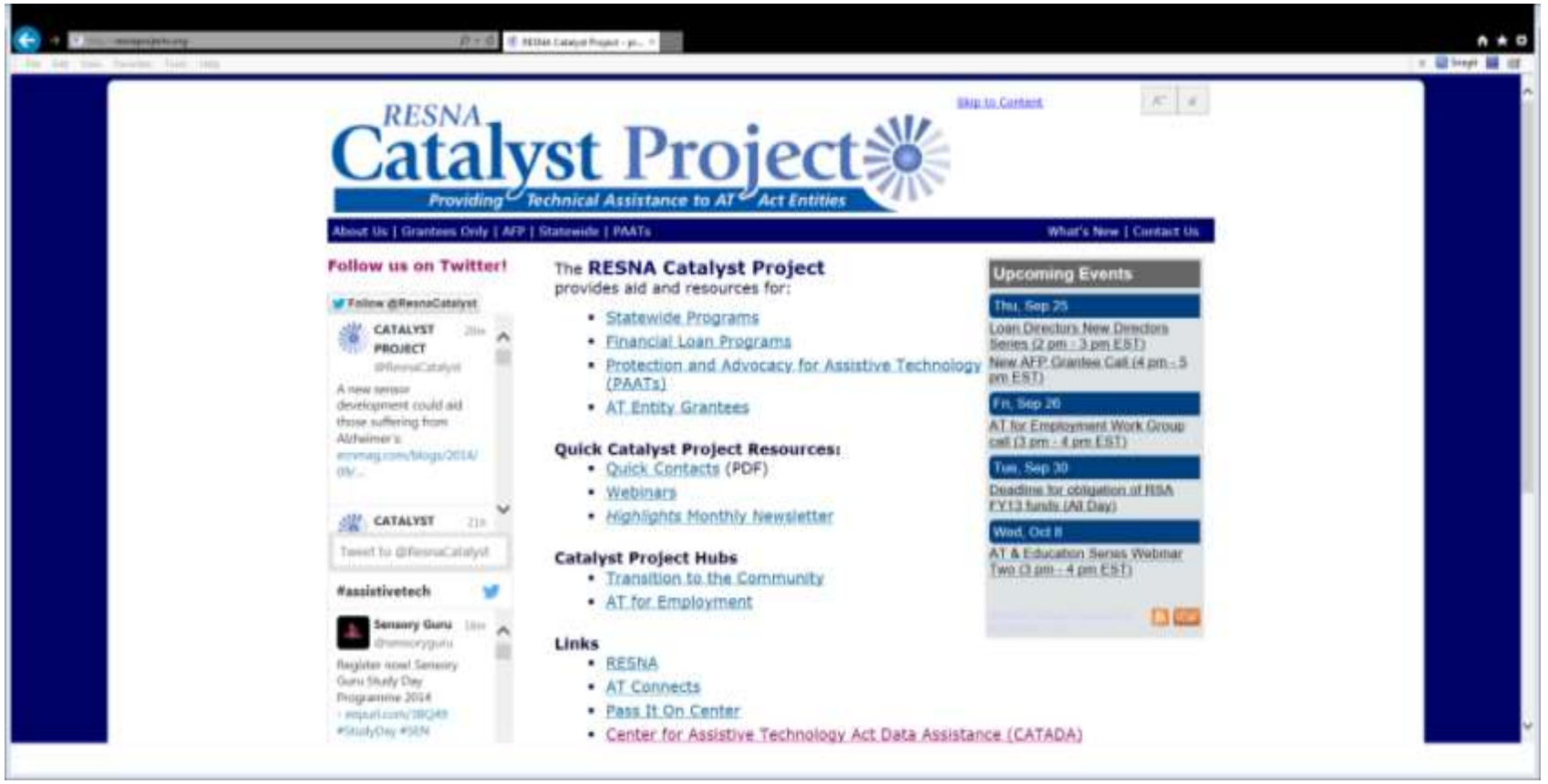
Accessibility for All



# Get to Know ATAP

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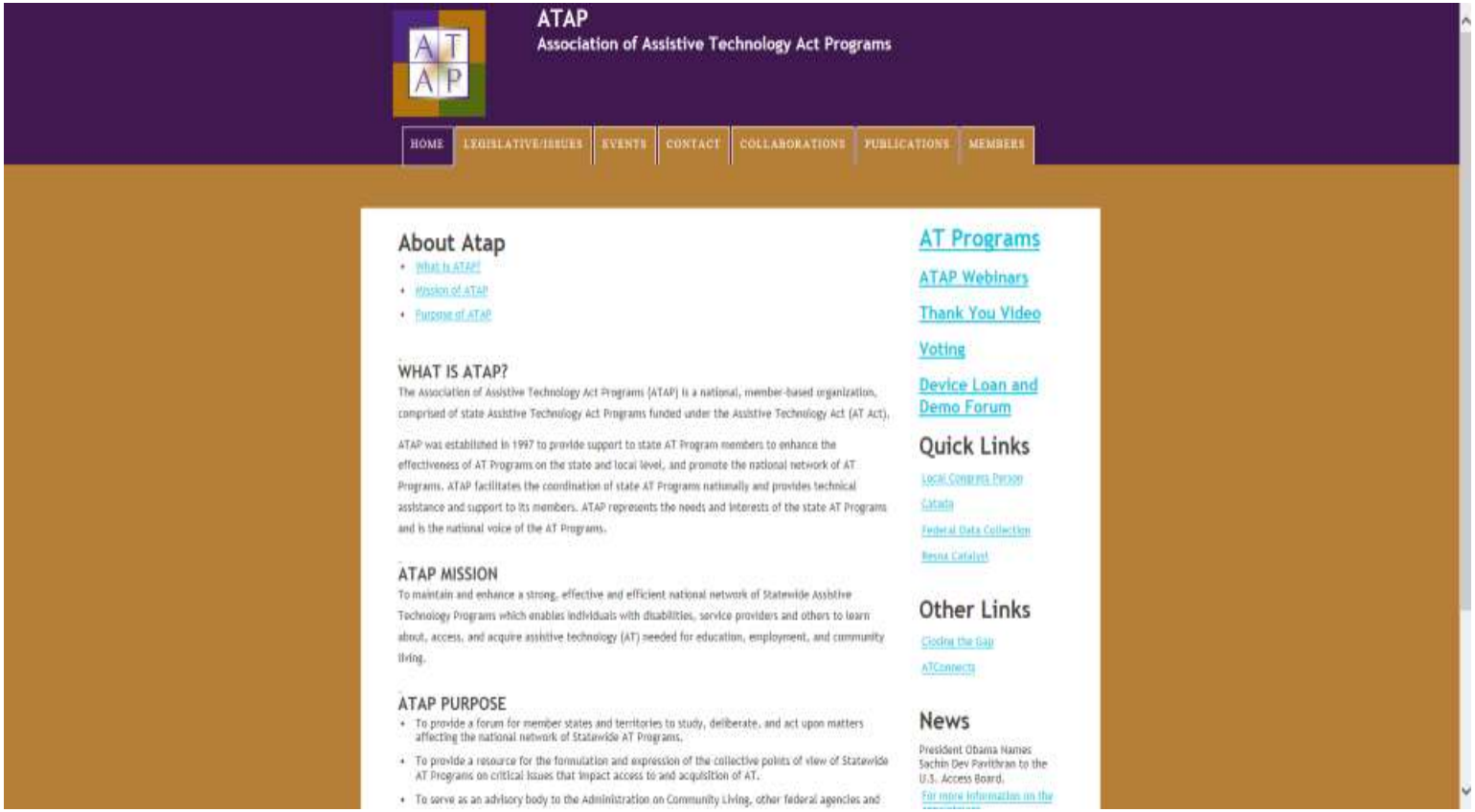
Accessibility for All



# Common AT Solutions for Access

- Text-to-Speech
- Speech Input
- Display Solutions
  - Magnification
  - Contrast
- Writing Solutions
  - Word Prediction
  - Grammar Check
- Alternative Access

# Recognizing AT Taxonomy Variations

- Example:
  - Text-to-Speech and Screen reader

## Contemporary screen readers [edit]

| Screen reader | Creator | Supported platforms | License | Notes |
|---|---|---|---|---|
| 95Reader | SSCT | Windows | Commercial | Japanese screen reader |
| BRLTTY | The BRLTTY Team | *nix and Windows console | Free and open source (GPL2) | Available to download; part of most Linux distributions |
| BrowseAloud | Texthelp Systems Inc | Windows and Mac | Free for Users, Commercial | |
| Capture Assistant | Renovation Software | Windows | Commercial | Multilanguage screen reader |
| ChromeVox | Google | ChromeOS or, with a speech processor, Linux, Mac, Windows | Free | ChromeVox is a screen reader for Chrome and Chrome OS. |
| Microsurf | Microsurf | Mac, Windows | Free | Microsurf is a screen reader for Chrome. |
| Claro ScreenRuler Suite | Claro Software | Windows | Commercial | Provides a "strip" or "ruler" across the screen. |
| ClickHear[1] | gh LLC | Windows and Mac | Commercial | Text-to-speech. Three voice options. Variable text and highlighting color options. Translates to several different languages: Spanish, French and German. Configuration settings saved per user |

# Features of Text-to-Speech

- Adjust Rate
- Adjust Pitch
- Adjust Voices
- Keystroke Control

# Difference between Text-to-Speech and Screen Readers, Part 1

- Screen readers often contain commands for emulating mouse functions; text-to-speech readers do not.

- Screen readers have a text-based interface that does not provide pictorial cues; text-to-speech readers generally have a visual interface, including pictures that accompany or replace text on buttons, which is likely to be useful to people with reading difficulties.

# Difference between Text-to-Speech and Screen Readers, Part 2

- Screen readers speak any text near the cursor; text-to-speech readers usually require that users cut and paste text into a separate window or highlight text to have it read.

- Screen readers can be set to read programmatic text, such as menus and dialogue boxes; text-to-speech readers generally do not do this.

# Text-to-Speech for Learning Disabilities

- Often assist with:
  - reading, studying, and writing,
  - may include optical character recognition (OCR),
  - word prediction,
  - tools to highlight, extract, and organize text, and
  - homophone checkers.

# Introduction to Screen Readers, Part 1

- The most widely used screen readers in the English-speaking market are:
  - JAWS from Freedom Scientific
  - Window-Eyes from GW Micro
  - Dolphin Supernova by Dolphin
  - System Access from Serotek
  - ZoomText Magnifier/Reader from AiSquared
  - The open source screen reader NVDA is gaining popularity
  - Narrator – Microsoft
  - VoiceOver - Apple

# Introduction to Screen Readers, Part 2

- Screen readers are a form of AT useful to individuals who are blind, vision-related disabilities, mobility-related disabilities, print-related disabilities or learning disabled.

# Introduction to Screen Readers, Part 3

- WebAIM, a web accessibility company, found JAWS to be the most popular screen reader worldwide; 49.1% of survey participants used it as a primary screen reader.

# Features of Writing Solutions

- Adjust Word Prediction
- Adjust Grammar and Spell Checks

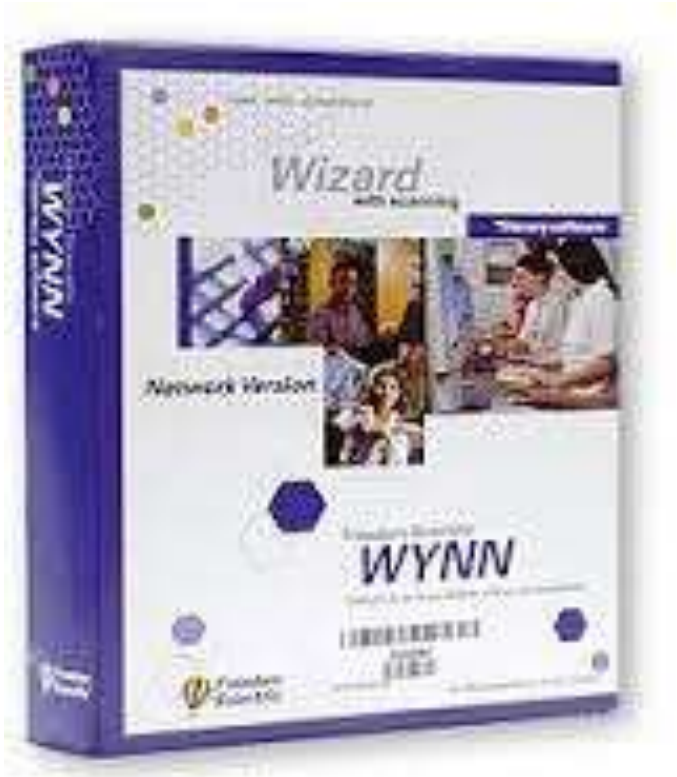
# Kurzweil 3000

- Text-to-Speech software
- Helps improve reading speed and comprehension
- Note taking capabilities
  - Different color highlighters
- firefly
  - Access many features of Kurzweil through the internet
  - firefly demo
- Free download trial
  - www.kurzweiledu.com
  - Kurzweil 3000 Demo

# WYNN

- What You Need Now
- Freedom Scientific
- Scanning and Reading software
- Highlights text as spoken
- Icon friendly
- Built in study tools

- Internet Features



# TextHelp

- Text-to- Speech software
- Helps improves reading skills
- Built in text and picture dictionaries
- Study skills highlighter
- Has a Google Chrome version
- www.texthelp.com

# TextHelp for Google

- Open a webpage within the Chrome Browser
- Click on the Read&Write for Google icon to open up the toolbar (click on the icon again to close out the toolbar later

# Premier Software

- Compose
- Predict
- Create study notes and much more!

- www.readingmadeeZ.com

# Ginger

- Online grammar and spell checker
- Can see corrections as you type or use Ginger Proofreader to scan the entire document for mistakes
- Will read corrections out loud
- Has an mobile Android app
- Works inside Word and emails
- Text to Speech
  - Read emails and docs
  - Can choose voice and accent
- Ginger Demo

# 2015 Software Review

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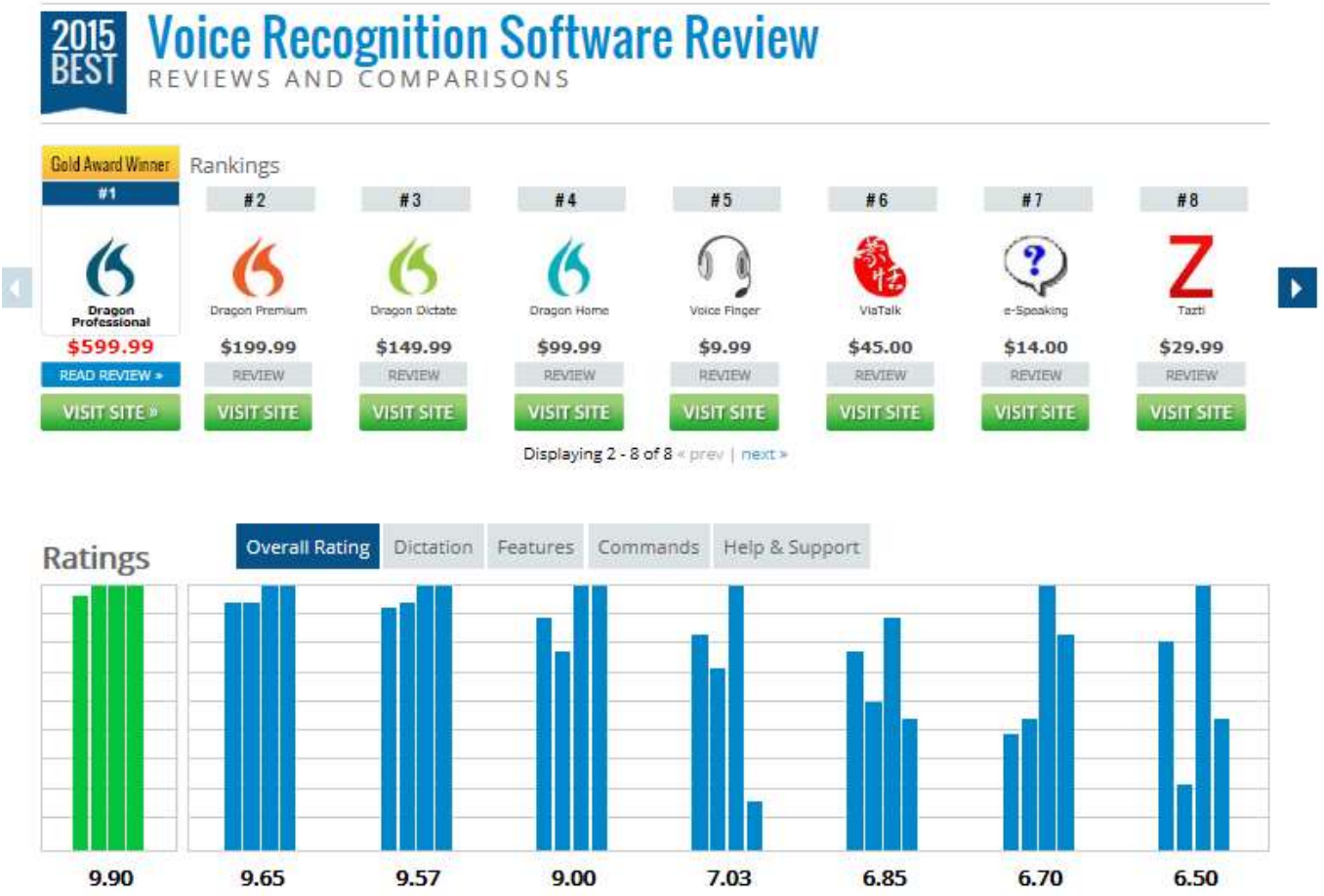

# Speech Recognition Software

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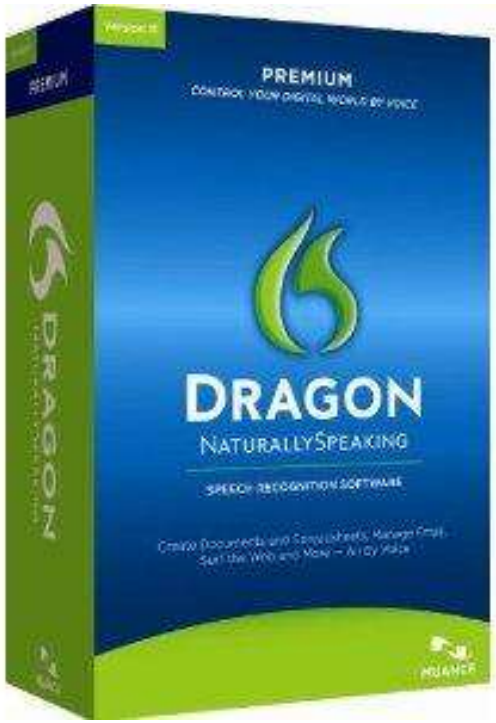
- Turn spoken words into text
- Connect with the timing of your thoughts
- Dictation speed 70 to 100 words per minute

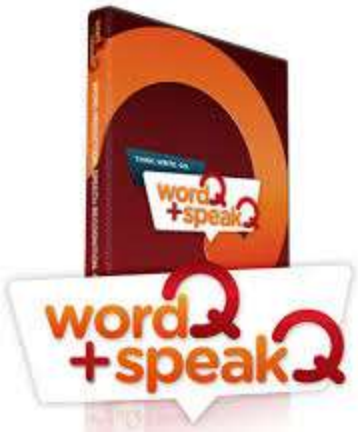


# Word Q/ Speech Q

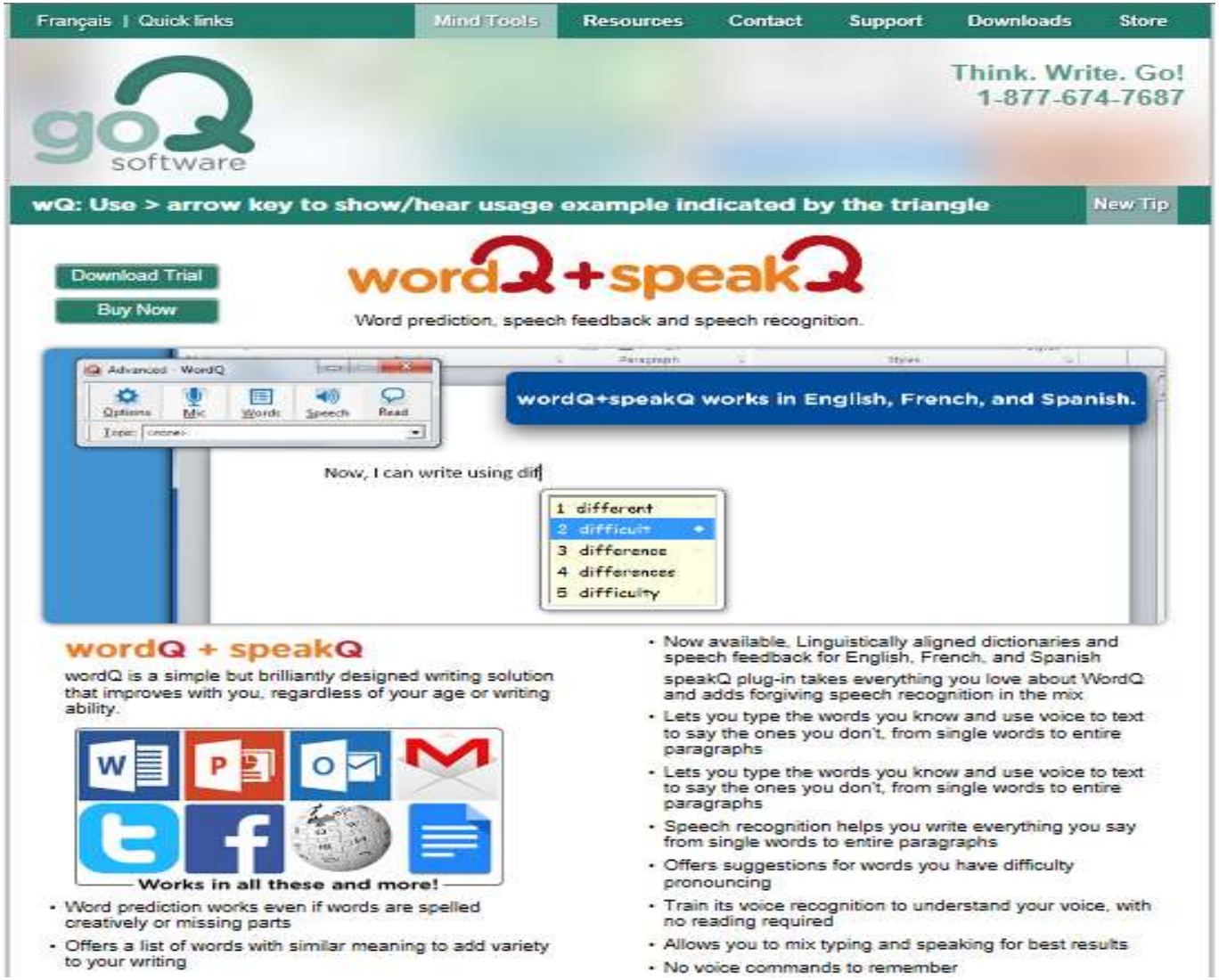
- Software that has built-in word prediction
- Suggests words
- Spoken feedback to hear what was written
- Speech Q is a plugin for Speech Recognition

- 30 day free trial

http://www.goqsoftware.com/trial/



# wordQ + speakQ



# Features of Display Solutions

- Adjust Magnification
- Adjust Contrast

- Demo of Magnification

# Features of Access Solutions

- Keyboard options
- Mice options
- Switch Access
- Alternative Input methods

# ASL Switch Labs

## Products / New Products

ASL brings innovative products to our clients! We are here to help each client reach their full potential – our team creates products and designs as a direct result of the needs of those we serve. Our goal has always been independence and equal rights for those we work with...

### Driver Control Packages

100 Series

ASL T38 Extremity Control Joystick

### Electronic Switches

200 Series

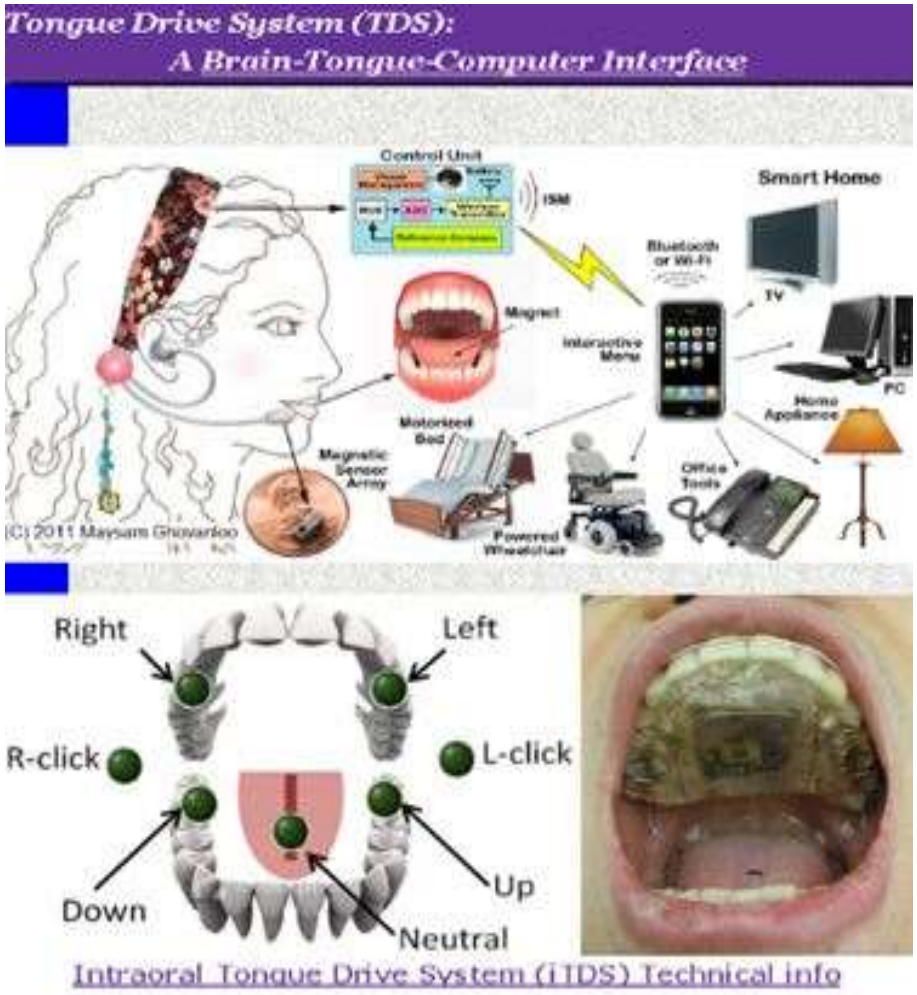
ASL 215 Round Proximity Sensor with Mono Port and 24 Volt Connector

### Electronic Switches

200 Series

ASL 215 Round Proximity Sensor 3 Pin

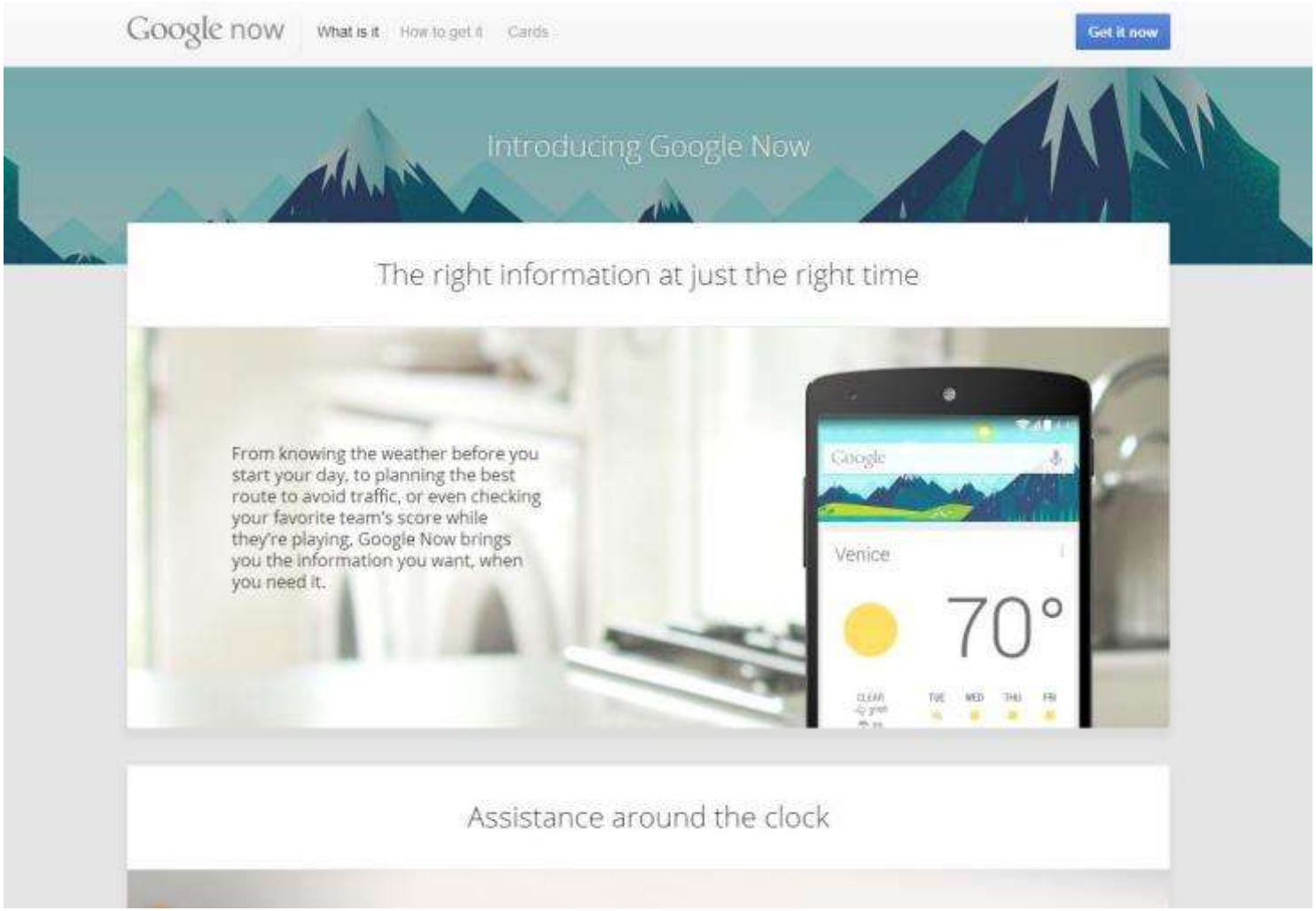
# Tongue Drive System



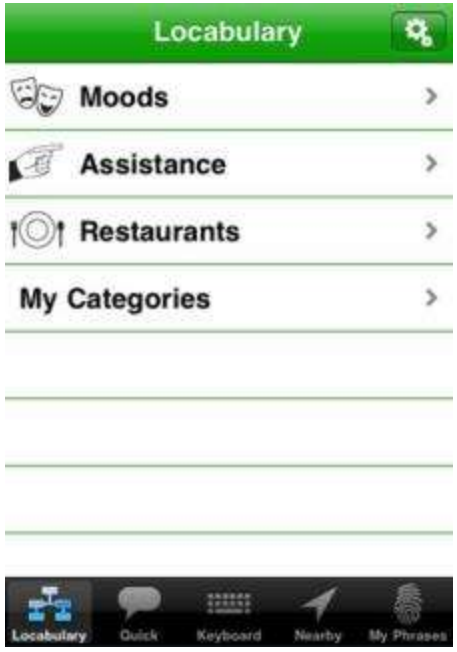
# Tracking Trends

- Increase in Universal Design in Mainstream
- Schools incorporate “Bring Your Own Technology”
- Customized reading levels
- Convergence
- The Future is Contextual
  - GPS in technology
  - Ads on Internet
  - Social Media

# Google Now


Google now
What is it
How to get it
Cards
Get it now
Introducing Google Now
The right information at just the right time
From knowing the weather before you start your day, to planning the best route to avoid traffic, or even checking your favorite team's score while they're playing, Google Now brings you the information you want, when you need it.
Google
Venice
70°
Assistance around the clock

# Locabulary


- Uses GPS to track user location and suggests appropriate vocabulary based on location
  - ie: Starbucks
- A keyboard to type for text-to-speech
- User can tag their own locations and create vocabulary for each location
- Lite version Free; Pro version $130

# LEAP Computer Input

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# Google Glass

# Mindrdr for Google Glass

AMAC
Accessibility for All

## MINDRDR FOR GOOGLE GLASS LETS YOU TAKE AND SHARE PICTURES JUST BY THINKING

NEUROGADGET • JULY 10, 2014 SHARE ON:

# Reading Finger Device

## MIT Finger Device Reads to the Blind in Real Time

In this Thursday, June 26, 2014 photo, a model wears a FingerReader ring at the Massachusetts Institute of Technology's Media Lab in Cambridge, Mass. Researchers designed and developed the instrument, which enables people with visual disabilities to

By RODRIQUE NGOWI
Associated Press

# Nod

- Controls devices remotely
- Change presentation slides
- Type notes
- Environmental Control Units

$149, Early 2015

**https://hellonod.com/**

# VGo Telepresence Robot

- Enables individuals to replicate themselves in a distant location and have the freedom to move around as if they were physically there
- Reduces travel costs
- School
- Hospital
- Work from home

# Questions?

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