Re-imagining the lecture note taking experience to make note taking accessible for all
Overview

- How user research and the accessibility community informed the development of Glean
- How Sonocent use inclusive design principles to align around a common goal
- How inclusive design translates to 'good design' for all
A bit about me...

- Product Design Lead @ Sonocent
- 18+ years working in design
- **Disclaimer:** Not an expert
A bit about Sonocent...

12 years’ experience helping institutions with note-taking support
The Ethics of Tea

Global tea consumption is high: 3 billion cups each day.

What are the socioeconomic implications of this level of consumption, especially on the producers?

China has the largest tea industry.

Small plantations supply small plantations.

No minimum raw product cost.

Wage stability is an issue for small farms.

Effects of climate change?

2014 - Most frequently recommended Assistive Tech in the UK
2018 - 500 North American colleges using Sonocent
2019 - BETA release of Glean

- The next evolution of Sonocent Audio Notetaker
- Online solution designed for students who need software to help them capture notes in the moment
- Designed for a **distraction-free** note-taking experience
Currently trialing Glean with 10 North American colleges
How user research and the accessibility community informed the development of Glean
In the last 12 years Sonocent has learned a lot...

- 5,000+ Students
- 1,200+ Disability Services Professionals
- 500+ Studies & Research Papers
What’s the biggest challenge when taking notes?

“I struggling to take notes whilst listening to the lecturer.”

“Focussing on what is being said while I am writing.”

“Paying attention and writing down notes at the same time.”

“Writing down enough detail before the lecturer moves on.”
Diamond’s story

“In 1996, I developed a brain tumour that hindered my physical and cognitive abilities.

Due to my condition, it makes reading, writing, and speaking difficult but definitely NOT impossible, however I do struggle with note taking.

I have tried many different apps to take notes but they all went south.”
The notetaker’s dilemma

either
concentrate and engage in the moment

or
create notes to come back to
Product development process at Sonocent

Create basic usable version
trial with users
Iterate & improve based on feedback
trial with users (again)
Make more widely available
Disability services experts

- From the start experts working in disability services were given early access to Glean
- To ensure product development was aligned with their needs and the students they support
Disability services feedback 👍

“A simple, cloud-based product is going to be eye-catching for students.”

“It's like you took a texting platform and added a cool way see the audio.”

“What you have designed is super beneficial for the initial note taking, very quick, very intuitive and very reactionary.”
Changes following feedback 🙌

- Updated look and feel (less sixth grade)
- Improved efficiency of note taking flow
- Adding headings to break-up audio and notes
- Ability to import lecture slides
What... NO WIFI!
You are offline

Changes will be uploaded to the cloud when you reconnect to the internet.
Student feedback

- Conducted 1:1 video calls
- Feedback forms
- Gained valuable insights...
  - Dyslexia
  - Dysgraphia
  - ADHD
  - Executive functioning
  - Ehlers-Danlos syndromes (EDS)
Student feedback 👍

“Very simple, quick to learn and easy to use.”

“I’m blown away by Glean.”

“I think it's a wonderful tool for people that have a hard time taking notes.”

“It’s very easy to use, honestly it’s so visually pleasing.”
"I would need search your events and keep them in a folder system."

"I don’t like how there’s not an app on the iPhone."

“The sounds of the typing is much louder than the presenter.”

"I would much rather just hit a hotkey and then make the note.”
Coming soon!
How Sonocent use inclusive design principles to align teams around a common goal
'Exclusion happens when we solve problems using our own biases'

‘If we use our own abilities as a baseline, we make things that are easy for some people to use, but difficult for everyone else.’

microsoft.com/design/inclusive
Inclusive design principles

1. Provide comparable experience
2. Consider situation
3. Be consistent
4. Give control
5. Offer choice
6. Prioritise content
7. Add value
Principle 4: Give control

Example: Make it stop

Some users find that animations cause nausea, and others find them plain distracting.

Where they play automatically, they should at least be easy to stop, by providing prominent playback controls.

WCAG 2.1: 2.3.3 Animation from Interactions (AAA)
Motion animation triggered by interaction can be disabled
Principle 6: Prioritise content

Example: Keep task focused:

Progressively reveal features and content when needed, not all in one go
Glean Inclusive Design Principle

Get out of the way

Glean should:

- Demand the smallest possible amount of attention
- Respect the limitations of an individual's ability to multitask
- Require the fewest number of interactions to complete tasks
How inclusive design translates to 'good design' for all
Plan

- Bug Accessibility
  Copy Button Doesn't Announce Tooltip

- Accessibility
  Downloading event...

- Accessibility
  Announce Downloading Event
  🗃️ 1

- Bug Accessibility
  NVDA reading out "midnight" and "24" if note time stamp is before 0:01 and 1:00 sec
Design
Build
What happens in development

- Follow coding best practice for accessibility
- Test using screen readers and keyboard navigation
- Automated tests to catch ARIA misuse (axe)
- Share the knowledge in code reviews
What happens in testing

● Online checklists and accessibility tools
● Keyboard-only navigation
● Test with screen readers together with different browsers on Windows & Mac
Checklists

Checklist

Determine how accessible your site is

Introduction

This checklist uses the The Web Content Accessibility Guidelines (WCAG) as a reference point. The WCAG is a shared standard for web content accessibility for individuals, organizations, and governments.

Headings

Headings (h1, h2, h3, etc.) help break up the content of the page into related "chunks" of information.

- Use heading elements to introduce content.
- Use only one h1 element per page or view.
- Heading elements should be written in a logical sequence.
- Don’t skip heading levels.
Disability simulators

Funkify
- Disability Simulator

Blurry Bianca
Experience blurry vision through a foggy filter.

Start

Color Carl
Manipulate colors with different filters.

Start

Dyslexia Dani
Scramble letters and make them dance.

Start

funkify.org
“I use a keyboard because of my joint issues. It would be helpful if there would be a way to highlight notes using a keyboard so I don’t have to use the trackpad. For me keyboard shortcuts are a subject of ease and I find really really helpful during fast note-taking sessions.”
Design is putting the humans first,
“Good design is accessible design, and accessible design is good for everyone.”

- Beth Linnetz, Accessibility Lead
What I’ve learned in the last two years...

- Support to build accessible products is out there, use it!
- Accessibility cannot be bolted on at the end of a project
- Creating accessible products is a team sport
What’s happening now and what’s coming next

Exciting times ahead!
Fall trials

Small group of institutions including:

- New York University - Moses Centre
- California State University, Northridge - Disability Resources
- Cornell University - Student Disability Services
  - Sarah Bonawitz - Accommodations Specialist
  - glean.sonocent.com/webinars/on-demand
- Atlantic Cape Community College
- University of St. Thomas (MN)
Fall trial numbers to date

- Total number of lectures: 1853
- Total hours of audio: 1856
- Total number of notes: 24,991
Expert audit

- Audit Glean against WCAG 2.1 AA

abilitynet.org.uk
Pilot Glean for free this Spring

Help us shape the future of note-taking support! Come speak to me or Barry at Booth 14 or visit...

glean.sonocent.com/pilot

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#AHG19