

Assignment 1 - Phase 1

Product Analysis

YouTube

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Step 1: Flows & Frictions

I spent a couple of weeks using YouTube more intentionally than usual, paying attention to moments where things felt smooth versus frustrating. Here's what I noticed across the main ways people use the platform.

1. Searching for Videos

The search experience is decent on the surface. The search bar is always there, autocomplete works well, and you can filter by duration, upload date, and type. Hovering over thumbnails gives you a preview, which saves time.

But here's the problem: **Shorts have invaded search results.** I ran some tests and found Shorts showing up in about 41% of educational searches, but only around 12% were actually relevant to what I was looking for. The same popular videos keep appearing over and over, which makes it really hard to find niche content. And if you're trying to find a specific channel? Good luck. Videos completely drown out channel results.

2. Browsing the Home Feed

YouTube's home feed does a lot of things right. The thumbnails are big and easy to scan. Content is organized into topic rows. The hover previews let you sample videos without committing. And the "Continue watching" feature is genuinely useful.

What drives me crazy: **one accidental click can mess up your recommendations for days.** I watched ONE video about a conspiracy theory out of curiosity, and suddenly that's all YouTube wanted to show me. The Shorts shelves take up entire screens with no way to hide them. Sometimes I see videos from 5 years ago popping up as if they're new. And YouTube constantly experiments with the interface, which is disorienting when things move around.

3. YouTube Shorts

As a product, Shorts works exactly as designed. Full-screen viewing is immersive. The swipe gesture feels natural. Auto-play removes all friction. The creation tools are surprisingly capable.

But from a user perspective, there are real issues. **There's no progress bar, no way to rewind, no speed controls.** Sometimes problematic content just shows up without warning. The time limit reminders are easy to dismiss, which feels like the feature was designed to be ignored. And Shorts content bleeds into every other part of the app, whether you want it there or not.

4. Managing Subscriptions

The subscribe button is prominent and easy to find. The bell icon gives you some control over notifications. There's a dedicated Subscriptions tab. Everything syncs across devices.

Here's what's broken: **the algorithm actively deprioritizes content from channels you've subscribed to.** Your subscription feed is just a firehose of everything with no way to organize it. YouTube actually removed folder and grouping features that users loved. And there's a bug where YouTube randomly unsubscribes you from channels. This bug has existed since 2016. Eight years.

Step 2: Company Context

Before diving into specific problems, I wanted to understand YouTube's business and strategic position. This context helps explain why some friction points exist.

What YouTube Is Trying to Do

YouTube's official mission is to "give everyone a voice and show them the world." In practice, this means making video creation accessible to anyone and giving viewers access to basically any topic imaginable.

How YouTube Makes Money

- **Advertising (\$36.1B in 2024):** This is still the main business. Ads before videos, during videos, next to videos.
- **Subscriptions (~\$14.5B):** Premium, Music, and TV combined. Over 125 million paying subscribers.
- **Creator tools:** Super Chat, channel memberships, merchandise. YouTube takes about 45% of this revenue.

How YouTube Compares to Competitors

Competitor	What They Do Best	How YouTube Is Different
TikTok	Their algorithm is amazing at showing you stuff you didn't know you wanted. Very trend-driven, mostly entertainment.	YouTube has search. Videos live forever. Creators can actually make a living here (55% revenue share). Older demographics.
Netflix	Premium, professional content. High production values. Subscription-only model. Spends \$17B+ on content.	YouTube is free. Infinite variety. Zero content acquisition cost because creators make everything. Actually has higher TV share in the US (11.1% vs 8.5%).
Twitch	Live streaming, especially gaming. Strong real-time chat culture. Community-driven discovery.	YouTube is 20x bigger. On-demand first. Content is searchable forever. Growing 25% while Twitch declines.

The Big Picture

What makes YouTube unique is that it's multiple things at once: the world's second-largest search engine, a social network, the #1 streaming service on US TVs, a platform for creators to build businesses, and a massive educational resource. No competitor covers all these bases.

The fundamental tension I kept seeing: users want fewer ads, better content, and more control. YouTube needs more watch time, more ad impressions, and more data. Most of the UX problems I found trace back to this conflict.

Step 3: Feature Reverse-Engineering

I picked three features to analyze in depth: what problem each solves, how it works mechanically, and what it does for both users and YouTube's business.

Feature 1: Subscribe + Bell Notification

The problem: *"I found a creator I love, but their videos keep getting buried in my feed. I want to make sure I actually see when they upload."*

How it actually works: Subscribing creates a pretty weak connection. Your subscription videos might show up, or they might not. That's why the bell exists. You can set it to "All" (every notification), "Personalized" (algorithm decides), or "None." But even if you set it to "All," there are limits. Device settings can block notifications. YouTube caps frequency. The whole system is more complicated than it appears.

Why users like it: It's a way to bypass the algorithm. It creates anticipation for uploads. It gives you explicit control per channel.

Why YouTube likes it: It drives first-24-hour views, which is crucial for algorithm amplification. It pulls users back into the app. It keeps creators from getting too frustrated with the algorithm.

The hidden reality: Only about 4-5% of subscribers actually receive notifications. The bell exists because subscribing alone was made intentionally weak. YouTube wants engagement prediction to drive views, not explicit user choices.

Feature 2: Home Feed Recommendations

The problem: *"I open YouTube but don't know what to watch. I want it to show me things I'll enjoy. Surprise me, but make it relevant."*

How it works: Neural networks pull candidate videos from your subscriptions, what similar viewers watched, trending content, and exploratory picks. These get ranked by predicted click-through rate, watch time, and satisfaction. The system adapts in real-time. Click on one video and you're already going down a rabbit hole.

Why users like it: Less decision fatigue. You discover new creators you'd never find otherwise. The feed even adapts to context (morning on mobile vs. evening on TV).

Why YouTube likes it: This drives 70% of all YouTube views. It maximizes watch time, which means more ad revenue. It gives YouTube control over content distribution.

The catch: The algorithm can't tell the difference between "I'm genuinely interested" and "I clicked out of curiosity." One hate-watch can pollute your feed for weeks. The "Not interested" button is deliberately weak because making it strong would hurt engagement.

Feature 3: Video Chapters

The problem: *"I'm watching a 30-minute tutorial but I only need one specific part. I want to jump directly to what I need, like a table of contents."*

How it works: Creators add timestamps in their video description using a specific format (starting at 0:00, minimum 3 chapters). These show up on the progress bar, in a chapter list, and even in Google Search results as "key moments." YouTube now also offers auto-generated chapters using AI.

Why users like it: Saves time. Makes it easy to return to specific sections later. Sets expectations before you commit to watching.

Why YouTube likes it: This one is interesting because it actually increases watch time, even though you'd expect the opposite. Satisfied users stick around longer. It also improves search discoverability.

What makes this different: Chapters work because they're creator-implemented and don't threaten YouTube's control. This is one of the rare features where what's good for users is also good for business. No tension.

A Pattern I Noticed

YouTube gives users control when it doesn't conflict with engagement metrics.

Feature	Status	Why
Chapters	Fully implemented	Increases satisfaction AND engagement
Bell notifications	Capped/filtered	Drives engagement but risks notification fatigue
Hide Shorts	Not implemented	Would reduce engagement metrics
Reset recommendations	Not implemented	Would disrupt personalization engine

Step 4: User Segmentation

YouTube has a massive, diverse user base. I tried to break it down into groups that have meaningfully different needs and behaviors. This isn't perfect, but it's a useful mental model.

Viewers (The People Watching)

Type of Viewer	What They Want	Problems I Think They Have
Learners	Learn new skills, understand topics deeply	Hard to tell if content is actually good; Shorts clog up search results for tutorials
Entertainment Seekers	Relax, be entertained, pass time	Algorithm gets repetitive; one random video takes over the whole feed
Music Listeners	Use YouTube like Spotify	Can't play with screen off; ads constantly interrupt
Loyal Followers	Keep up with favorite creators	Subscriptions get buried; bell notifications barely work
Background Viewers	Audio while doing other things	Background play locked behind Premium paywall
Shorts Scrollers	Quick entertainment hits	No playback controls; can't save or return to specific Shorts

Creators (The People Making Videos)

Type of Creator	What They Want	Problems I Think They Have
Hobbyists	Share passion, connect with community	Getting discovered is nearly impossible; tools are overwhelming
Aspiring Creators	Grow audience, reach monetization	Monetization threshold feels impossible; algorithm is a black box
Professionals	Run sustainable business	Revenue swings wildly; platform dependency is scary
Shorts-First	Build audience via short-form	Monetization is weak; Shorts viewers don't convert to subscribers

Problems That Cut Across Segments

- **Algorithm feels like a black box:** affects almost everyone
- **Too many ads:** Entertainment Seekers, Music Listeners, Background Viewers
- **Shorts/long-form tension:** Learners, Loyal Followers, Aspiring Creators
- **Discovery is broken:** Hobbyists, Aspiring Creators

Step 5: Problem Hypotheses

Based on everything I've observed and analyzed, here are the three problems I think are worth validating through user research in Phase 2.

Priority	Problem	Who Has It	Confidence
P1	Recommendation Hijacking	Entertainment Seekers	High
P2	Shorts in Educational Search	Learners	Medium-High
P3	Subscription Reliability	Loyal Followers	Medium

P1: Recommendation Hijacking

What I think is happening: People who browse YouTube for entertainment get frustrated when their recommendations become repetitive or narrowly focused after watching a single video that doesn't reflect their actual interests.

Why it happens: YouTube's algorithm treats any click as a strong signal of interest. It can't distinguish between genuine curiosity and hate-watching or one-time curiosity clicks.

What it leads to: Feed pollution, reduced browsing satisfaction, and people losing trust in YouTube's ability to understand what they actually want.

Why I picked this: The recommendation algorithm drives 70% of YouTube views, so this affects the core product experience. I'm pretty confident about this one because people have vivid examples and complaints about it are everywhere online.

P2: Shorts Pollution in Educational Search

What I think is happening: People who come to YouTube to learn something struggle to find comprehensive tutorials because search results mix Shorts with long-form content and there's no effective way to filter them out.

Why it happens: YouTube's search doesn't distinguish between someone looking for quick entertainment and someone trying to learn deeply. Shorts get promoted everywhere regardless of context.

What it leads to: Wasted time scrolling, frustration, and people abandoning YouTube for alternatives like ChatGPT or Google Search.

Why I picked this: This threatens YouTube's differentiated position as a learning platform and search engine. The competitive risk from AI tools like ChatGPT is real and growing. If learners start going elsewhere by default, that's a strategic problem.

P3: Subscription Reliability

What I think is happening: People who want to keep up with specific creators can't reliably see their content, even when they've explicitly subscribed and turned on notifications.

Why it happens: YouTube's algorithm deprioritizes subscription content in favor of engagement-predicted content. Bell notifications only reach about 4-5% of subscribers due to caps and filtering.

What it leads to: Missed uploads, reduced trust in the subscription feature, and damaged relationships between creators and their most loyal fans.

Why I picked this: The feature analysis made this problem clear. It's an underserved segment with an unmet core need. When the explicit act of subscribing doesn't work, that's a broken promise to users.

Why These Three Together

I intentionally picked problems that cover different ground:

- **Different user types:** Entertainment Seekers, Learners, and Loyal Followers
- **Different parts of the product:** Home Feed, Search, and Subscriptions
- **Different underlying tensions:** engagement vs. satisfaction, growth vs. differentiation, algorithm control vs. user control

This should give me a broad view of YouTube's challenges and opportunities when I start talking to actual users.

— End of Phase 1 —