Motivation

Mark is a working professional (product manager), who cares about staying informed about general happenings in the world and things related to his career. Staying informed allows him to contribute better in the conversations with his colleagues and friends, and to prepare himself better for his career. He is also a generally curious person, and likes to stay informed for his personal satisfaction of feeling knowledgeable. Additionally, he associates with multiple identities such as product manager, researcher, technologist, male, california resident, berkeley resident etc, some more dearly than others, and he seeks out content that speaks to those multiple identities, to feel better represented and informed.

However, none of the current products in the market allow him to cater to different identities he has, in a more directed manner. He needs to seek out different sources of information proactively, and needs to shift through a lot of noise to find the content most relevant to him.

Current Solutions

User can currently employ a few major ways for information consumption:

1. Social Media: User through his behavior on the platforms and some level of proactive actions has trained his social media feed (primarily Twitter) to recommend the content he is more likely to consume. However, there is still a fair amount of noise to signal segregation that the user needs to do in sorting through the relevant stack on social media. Additionally, social media is an infinite scroll, so the user never feels that they are really caught up.
2. Podcast: This allows the user to go deep on certain topics. They capture more depth than breadth. Because of the conversation format it becomes easier to engage with the content in the background, while engaging in other activities, However, they may not always be able to engage with the full length content depending on time constraints.
3. Proactive Searching: The user proactively searches for the topics that they are interested in, and read the content on the web. They search the content directly on google. There are certain websites that they consider trustworthy and comprehensive, and usually consume content from those.
4. News aggregation mobile apps: SmartNews, InShorts, Feedly. These apps are mostly reading based and users can select publishers, websites and topics they are interested in staying on top of. Each of these have their own set of shortcomings.

SmartNews and Inshorts focus on topics and publishers, instead of user identities. Also, InShorts is focussed only in India. Also, these 2 are focussing on only news publishers, however, the interesting information can come from anywhere - youtube videos, podcasts, newsletters. Feedly allows the user to select multiple sources, but is not focussing on summarizing and user identities. Also, none of these focus on seamlessly transitioning experience between audio, and visual for information consumption.

The hypothesis is that having a system that allows the users to catch up to the content catering to their different identities in a way that naturally fits their daily life schedule is going to be valuable, and current solutions have significant room for improvement.

User Experience Research

People need to choose which one they want ot deep dive

Podcasts **don't** have enough breadth when covering news, they do deep dives (which is not preferable by everyone)

Lack of aggregation (too many platforms)

Discovery of new information is difficult for some topics

Platforms prevent deep dives: Instagram doesn't do links, twitter is

Customize Negative news is generally avoided by listeners.

Pick out the podcast episode is time-consuming.

Evidence: "Short versions are useful for filtering out uninteresting episode."

While brief snippets of information are useful, listeners prefer to **dive into detailed content** for a comprehensive understanding.

Evidence: "I prefer full episodes to understand the context of opinions."

Time to listening podcast

People **don't** always have long stretches of time which enable them to listen to podcasts

Listening to podcasts is not a routine activity for most people as it is a **big commitment.**

Quality of podcast

Too much noise: Bad quality content, misinformation

Users need to be able to consume the information in the podcasts while **multitasking or putting primary attention on something else.** (e.g. not concentrated information, have some joke or fun)

Evidence:
1. Podcasts are often played in the background during activities like driving, cooking, or unwinding
2. "The appeal of a podcast often lies in the interesting dialogue between hosts. The balance of knowledge-sharing and casual conversation prevents me fatigue during activities like a 30-

Users want to get the **diverse perspectives** offered by podcast hosts from varied backgrounds.

Evidence: "It's interested in understanding the hosts' viewpoints by learning about their backgrounds or experiences."

Need for multiple perspectives on a specific topic (i.e. listening to a dialogue)

Have different purposes at the same time

Need or preference for separation (podcasts for entertainment vs WSJ)

Supportive information while listening

Sara - Interest, I don't listen to anything often, social culture, I don't think I separate the too, on audio platforms - there's influence on commentators, data related visual, raw information,

There is room for fluff in audio platforms

Betty

How might we's

The user should feel well informed in terms of breadth across different aspects of their identities through this product. The user should be able to go deeper in the topics that they are interested in. The user should feel this product enables them to engage with content better than just audio, or visual only formats.

How might wes:
- How might we help users to discover and identify the podcast catering to their interest?
    - HMW allow users to get the niche zone that perfectly align with their preference efficiently. e.g. feedback system, import history preference profile from other platform.
    - HMW enable users to cater to multiple identities that they hold, that govern the kind of information they are interested in?
    - HMW identify personal characteristics of the user to discover topics of interest (i.e. career path, parent, age, etc) - Ideas > questionnaire, recommendations, personal history
    - How might we let users discover relevant topics quickly and easily?
    - HMW enable users to discover updated and relevant information about the things that they are interested in?
- How might we help users better to customize their preferences?
    - HMW allow users to customize their preference profile to get recommendations e.g. add more elements or filter out a certain type of content.
    - HMW customize playlist after initial registration (i.e. knobs, modals to ask if they're still interested)
    - HMW make audio fit the routines of people's lives if podcasts require too much commitment?
- How might we create natural separation between the user's multiple listening intentions (e.g. entertainment vs professional information)?
    - HMW allow users to get the most relevant recommendations for their multiple purposes separately? e.g. multiple separate recommendation system
    - HMW identify goals for each user (active news consumption, passive news consumption)
    - HMW create natural separation between personal and professional information or even provide the option to mix both
- How might we enable the user to do a deep dive in topics after listening?

- HMW make it easy for users to pin the information that they are interested in while listening to the podcast for a deep dive later on. e.g. Split the whole episode into several chapters
- HMW help the user move fluidly between audio and visual interaction to enable more effective information consumption?
- Efficient evaluation:
  - HMW determine if a topic is worth listening to. Ideas > preview topics in snippet form with headlines
  - HMW allow users to better assess if the episode is something they want to listen to? e.g. showcase the key factors of the qualified podcast in their ming.
  - HMW make it possible for users to "skim" audio?

Product Requirements

P0: Must-Have:
P1: Should-Have:
P2: Nice-to-Have:

P0:
- Obtaining some topic preferences from the user
- Based on the topic preference, obtaining some textual information from the RSS feeds/Google News and summarizing the output.
- Creating an audio output from the summary.

P1:
- Varying the length of audio output based on user preference
- Ranking algorithm for news articles.
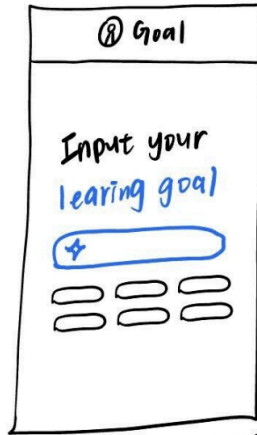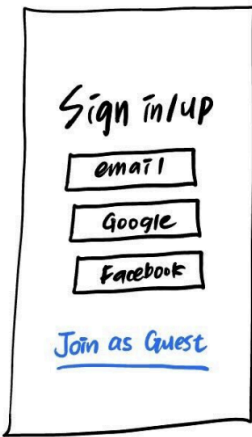- Adding more sources e.g. RSS Feeds

P2:
- Users are able to add sources of their own interest.
- Users are able to seamlessly transition between audio and visual, and have a lot richer engaging experience to consume content.
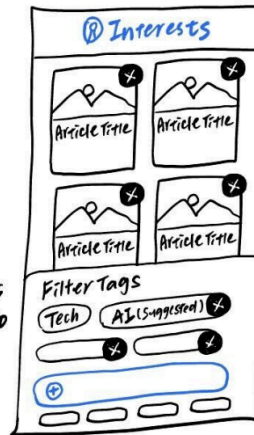
Design

Lo-fidelity

① Set up preference profile

Sign in/up
email
Google
Facebook

Join as Guest

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② Goal

Input your learing goal

↳ used to name the hub

→ Turn user's prompt into keyword Tags

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③ Interests

Article Title   Article Title
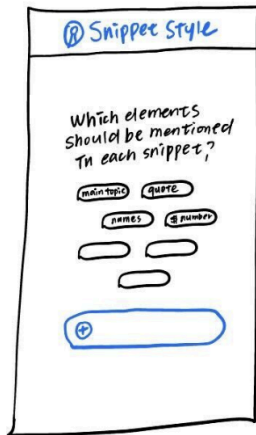Article Title   Article Title

Filter Tags
Tech   AI (suggested)

Preview how recommend feeds will look like while the set of tags applied

✕ Remove the subset they are not interested by dismissing articles or tags

⊕ Add tags mannually

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③ Sources

NYT   CNN
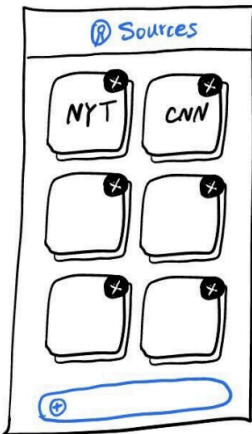
↳ Listed sources come from the content in the previous step.

✕ Remove sources
⊕ Add the specific sources they Trust

Q: which sources?

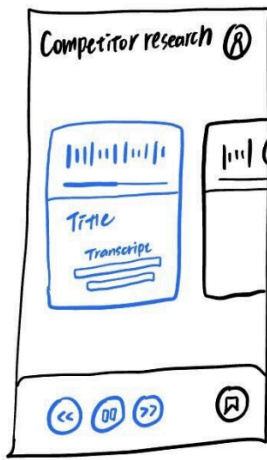③ Snippet Style

Which elements should be mentioned In each snippet?

main topic   quote
names   # number

Q: Do users need to customize which elements should be mentioned In a snippet while Introducing a content? which?

→

Your first learning hub is created Successfully!

Competitor Research ⚙

Explore

② Recommendation feeds

Competitor research (R)

Competitor research (R)

Title
Transcript

Title

X

Title
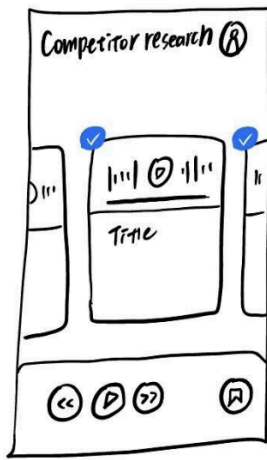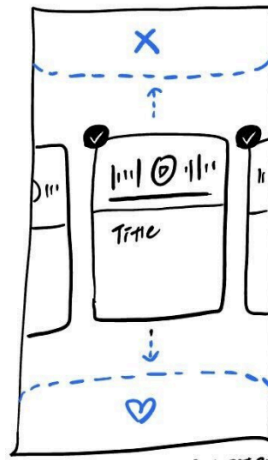
♥

I-min snippet for an article will be generated.

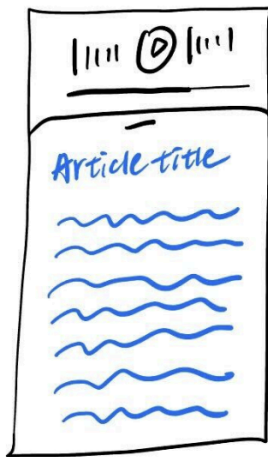(R) save snippet for deep dive

Q: Skip = dislike?
save = like?

✓ listened snippet

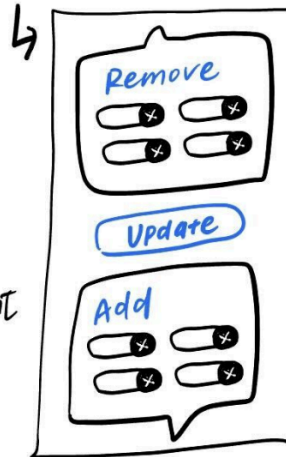like or dislike the content in the feedback mode

Feedback to the preference profile (user can also maually adjust the tags like they did initially)

③ Deep dive

Article title

Direct users go to the content source for deep dive.

Q: Should content be embeded in the app? Open new tab?

Remove

Update

Add

While leaving feedback mode, the change preview allow users to check which identities will be added / removeed.
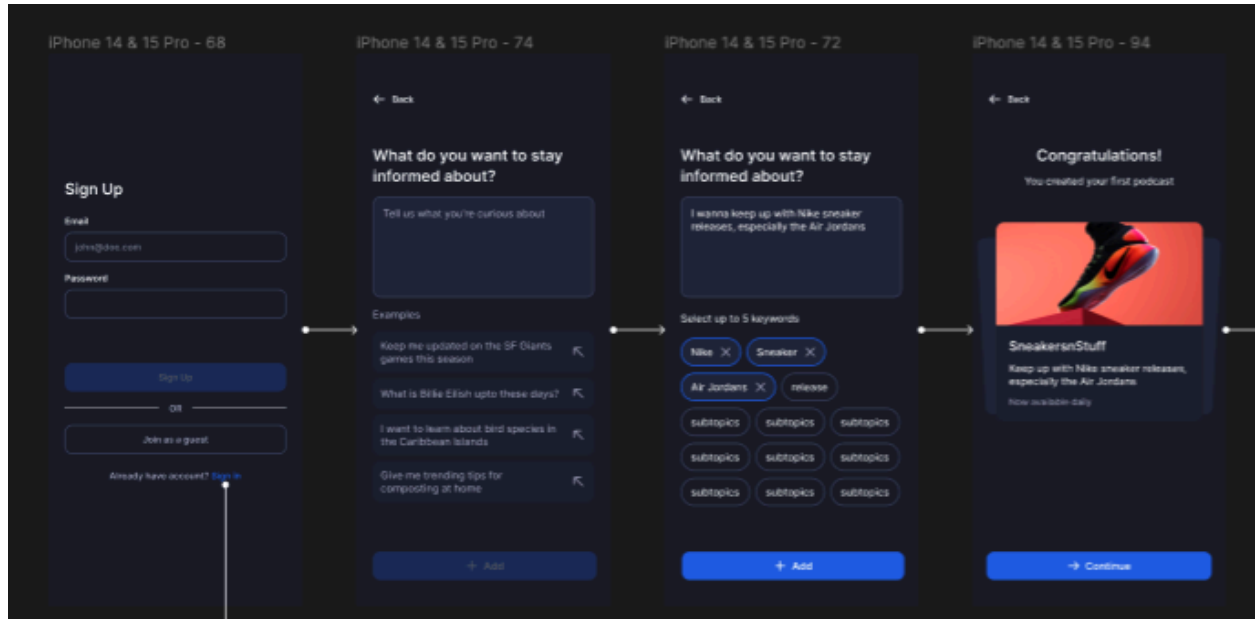
Q: Do users need to know which content contributed to a certain tag?

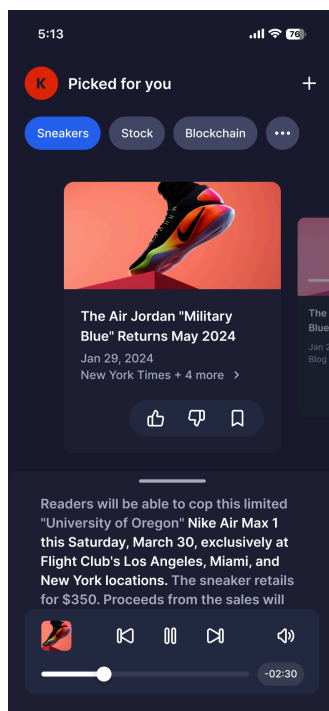Q: Beyond simply add / remove, any other control we can take on? e.g. weight adjust

Hi-fidelity

Onboarding

Audio Player

Development

Tech Stacks

Choice Standards

- Ease of development
- Cross-platform capabilities

[Frontend](#)

	Progressive Web Applications (PWA)	~~Flutter~~
Pros	- Uses standard web technologies (HTML, CSS, and JavaScript) - Also uses various JavaScript frameworks	Fast development cycles, expressive UIs, and high performance
Cons	May not perform as well as native apps on mobile devices	Learning curve: uses the Dart programming language

[Backend](#)

- Python Django

Storage

- **Audio File Storage**
  - Cloud storage: Amazon S3, Google Cloud Storage, or Microsoft Azure Blob Storage for storing the audio files
  - Caching frequently accessed audio files

- **User Preferences & Listening History**
  - User preferences: store user profiles, including their preferences, any custom settings, and authentication information
  - Listening history: store user IDs, audio IDs, timestamps of when the audio was listened to, and other relevant data
  - Audio metadata: store metadata about each audio file, a reference to the file's location in cloud storage

Models

- Llama: https://llama.meta.com/

- GPT Models

API Options

- https://aylien.com/product/news-api
- Multiple sources
  - GNews: https://gnews.io/
  - Currents: https://currentsapi.services/en
- RSS
  - May not provide full content, need extra web scraping through the provided link
  - Example: feedly (https://feedly.com/i/discover)

Text to Speech

- Elevenlabs: https://elevenlabs.io/
- Chatbot py (inflection AI)
- OpenAI: https://platform.openai.com/docs/guides/text-to-speech

	Google Text-to-Speech	**Amazon Polly**	**IBM Watson Text to Speech**	**Microsoft Azure Cognitive Services Text to Speech**
Quality of Speech	High (WaveNet voices are very natural)	High (NTTS voices are lifelike)	High (Especially Enhanced Neural Voices)	High (Neural voices are realistic)
Customization Options	Pitch, speaking rate, volume, SSML	SSML, breathing sounds, speaking styles	Expressiveness, emotion, voice transformation	SSML, style, role, emotional tone
Pricing	Based on characters (WaveNet more expensive)	Charged per character (free tier available)	Tiered pricing, free tier available	Varies by voice type, free tier available
Integration and Support	Good integration with Google Cloud, extensive support	Seamless AWS integration, extensive documentation	Integrates with IBM Cloud, active community	Integrates with Azure services, professional support

🏃 Progress Tracker

Features	Frontend Status	Related Commit	Backend Status	Related Commit	Notes
Landing page	Compl… ▾	https://github.com/Gitcatmeoww/echotune-frontend/commit/1ff72a45e7f584179343d15ed8431a5cc93fae13	In pro… ▾		Dependent on sign up, sign in and guest login
Sign up	Compl… ▾	https://github.com/Gitcatmeoww/echotune-frontend/commit/b0c7588abae1382894d4503019001276968c86fc	Compl… ▾	https://github.com/Gitcatmeoww/echotune-backend/commit/8e0e45855bb045614165bdc897fcac3182e430b8	
Sign in	Compl… ▾		Compl… ▾		
Select preferred topics	Compl… ▾	https://github.com/Gitcatmeoww/echotune-frontend/commit/bb4925e5490eeef15f265ea80d38f4cd998995b8	Compl… ▾	https://github.com/Gitcatmeoww/echotune-backend/commit/ca42cbedee7e665b50e32e6c2598344904e8e08b	Only guest user preference profile has been implemented, still need to handle authenticated user counterpart after implementing sign in feature
Search related content via Google news API	Compl… ▾		Compl… ▾		Updates: gnews does not support natural language as query parameter

Features	Frontend Status	Related Commit	Backend Status	Related Commit	Notes
Landing page	Compl… ▾	https://github.com/Gitcatmeoww/echotune-frontend/commit/1ff72a45e7f584179343d15ed8431a5cc93fae13	In pro… ▾		Dependent on sign up, sign in and guest login
Summarize contents retrieved from RSS	Not st… ▾		Not st… ▾		
Convert text to audio	Compl… ▾		Compl… ▾		

https://github.com/budhrajaankita/echotune-backend/tree/main/echotune