Problem Definition
Many active Spotify users between the ages of 18 and 25 want to listen to podcasts, but they frequently skip entire seasons or episodes when they don't connect with certain speakers or topics but they have watched the reels from other social media platforms therefore these users may stop watching after just a few episodes, which lowers engagement and retention. This reveals a gap in discoverability and content tailoring, which results in lost chances to boost Spotify podcast view time and audience retention.

- **What is the problem?**
  Users struggle to find podcasts matching their interests, leading them to switch platforms therefore improving podcast discoverability and personalization to increase engagement, retention, and overall listening time on Spotify.

- **Who is facing the problem?**
  *Young Spotify users, especially those aged **18-25**, who actively consume content but **struggle to discover relevant podcasts** that match their interests.*

- **What is the business value that will be unlocked by solving the problem?**
  - *Reduce Podcast drop-offs by 4% and increase podcast engagement significantly around 7%*
  - *Increase intent watchers which will directly increase by 5% opportunity of premium users which will also impact the reviews mechanism*
  - *Increase average listening time that will lead to generate ad revenue*

- **How will the target users benefit if the problem is solved?**
  For Viewers
  - Easily pick your next watch
  - Viewing snips will increase view intent
  - Save decision time

  For Creators
  - *Quick engagement boost by AI recommended summary*
  - *Snips helping user decisions will lead to more views*
  - *More intent watchers leading to better reviews more likes*

- **Why is it urgent to solve this problem now?**
  1. *India's podcast industry is growing from $560M to $4,284M by 2023—Spotify must act now to stay competitive.*
  2. *Freemium users switch to YouTube and other platforms for better content; solving this boosts retention, engagement, and market share.*

Goals
Functional Metrics (Directly Related to User Actions & Product Performance)

1. ***Podcast Completion Rate*** *– 5 % of users who complete a full episode or season.*
2. ***Podcast Discovery Rate*** *– 4 % of users engaging with AI-recommended or personalized podcast content.*
3. ***Conversion Rate (Freemium to Premium)*** *– 6% of free-tier users upgrading after engaging with podcast content.*

Non-Functional Metrics (System Performance & User Experience Indicators)

1. ***Recommendation Accuracy Score*** *– % of recommended podcasts that users listen to for at least 5 minutes.*
2. ***Load Time for Podcast Playback & Search*** *– Maintain a response time of <2 seconds for search and playback.*

Why are these Functional metrics important?

Podcast Completion Rate: A ***low rate*** suggests drop-off points that need to be addressed, such as **content relevancy** or **episode length**.

Podcast Discovery Rate: A ***high discovery rate*** means Spotify's recommendation algorithms and **search filters** are working well.

Non-Goals:
- *Content Creation & Podcast Production*
- *Monetization & Ad Revenue Optimization*
- *Live Podcast Streaming & Interactive Features*

Validating the problem with the help of user interaction/ interview and highlighting customer journey map

Stage 1: Identify the customer persona
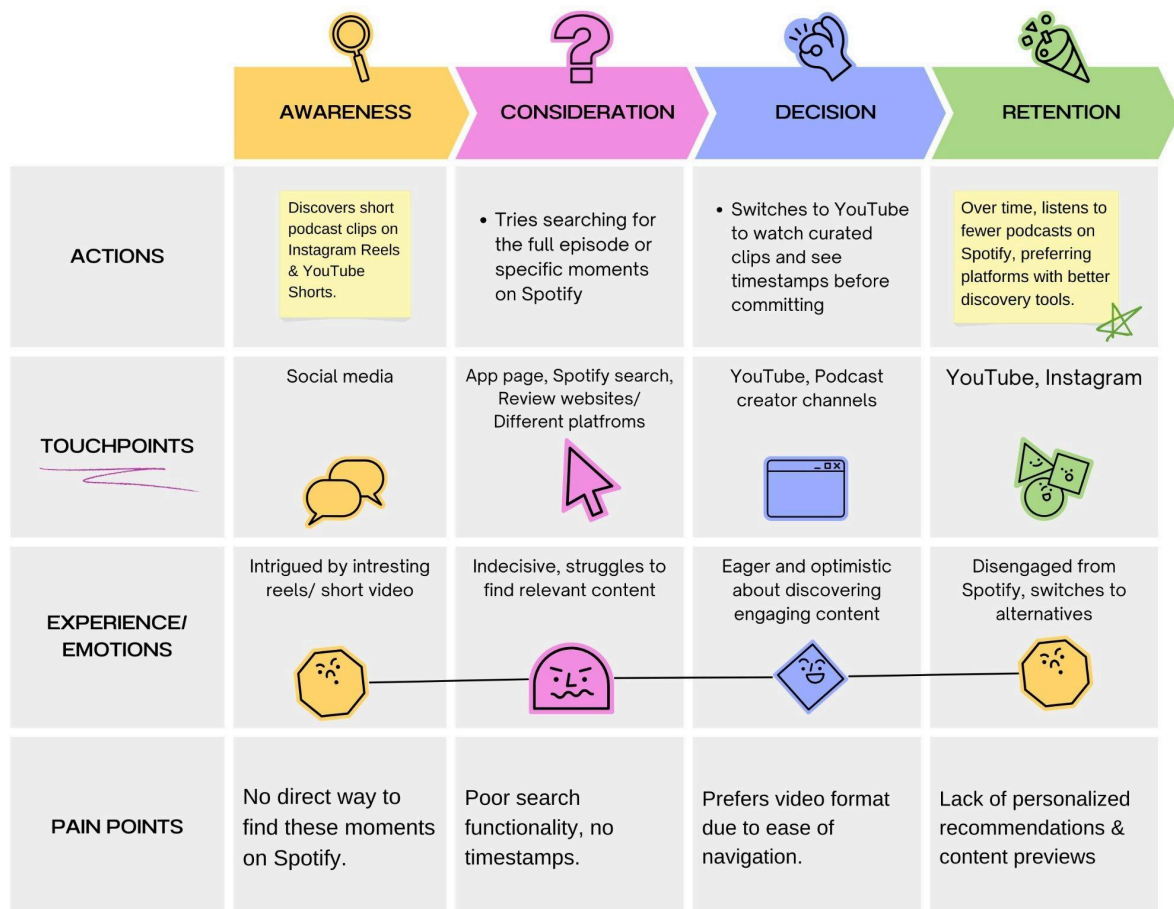
Simpi Agarwal

A SHORT DESCRIPTION

a 22-year-old Spotify user who enjoys listening to podcast. she follows trending topics but often skips entire podcast episodes or even seasons when she doesn't relate to the guest or discussion.

WHAT SIMPI SAY'S

📌 She discovers short clips on Instagram Reels and YouTube Shorts but finds it hard to locate those moments on Spotify.
📌 Due to this frustration, he switches to YouTube where he can see timestamps and curated clips before deciding whether to watch the full episode.
📌 Over time, his Spotify podcast engagement drops, and he spends less time listening to long-form content.

Stage 2: Map out the journey you expect them to have when using your product. Each persona gets one map.

	AWARENESS	CONSIDERATION	DECISION	RETENTION
ACTIONS	Discovers short podcast clips on Instagram Reels & YouTube Shorts.	• Tries searching for the full episode or specific moments on Spotify	• Switches to YouTube to watch curated clips and see timestamps before committing	Over time, listens to fewer podcasts on Spotify, preferring platforms with better discovery tools.
TOUCHPOINTS	Social media	App page, Spotify search, Review websites/ Different platfroms	YouTube, Podcast creator channels	YouTube, Instagram
EXPERIENCE/ EMOTIONS	Intrigued by intresting reels/ short video	Indecisive, struggles to find relevant content	Eager and optimistic about discovering engaging content	Disengaged from Spotify, switches to alternatives
PAIN POINTS	No direct way to find these moments on Spotify.	Poor search functionality, no timestamps.	Prefers video format due to ease of navigation.	Lack of personalized recommendations & content previews

Understanding the target audience

User Persona

Who is facing the problem

Sonali Singh
Age: 24
Location: Kolkata
Occupation: Analyst

Bio: She likes to listen to podcast while doing mundane tasks commuting or cleaning. She also works out daily and is looking for more engaging playlist.

Wants & Needs:
- Wants to get better entertainment experience
- Wants to select which episode will be worth her time quickly

Pain Points
- Can not decide if she wants to spend her time on an episode
- Doesn't like all episodes therefore wants a way to selectively watches what she likes.

Prathikska Kankaria
Age: 28
Location: Bangalore
Occupation: Housewife

Bio: She likes to listen to podcast while doing household chores. She listens to sings or podcast mostly during afternoon to relax her thoughts

Wants & Needs:
- Wants to gain knowledge
- Wants to listen genre according to her mood
- Wants to share favorite key takeaways among friends and family

Pain Points
- Can not decide if she wants to spend her time on an episode
- Can not take a note of key takeaways therefore have to listen the podcast same multiple times

User's Narrative

" When I want to view Joe Regan's experience on spotify, I sometimes do not resonate with few guests or topics therefore skips through the whole clip and ultimately drop off after watching few episodes and think there is something interesting on YouTube."
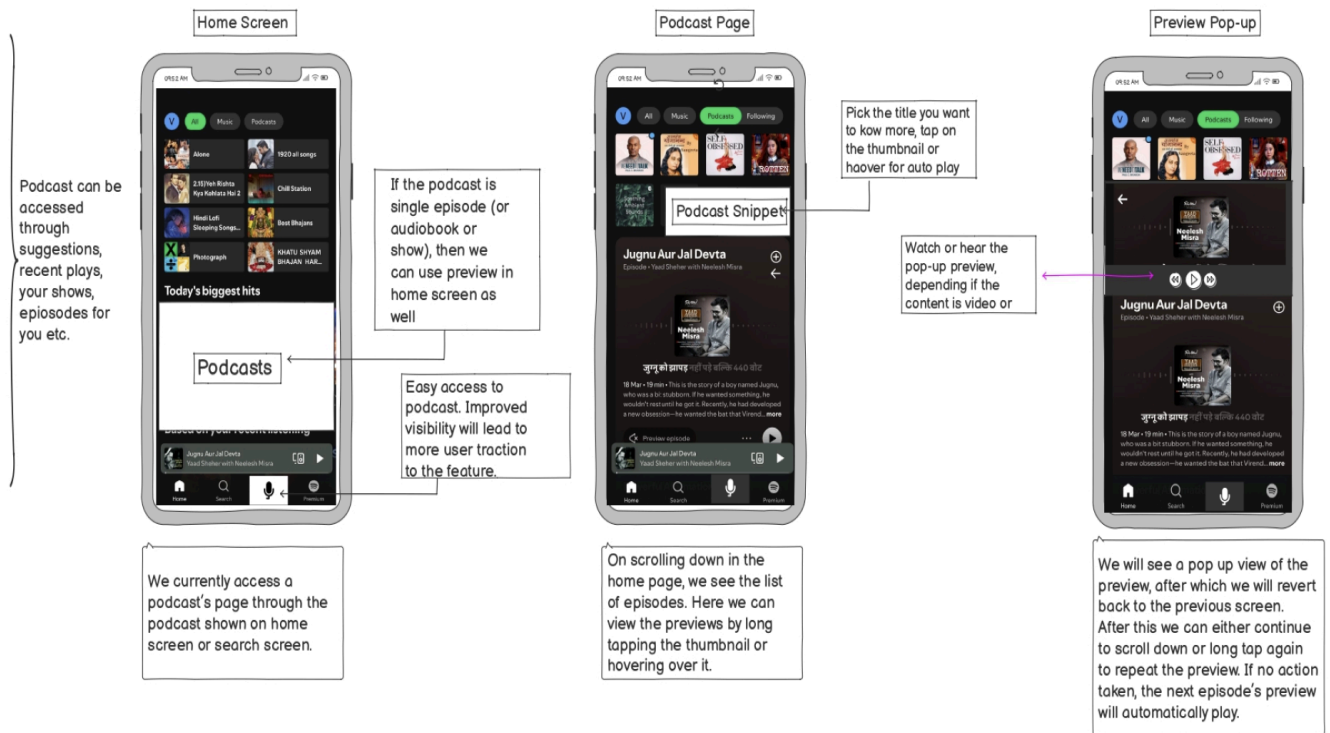
"I recently catch up on Ted Talks daily this week, and found some interesting and insightful thoughts but due to lack of tool which would help to highlight the timestamps I had to re watch the episode to fill up on later".

Solution

Introduce Podcast Snippets – an AI-powered feature enabling users to preview 15–20 second audio/Video clips of podcast episodes directly on Spotify before committing to a full listen. These snippets are either auto-curated by Spotify's AI on content uploaded by podcast creators, based on high-engagement moments and **listener's preferences**.

The feature leverages personal listening history, behavioral signals, and user preferences to present relevant podcast snippets, thereby improving discovery, increasing engagement, and reducing bounce rates.
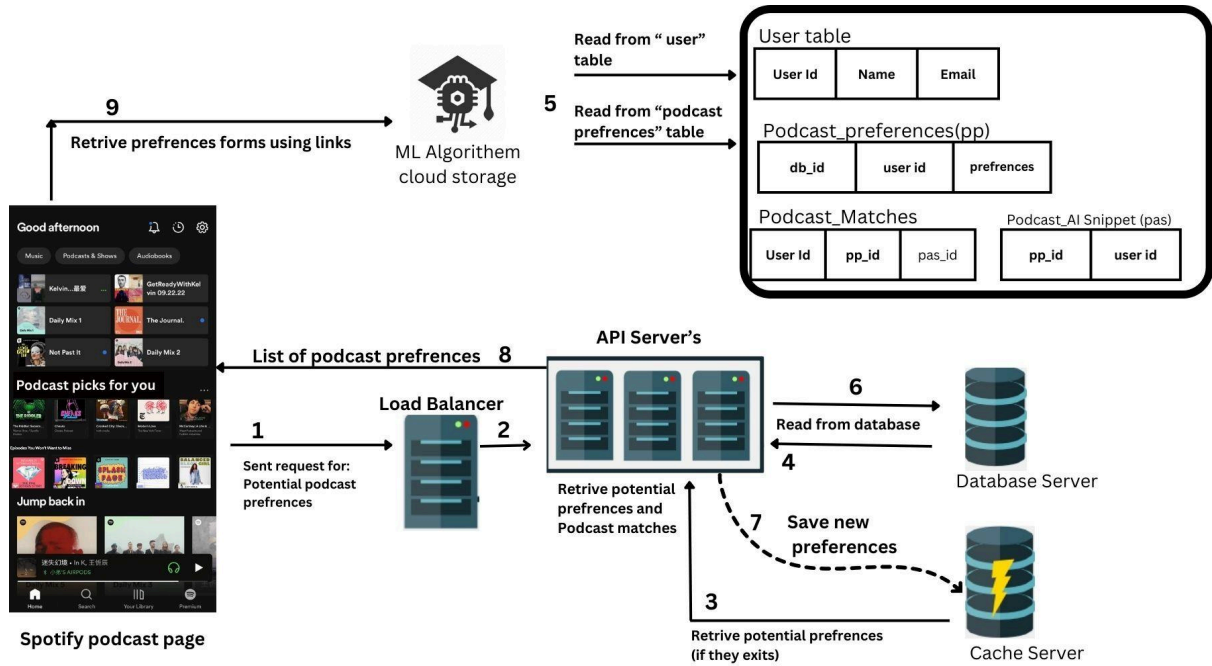
Wire-frame to visualise the solution

Home Screen

Podcast can be accessed through suggestions, recent plays, your shows, epiosodes for you etc.

If the podcast is single episode (or audiobook or show), then we can use preview in home screen as well

Easy access to podcast. Improved visibility will lead to more user traction to the feature.

We currently access a podcast's page through the podcast shown on home screen or search screen.

Podcast Page

Podcast Snippet

On scrolling down in the home page, we see the list of episodes. Here we can view the previews by long tapping the thumbnail or hovering over it.

Preview Pop-up

Pick the title you want to kow more, tap on the thumbnail or haover for auto play

Watch or hear the pop-up preview, depending if the content is video or

We will see a pop up view of the preview, after which we will revert back to the previous screen. After this we can either continue to scroll down or long tap again to repeat the preview. If no action taken, the next episode's preview will automatically play.

Key Features

Key Feature	Benefit for Viewers	Benefit for Creators	Business Impact
AI-Generated Snippets	Faster discovery, personalized recommendations	Time-saving, auto-selected engaging moments	Increased user engagement & retention
Long Press/Hover Preview	Quick content selection, better UX	Higher conversion from snippet to full play	Higher play rates, reduced bounce rates
Snippet Discovery Hub	More engaging browsing experience	Increased exposure, new audience reach	Growth in DAU & engagement time
Manual Snippet Selection	More relevant snippets for users	Greater control & branding	Higher conversion rates

Engineering team feature development

Key Feature	Frontend Responsibilities	Backend Responsibilities	Frontend API Requests to Backend
AI-Generated Snippets	- Display snippet preview player - Show loading/error states - Render personalized recommendations	- AI pipeline to generate 15–20 sec audio snippets - Store snippets metadata (timestamps, episode ID, language, tone) - Fetch personalized snippet recommendations based on user history	`GET /snippets/recommendations?user_id=` `GET /snippets/:episode_id`
Long Press Hover Preview	- Add long press / hover listener to episode thumbnail - Autoplay audio snippet popup - Show fallback or error state	- Serve snippet audio file URL - Track snippet views and plays - Log long-press events for analytics	`GET /snippets/:episode_id/preview` `POST /logs/snippet_view`
Snippet Discovery Hub	- Build new UI screen for snippet discovery - Filter by genre, trending, or personalized - Display thumbnail grid and snippet on hover	- Serve personalized list of snippets - Recommend trending or high-engagement snippets - Paginate and filter by genre/tags	`GET /snippets/discover?genre=xyz` `GET /snippets/trending`
Manual Snippet Selection (for Creators)	- Upload interface for creators - Audio waveform editor to select snippet - Show upload progress and validation	- Save custom snippet selection - Validate length (15-20s), format - Store mapping with episode ID - Update snippet versioning if re-uploaded	`POST /creator/snippets/upload` `PATCH /creator/snippets/:id`

SYSTEM DIAGRAM

Read from " user" table

Read from "podcast prefrences" table

9

Retrive prefrences forms using links

ML Algorithem cloud storage

5

User table

User Id	Name	Email

Podcast_preferences(pp)

db_id	user id	prefrences

Podcast_Matches

User Id	pp_id	pas_id

Podcast_AI Snippet (pas)

pp_id	user id

Spotify podcast page

List of podcast prefrences   **8**

API Server's

6

Read from database

4

Database Server

1

**Sent request for:
Potential podcast
prefrences**

Load Balancer

2

**Retrive potential
prefrences and
Podcast matches**

7   **Save new
preferences**

3

**Retrive potential prefrences
(if they exits)**

Cache Server

Data instrumentation for tracking key metrics

Category	Metrics	Event Name	Event Properties (Variables)	Why It's Needed
Engagement	1. CTR (Before vs After Snippet)	`snippet_impression` `Snippet_click`	`user_id, snippet_id, episode_id, timestamp, source, is_snippet_enabled`	To measure % of users who click after seeing a snippet
	2. Watch Time (Active vs Inactive)	`podcast_play_started` `podcast_play_ended`	`user_id, episode_id, watch_duration, session_id, is_active_user`	Tracks session length and episode engagement
Discoverability	1. % of users who previewed podcast	`Snippet_preview_played`	`user_id, snippet_id, episode_id, duration_played, device_type`	Indicates how many users explore new content via previews
	2. Avg time viewed per episode (active users)	`podcast_play_ended`	`user_id, episode_id, watch_duration, is_active_user`	Measures viewer stickiness and content value
Segmentation	1.Type of user	`User_type_classified`	`user_id, user_type` (active/inactive/programmed), `session_count, days_since_last_active`	Enables behavioral targeting and feature optimization
	2. Genre of content viewed	`podcast_play_started`	`user_id, genre, episode_id, timestamp`	Understands preferences to refine content suggestions

Edge/error cases handling

Edge/Error Case	Cause	User Experience (UX Response)	Handling Strategy
Snippet fails to load (network error)	Poor internet or timeout while fetching snippet	Show loader for 3–5 seconds, then message: "Preview unavailable. Try again later."	Retry logic (3 attempts max), fallback to static episode description
No snippet available for episode	Creator hasn't uploaded or AI hasn't generated it	Display "No preview available" with option to jump to trailer or description	Allow users to "Follow" or "Bookmark" episode instead
Audio preview doesn't match user's interests	AI misclassification or cold start	Feedback option: "Didn't like this preview?"	Feed feedback into model retraining to improve personalization
Inappropriate/irrelevant AI-generated snippet	Inaccurate AI clipping or NSFW content	Report button: "Flag snippet" triggers moderation queue	Manual review; clip de-prioritized based on flags
Snippet plays too many times (looping)	Loop bug or repeated long-press	Show preview once per session with timer before replay	Add 10–15 sec cooldown before replay
Long-press/hover trigger fails	Device/OS/browser incompatibility	Provide "Tap to preview" as alternative interaction	Detect device type and adjust interaction logic dynamically
Snippet doesn't autoplay episode	Broken play path or transition	CTA: "Play full episode" should be functional	Log and track failed transitions with analytics
Broken/empty snippet uploaded by creator	File upload error or wrong format	Display fallback message or auto-generated snippet	Validate upload: check file format, audio presence

Product marketing

(Phase 1)

- We should begin with a targeted **A/B testing strategy** aimed at high-impact user segments.
- The ideal test group should include both **Premium** and a **select group** of **Freemium** users, carefully chosen based on behavioral insights.

The primary categories for A/B testing should include

- **High Daily Active Users (DAUs):** Users who engage with the platform daily, indicating a strong content consumption habit and openness to new features.

- **Users with High Podcast Engagement:** These users frequently listen to podcasts, follow multiple creators, and show extended average listening times.

- **Content Explorers:** Users who regularly explore new shows or categories—often those who interact with recommendation feeds, search, or browse Spotify Originals.

A/B testing of the snippet feature to measure
- click-through rates
- listening time
- snippet interactions
- retention post-preview

Tracking feedback, behavior shifts, and engagement delta between the control and experimental group will provide actionable insights.

How would users know about the product

- **launching the feature first to podcast-heavy premium users**, especially those with high DAU metrics
- A **phased launch strategy** can then follow, gradually expanding to freemium users who show high exploratory or podcast listening behaviors

Marketing Strategy

- In-app nudges
- Spotify Wrapped-style previews
- Creator collaboration for announcing snippet-enabled shows
- Whatsapp campaigns- highlighting the new preview experience

Launch Readiness Plan: Podcast Snippets Feature

Key Milestones & Timeline

1. **Design Completion** – Finalizing UI/UX for preview feature (Week 1-2)
2. **Development Completion** – Backend & frontend integration of snippet functionality (Week 3-6)
3. **QA Testing & Bug Fixes** – Ensuring seamless experience across devices (Week 7-8)
4. **Dogfooding & Internal Testing** – Trial within select Spotify teams (Week 9)
5. **Beta Rollout** – Limited user testing & A/B experiments (Week 10-11)
6. **Full Launch** – Global availability & marketing push (Week 12)

Launch Checklist

- **User Support:** Ensure Help Center has FAQs & troubleshooting guides for snippet features.
- **Operational Readiness:** Set up backend analytics to track snippet engagement & conversions.
- **Internal Stakeholders:** Product, Engineering, Design, Data Science, Marketing, Customer Support teams aligned.
- **Performance Monitoring:** Real-time dashboards for engagement tracking & bug reporting.
- **Marketing & Awareness:** In-app banners, social media announcements, and email campaigns.

Experimentation Plan

A/B Testing – Compare engagement between users with snippet previews vs. those without.

Metric Tracking – Monitor increase in podcast completion rates, listener intent, and total listening time.

Iterate & Improve – Refine snippet durations & trigger points based on user behavior & feedback.

Future Iterations for Podcast Snippets

1. Personalized Snippet Feeds

- **What**: A TikTok-style scrollable feed of personalized podcast snippets based on user behavior, genres, and listening patterns.

- **Why**: Increases discoverability and browsing engagement; caters to casual listeners.

- **Impact**: Higher intent-to-play conversion and time spent in-app.

2. User-Generated Snippets

- **What**: Allow listeners to create and share their own favorite 15–30 second podcast snippets.

- **Why**: Promotes community-led discovery and virality.

- **Impact**: Boosts engagement, social sharing, and podcast visibility.

3. Snippet Smart Highlights (AI 2.0)

- **What**: Upgraded AI model to detect tone shifts, excitement, or emotion for more compelling clip selections.

- **Why**: Improves relevance and emotional connection for preview content.

- **Impact**: Higher preview-to-play conversion, improved personalization.

4. Multi-language Snippets

- **What**: Auto-translate and dub podcast snippets in other popular languages.

- **Why**: Helps scale podcast discovery in non-English markets and improves accessibility.

- **Impact**: Drives global growth and higher engagement from international users.

5. Podcast Trailer & Snippet Sync

- **What**: Auto-sync snippets with podcast trailers or episode descriptions for a more cohesive story.

- **Why**: Helps users make informed decisions based on context.

- **Impact**: Reduces bounce rate and increases full episode plays.

6. Snippets in Voice Search & Smart Speakers

- **What**: Enable snippets to be previewed via voice search or smart assistants (e.g., "Hey Spotify, play a preview of...").

- **Why**: Aligns with growing voice-first consumption.

- **Impact**: Expands use cases and increases discoverability on passive devices.

Possible Pitfalls & Mitigations

- Feature is unintuitive for some: Users Introductory prompts for users who accessed the feature first time

- Low Adoption Rate among Podcast Creators: Can introduce a incentive bonus to podcast creators who add the Snippet

- Increased costs of Content Delivery Network when feature goes live

- Insuring features need to be adopted widely, otherwise they need to be killed.