
prime video

Agenda

Intro: Who is Matthew Kearney?

Product 1: LLM & Personalization

Product 2: Prime Video Mobile

Product 3: Prime Video Augmented Content (X-Ray)

Conclusion: Final Thoughts

Matthew Kearney

I’m a Staff/Principal Product Designer with 15+ years designing large-scale consumer experiences across streaming, personalization, AI systems, and commerce platforms. Focused on translating complex systems into intuitive, human-centered experiences at a global scale.

PRODUCT ONE

LLM PERSONALIZATION

Improve recommendation relevance and trust through LLM-driven personalization

Role: Lead

This initiative explored using customer input and machine learning to improve personalization relevance. The multi-phase approach combined pairwise and pointwise title comparisons, behavioral signals, direct customer feedback, and preference management to help recommendations feel more intuitive, personalized, and human-centered.

PROBLEM STATEMENT

Prime Video customers increasingly expect recommendations to feel personally relevant, transparent, and adaptive to their evolving interests. Today, many customers lack confidence in why content is recommended to them and have limited control over shaping those recommendations. Investing further in personalization creates an opportunity to build greater trust, improve discovery relevance, and give customers more agency over the entertainment experiences they want to see more or less of.

PHASE ONE 01

Validate human-aligned recommendation scoring

PHASE TWO 02

Scale evaluation across customer segments

PHASE THREE 03

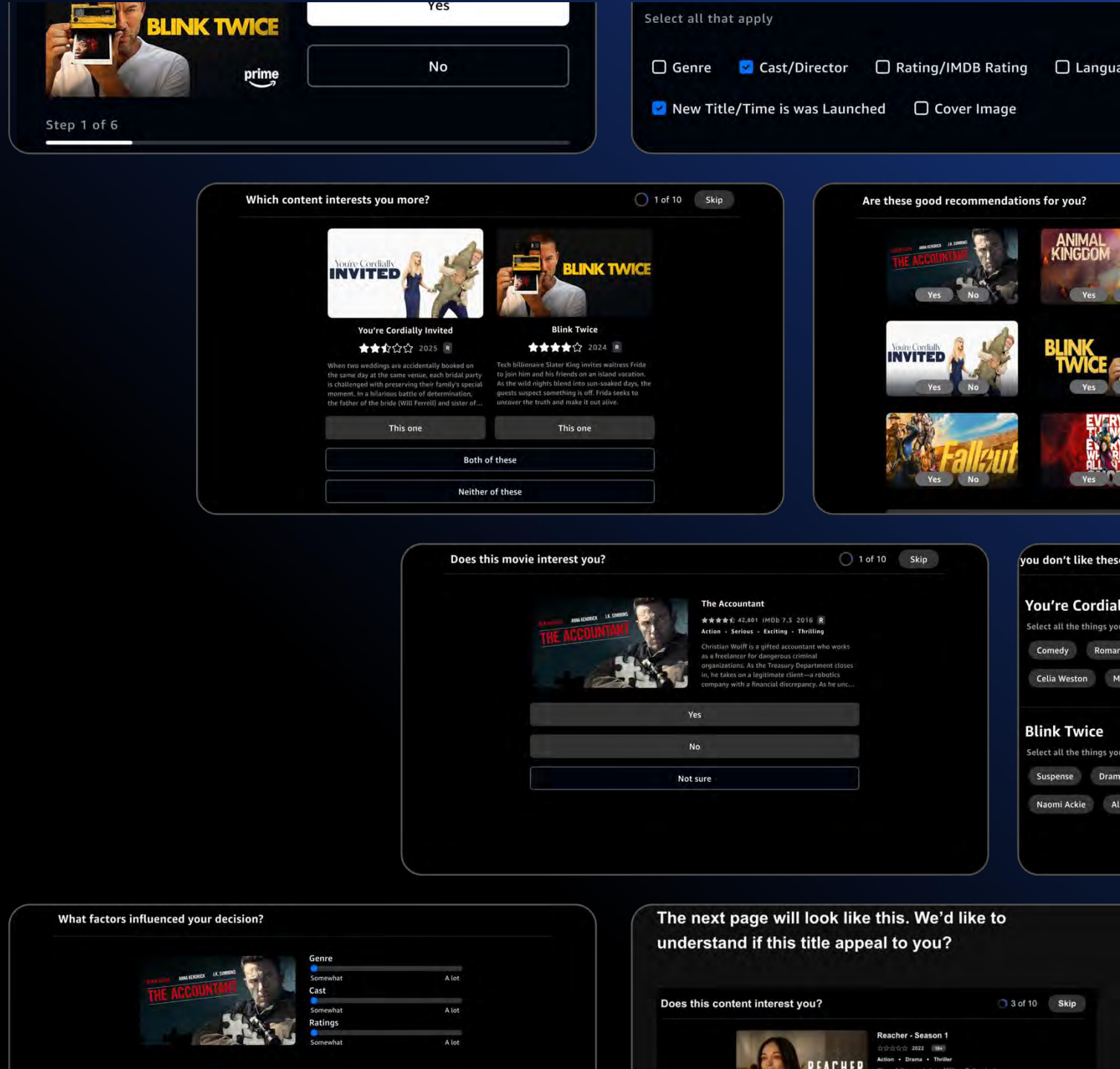
Build a reinforcement learning feedback loop

LLM TITLE ANNOTATIONS

At project initiation, the PM wanted to design a ‘pairwise’ (two-title) experience for A/B testing. Customers would be presented with two options and make a single selection.

I suggested we reduce the complexity with a ‘pointwise’ (single-title) approach. Cognitive overload was one concern and having to choose between two equally relevant titles would skew the personalization data.

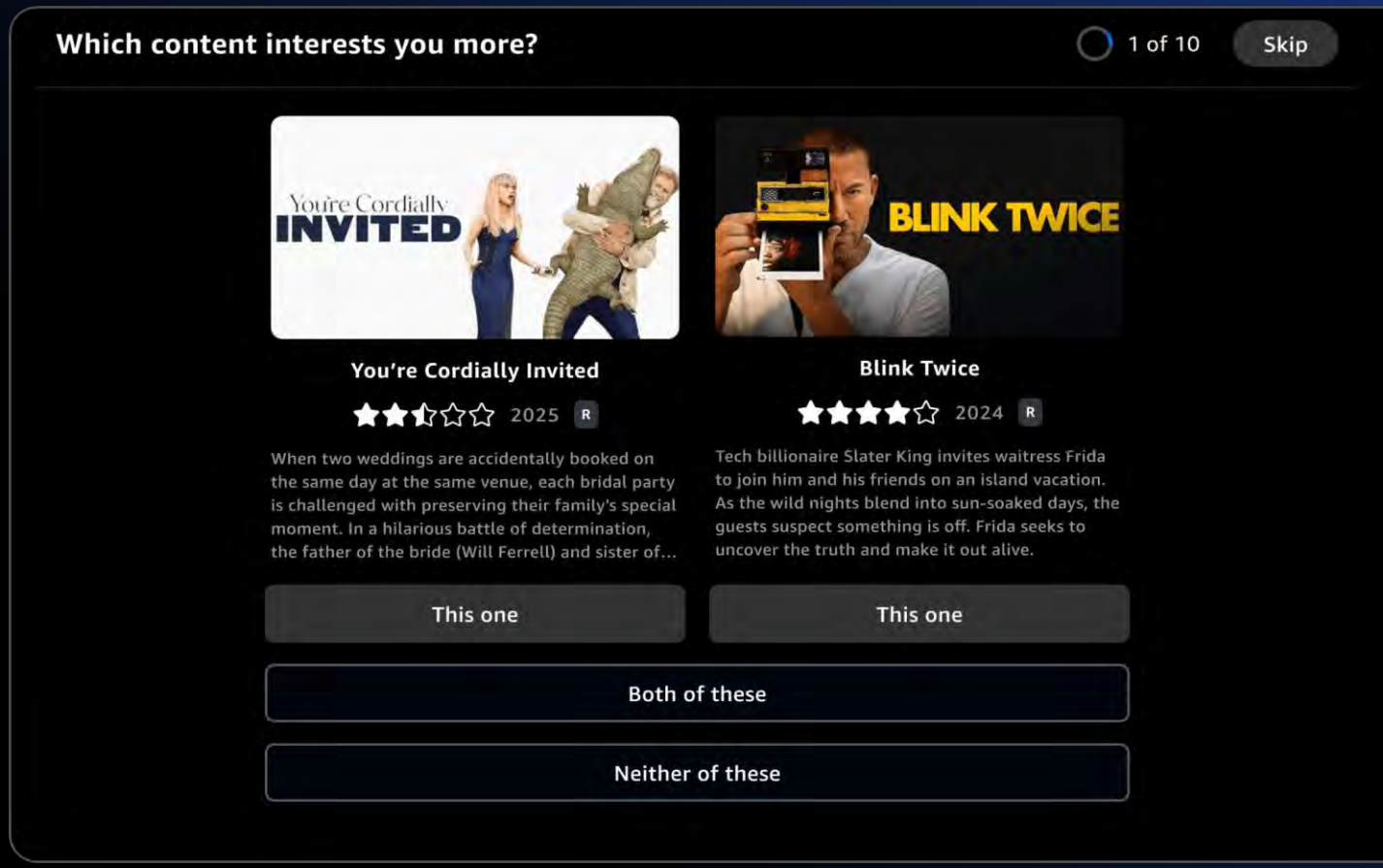
The PM wanted to proceed with the double title pairwise approach.



PAIRWISE ANNOTATIONS

Early analysis showed the LLM achieved 65% accuracy in predicting pairwise title preferences.

The research also surfaced data quality challenges, including position bias, inconsistent responses, unrealistic skip rates, and tooling limitations.



PAIRWISE DATA ANALYSIS

We benchmarked the recommendation model against MovieLens-1M to validate human-aligned preference prediction.

- Active streamers only
- Removed inconsistent annotations
- Removed strong position bias
- Capped annotations per user
- Final dataset: 97 users / 1,768 annotations

The following data quality concerns were captured

01 Position Bias

02 Inconsistent Responses

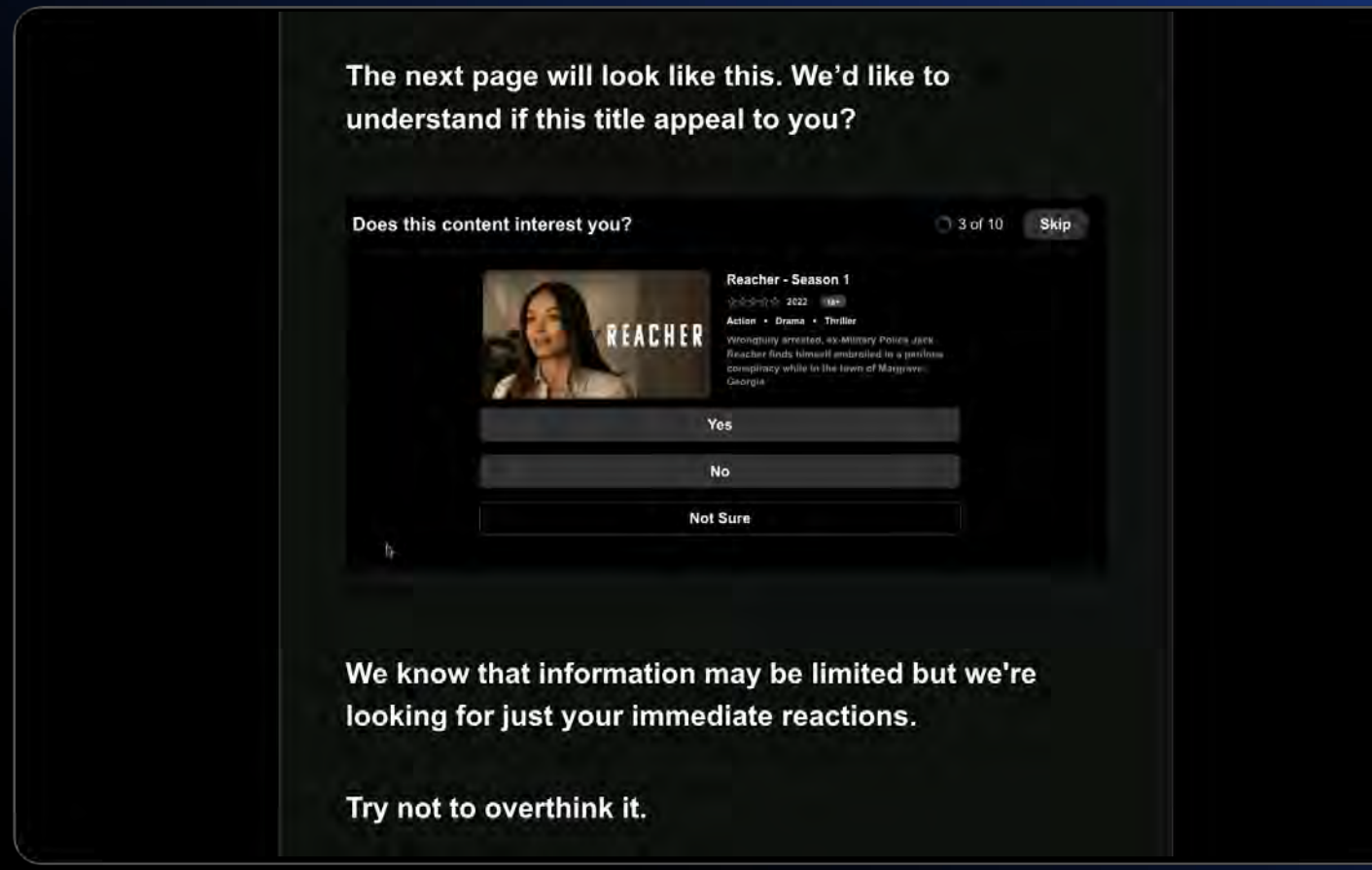
03 Unrealistic Skip Rates

04 Tool Limitations

POINTWISE REFINEMENT

Data analysis indicated that a pointwise CX would improve data quality and reduce position bias by 35%.

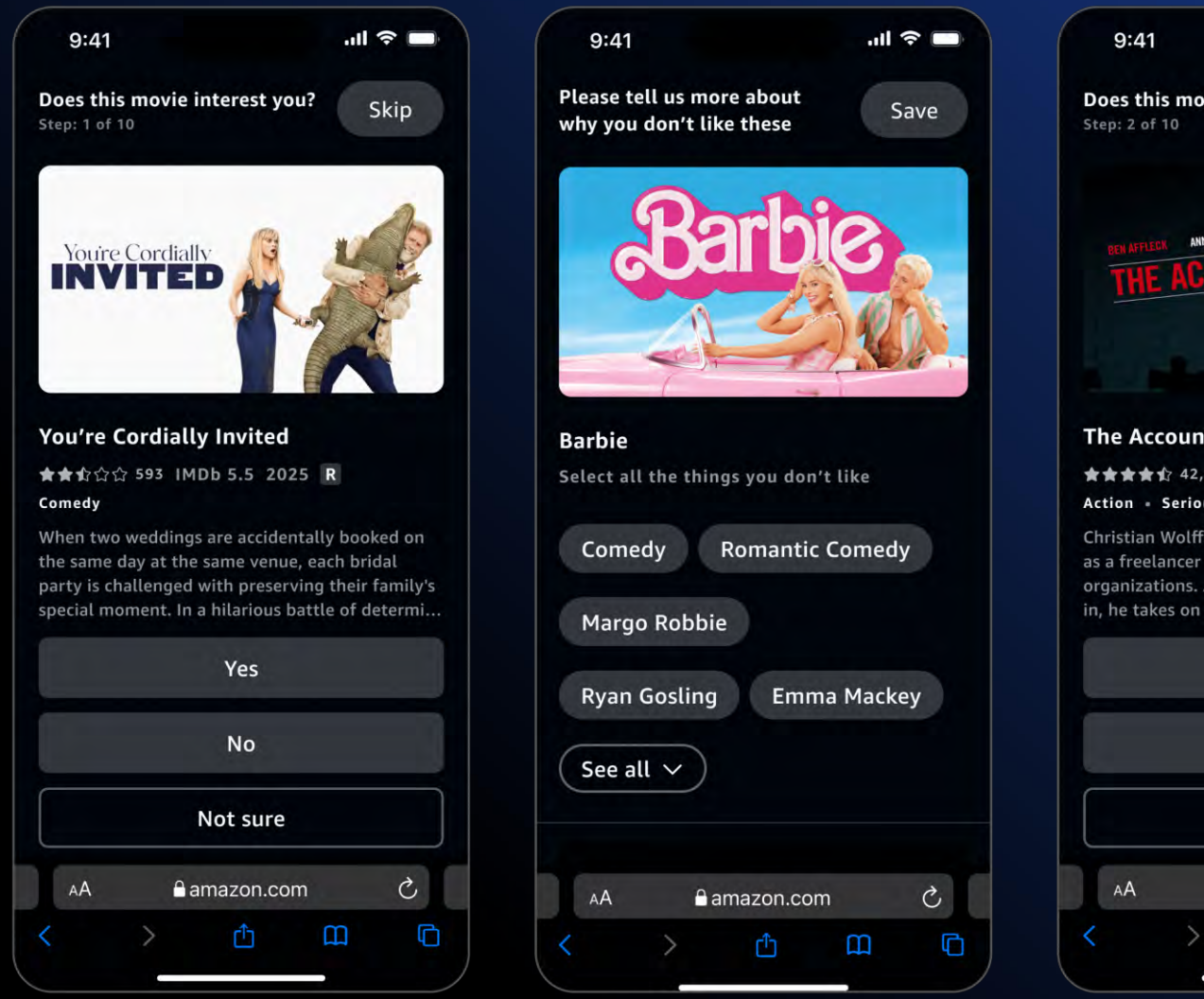
As expected, implementing a pointwise CX decreased cognitive load and increased title annotations by 50%. It also expanded data collection volume by 30%.



MOBILE OPTIMIZATION

Originally built for internal testing, I optimized the CX to support external participants.

I also included the option for customers to provide additional granular feedback on titles that didn't interest them, which fed the LLM critical personalization signals.



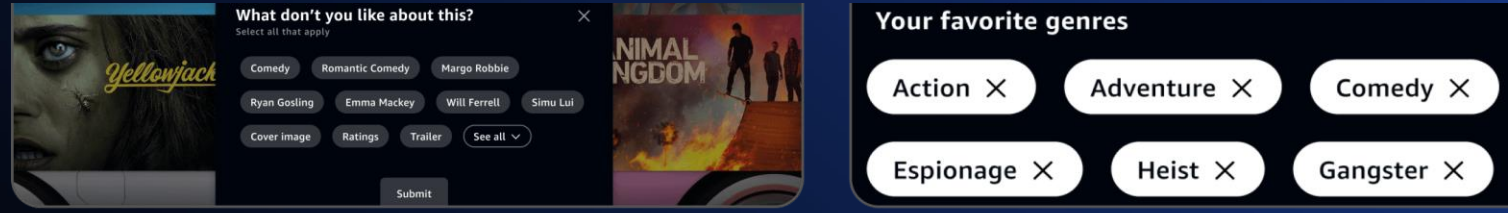
BUILDING THE CX BEYOND AI

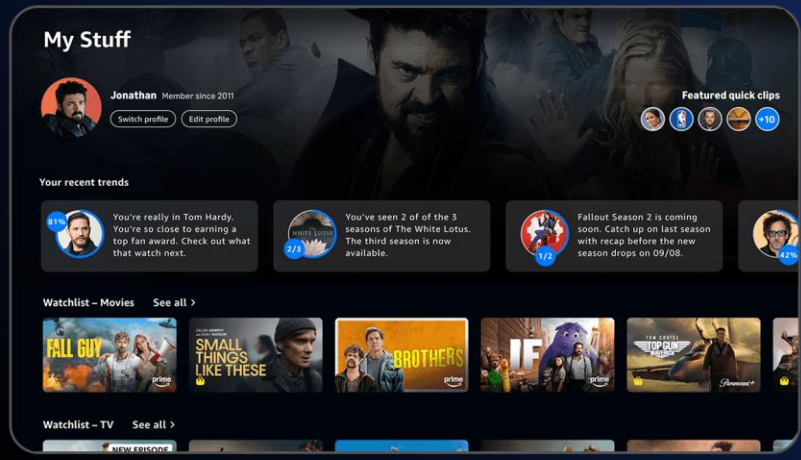
With personalization at the core of the project, I reframed the challenge:

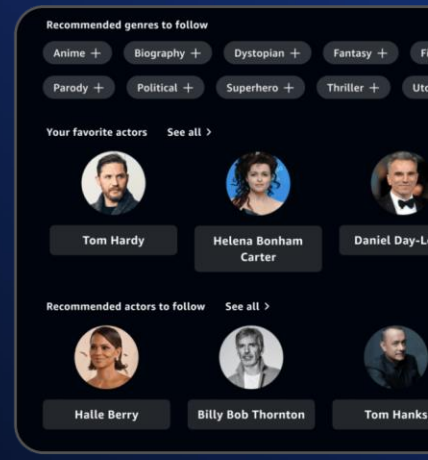
How might we build not just for the customer, but with the customer?

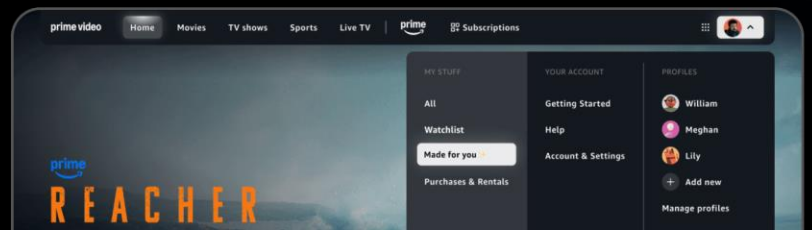
Can we unite human engagement with algorithmic intelligence to create a more authentic connection?

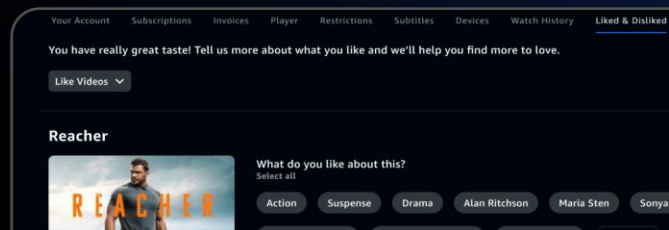
The following screens capture that exploration — a journey that gives our customers more agency.







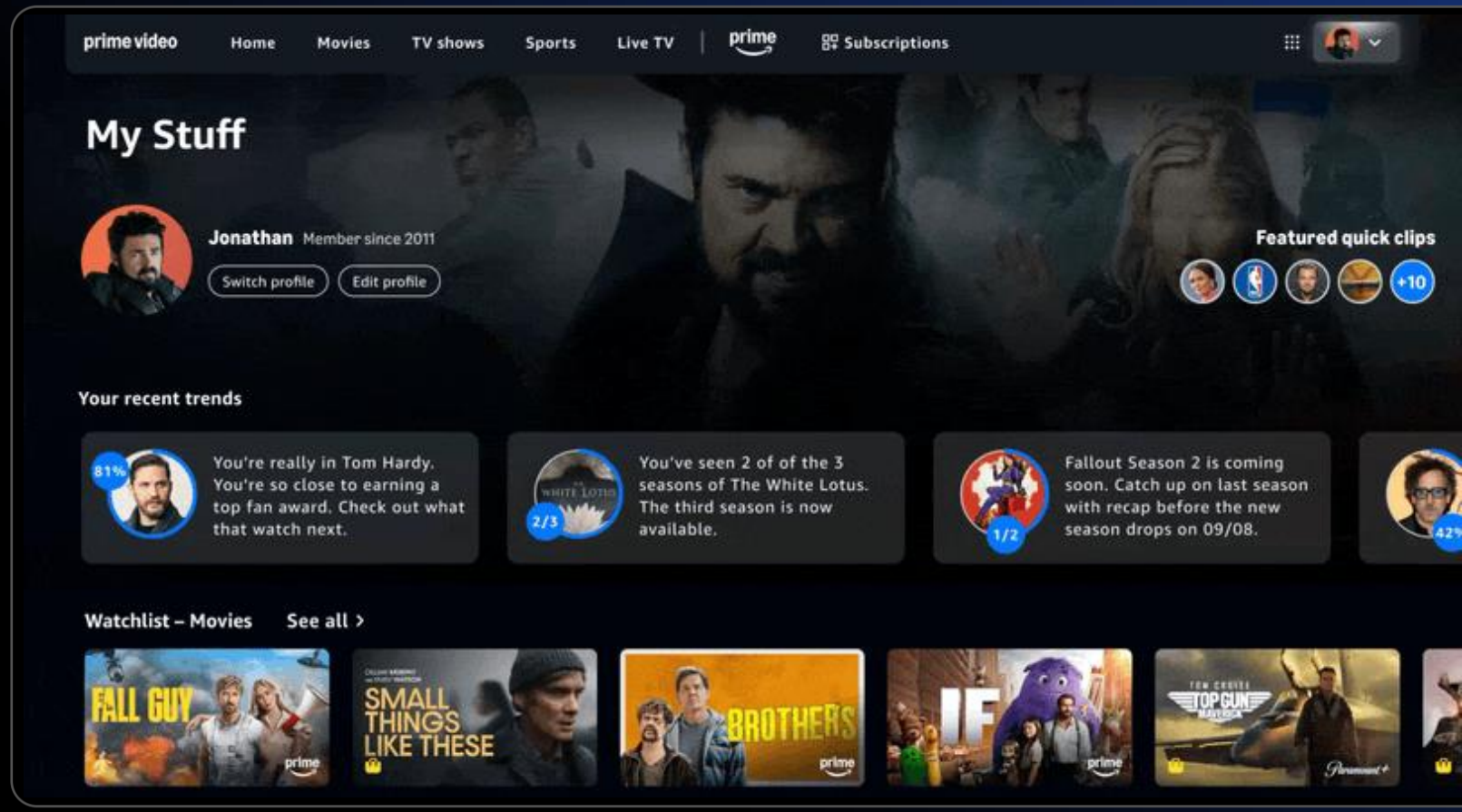




REIMAGINING MY STUFF

Evolving My Stuff from a passive content locker into a personalized entertainment hub centered around discovery, curation, and customer control.

- Personalized clip shortcuts tailored to customer interests
- Recently liked and disliked content with direct access to reaction management
- Made For You is integrated directly into My Stuff
- Genre tagging to give customers more control over recommendations
- Celebrity and studio follows for ongoing personalized discovery



ENHANCING MADE FOR YOU ✨

To boost discoverability and engagement with high-confidence marquee content, we've relocated Made For You from Featured Collections to My Stuff — our personalization hub.

01
Contextual Fit

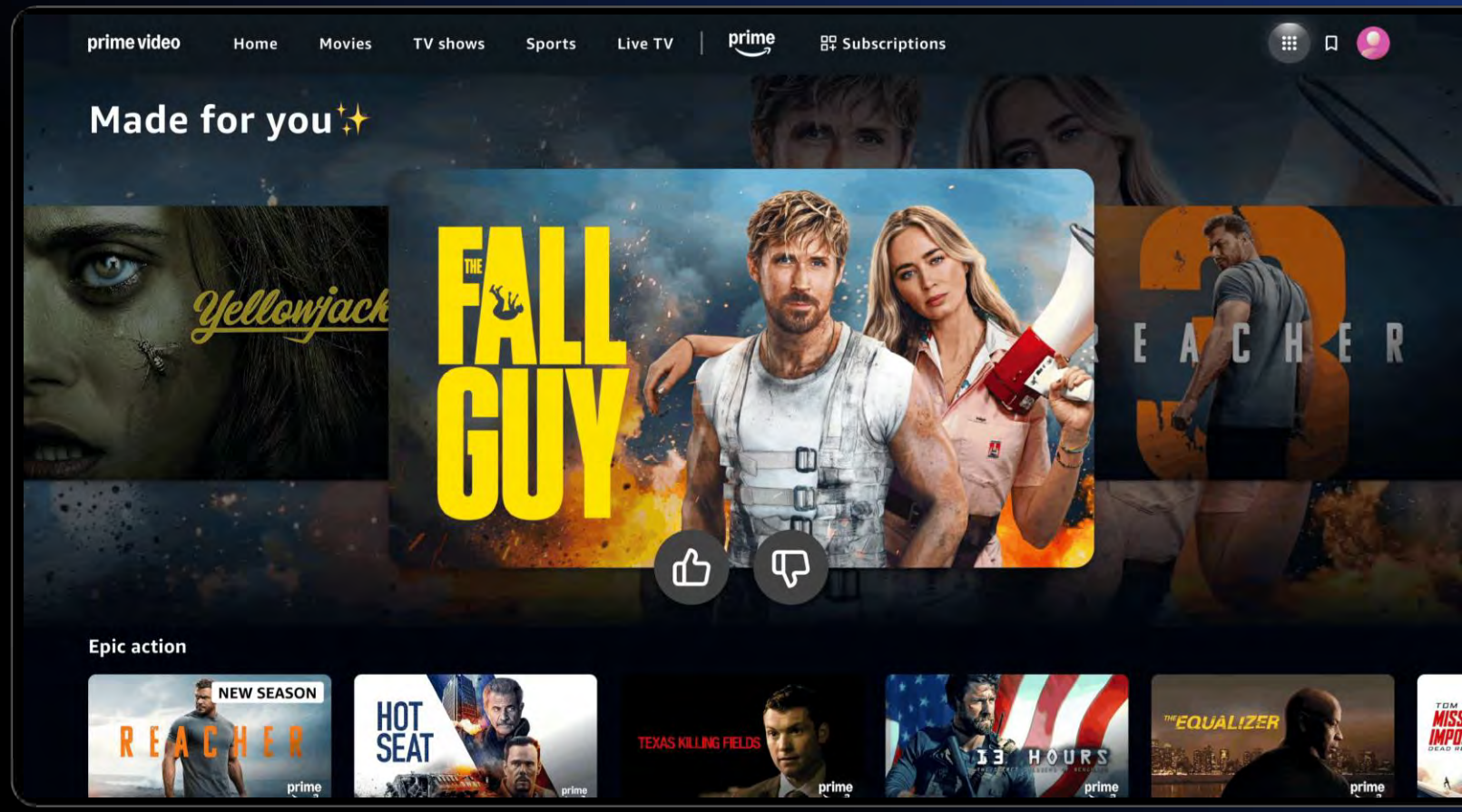
02
Better Visibility

03
Deeper Engagement

MADE FOR YOU ✨

Made For You was redesigned to deliver personalized discovery through LLM-driven recommendations, while giving customers lightweight controls to refine future recommendations through preference tagging.

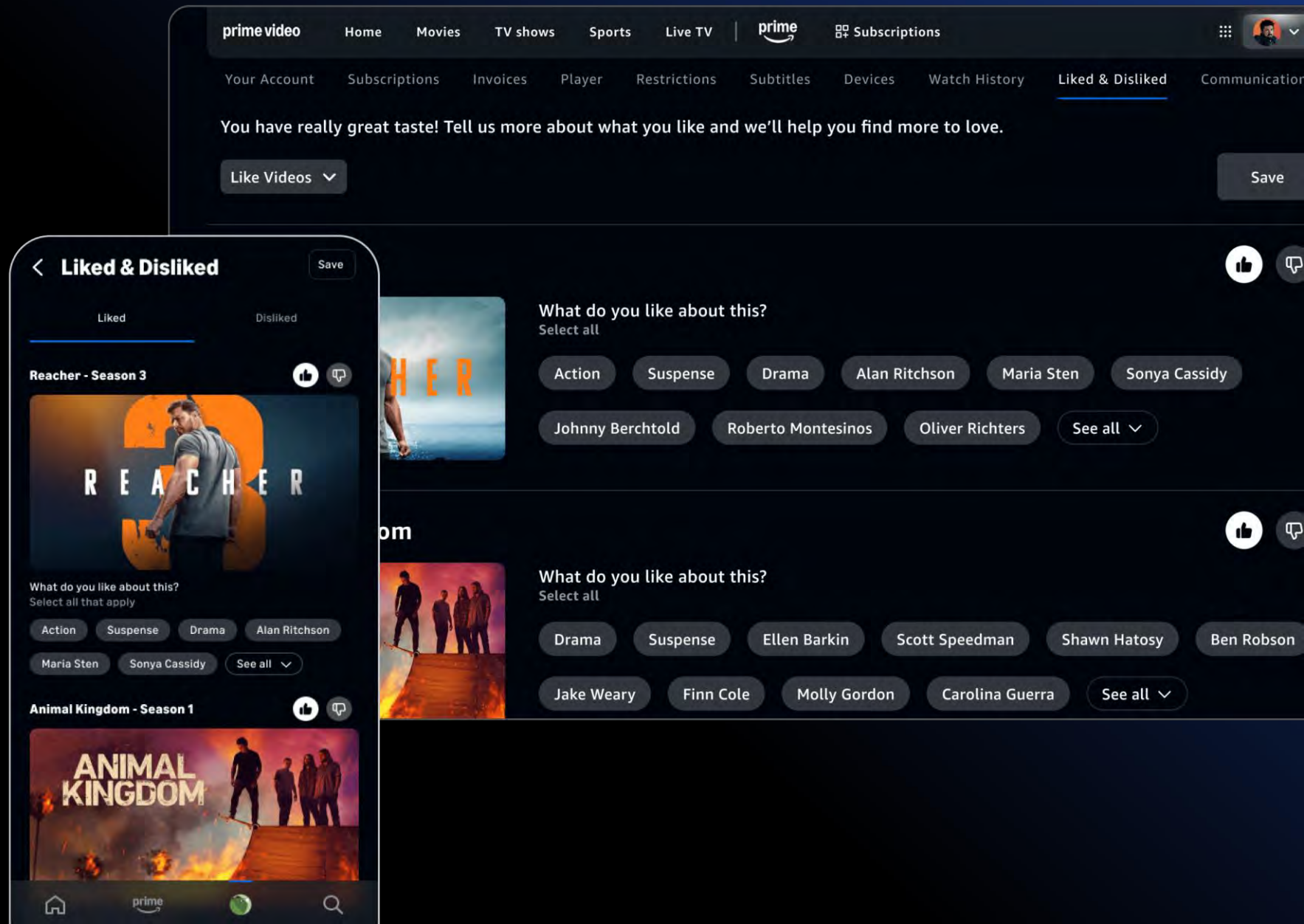
Likes remained a strong personalization signal, while dislikes provided deeper insight into customer preferences. These feedback signals helped refine recommendations and improve the LLM's understanding of customer intent.



REACTION MANAGEMENT

Customer interactions surrounding likes and dislikes already shape personalization behind the scenes, but those signals have historically been invisible to users.

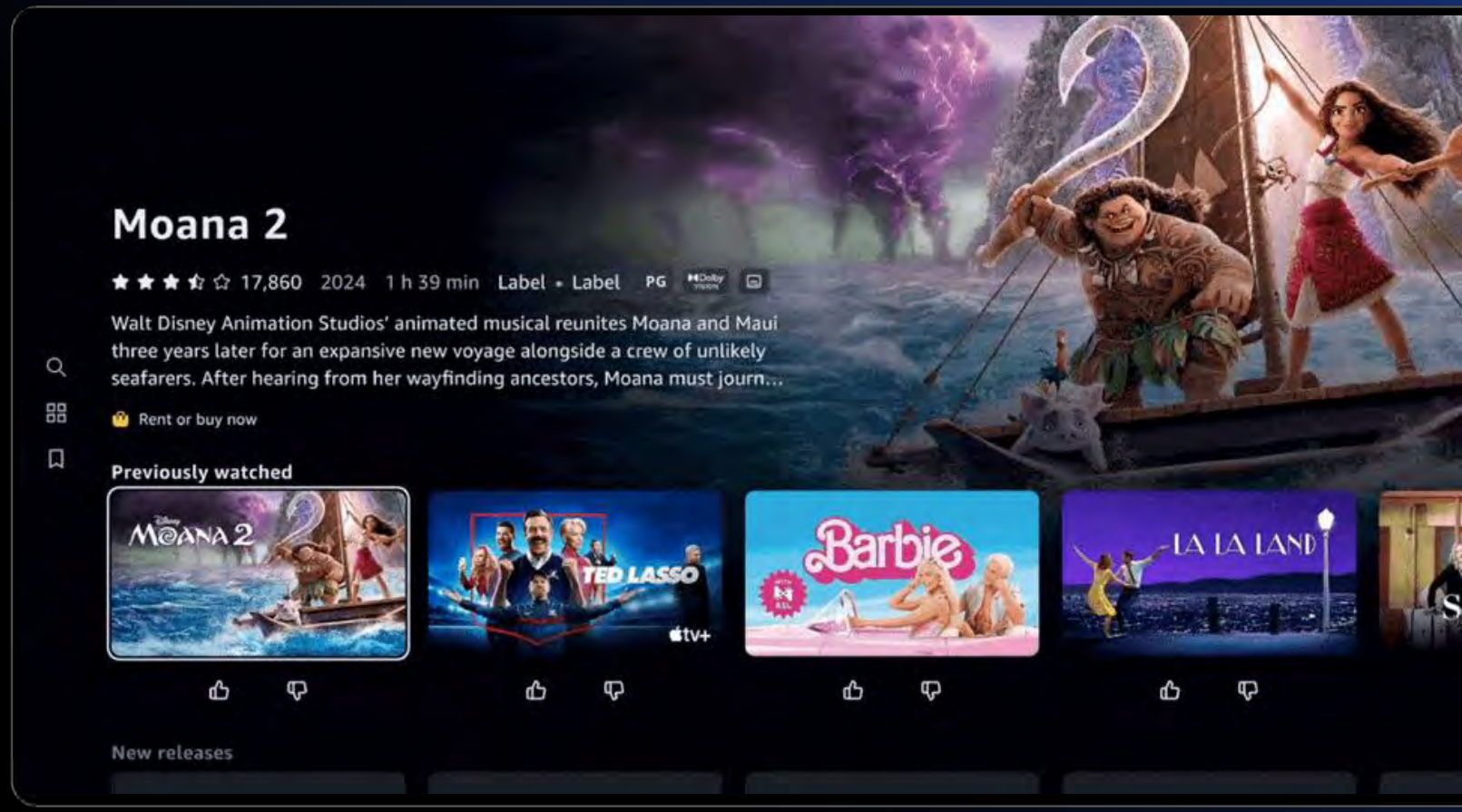
Introducing genre tagging enables more transparency and customer control, helping recommendations evolve alongside changing customer preferences.



PRODUCTION READY

Genre tagging was integrated anywhere Reaction Feedback appeared, helping capture richer personalization signals across the experience.

Looking ahead, Reaction Management would give customers more visibility and control over the signals shaping their future recommendations.



LLM PERSONALIZATION OUTCOMES

Our personalization strategy shifted from predicting customer behavior to actively collaborating with customer intent. Customers reported stronger confidence that Prime Video better understood their entertainment preferences. We strengthened recommendation trust by giving customers more visibility and control over personalization inputs.

Reduced annotation position bias by

35.4%

improving overall training data quality

Increased customer title annotations by

50.8%

after reducing cognitive load

Increased personalization data collection volume by

30.9%

through pointwise annotation refinement

Strengthened customer trust by

41.6%

by providing greater agency and control

PRODUCT TWO

MOBILE REDESIGN

Complete Mobile Redesign and Updated Foundational Design Language

Role: Lead

Project Rover was an initiative focused on reimagining the Prime Video mobile experience for evolving customer behaviors. Partnering closely with IDEO, I led a team of 10 designers through global research, mobile-first exploration, and rapid concept development to uncover new opportunities for discovery and engagement.

PROBLEM STATEMENT

The Prime Video mobile app was heavily modeled after the living room experience, overlooking the unique behaviors and expectations of mobile customers. We need a more intuitive, mobile-first experience built around lean-in, on-the-go engagement that also surfaces time-of-day personalization signals.

SUCCESS METRICS

Deep data analysis indicated we needed to improve:

- HPC (hours per customer)
- MAC (monthly active customers)
- DSD (distinct streaming days)
- Discovery effort (time to first activity)
- Customer reviews, anecdotes (heartbeat, etc.)
- DVD (distinct visiting days)
- HVA (high value actions)

prime video x IDEO

RESEARCH

Remote - Japan and India

- Diary Study
- Expert Interviews
- Landscape & Trends Analysis on China

In the field - Japan and India

- Follow-up in-context Interviews
- Analogous and immersive experiences
- Expert Interviews

RESEARCH INSIGHTS

01

Mobile customers primarily engaged in lean-in, low-effort browsing behaviors

02

Dense layouts improved title comparison efficiency later in the browsing journey

03

Sports, Live TV, and subscriptions suffered from low discoverability

04

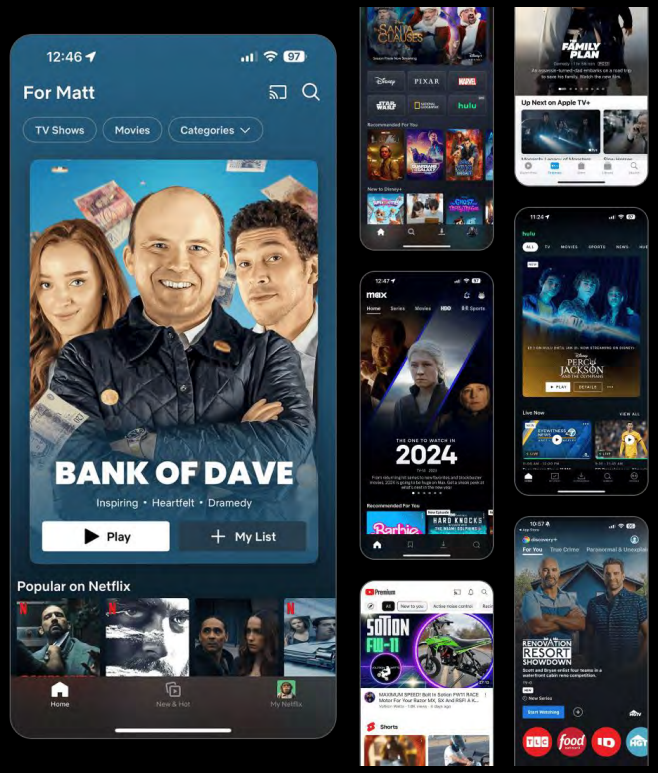
Customers wanted faster access to personalized contextual recommendations

05

Discovery fatigue increased when customers relied on scrolling instead of structured navigation

DESIGN KICKOFF

01
Competitive Analysis



02
Design Thinking Workshops

03
Sacrificial Concepts

EARLY EXPLORATIONS

Problem Statement

How might we make a more personalized, low-effort discovery experience built around short, engaging content?

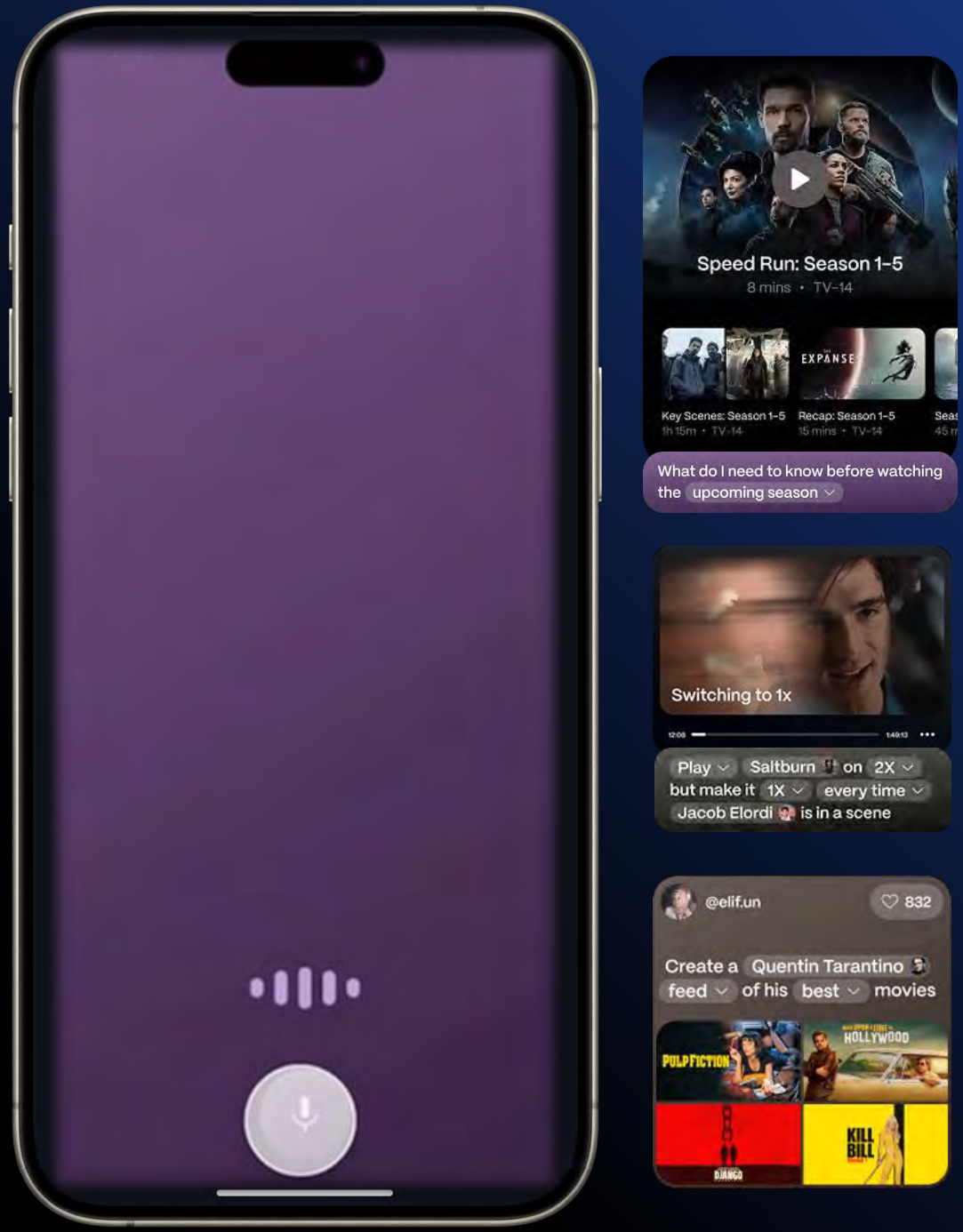
This concept centered around reducing content density by leveraging a dynamic, personalized feed with short, engaging, and interactive experiences with highly curated personalized content, while also encouraging lightweight discovery of new favorites.

EARLY EXPLORATIONS

Problem Statement

How might we build a natural language modal AI search to discover content using abstract search terms?

Built to provide an intuitive way to quickly find what you're looking for in addition to showcasing additional related content for improved discoverability.



EARLY EXPLORATIONS

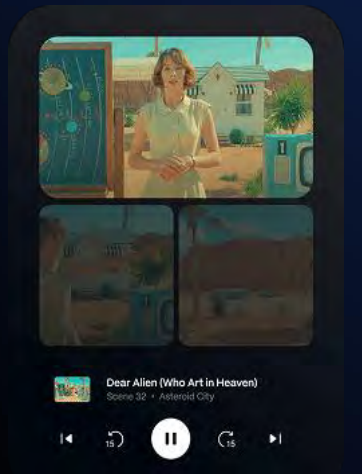
Problem Statement

How might we approach the mobile experience differently?

Fluid POV was developed for portrait mode viewing while maintaining all aspect ratios.

How might we optimize data usage?

Scene cards, graphic novel formats, and immersive audio significantly reduced data usage.

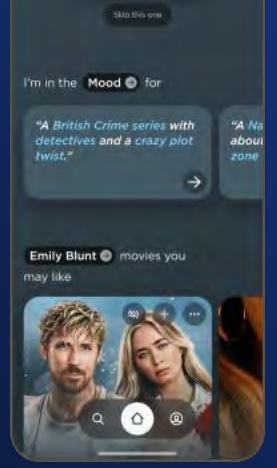


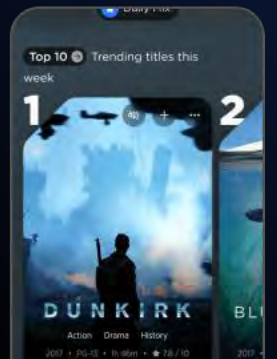
ITERATIVE EXPLORATIONS

Problem Statement

How might we reduce content density and lean into time-of-day personalization signals?

Our initial direction focused on reducing content density to improve discovery and make personalization feel more relevant. While customers initially felt overwhelmed by too many choices, follow-up testing showed 75% of participants preferred denser layouts for faster comparison and more efficient browsing later in the discovery journey.





IA PROBLEM STATEMENT

Research showed most mobile customers stayed on the Home page, with limited exploration of deeper app destinations. To improve discovery and engagement, I redesigned the mobile information architecture to better position Prime Video as a centralized entertainment hub — increasing visibility of sports, live TV, subscriptions, and curated content while driving stronger destination engagement and session success.

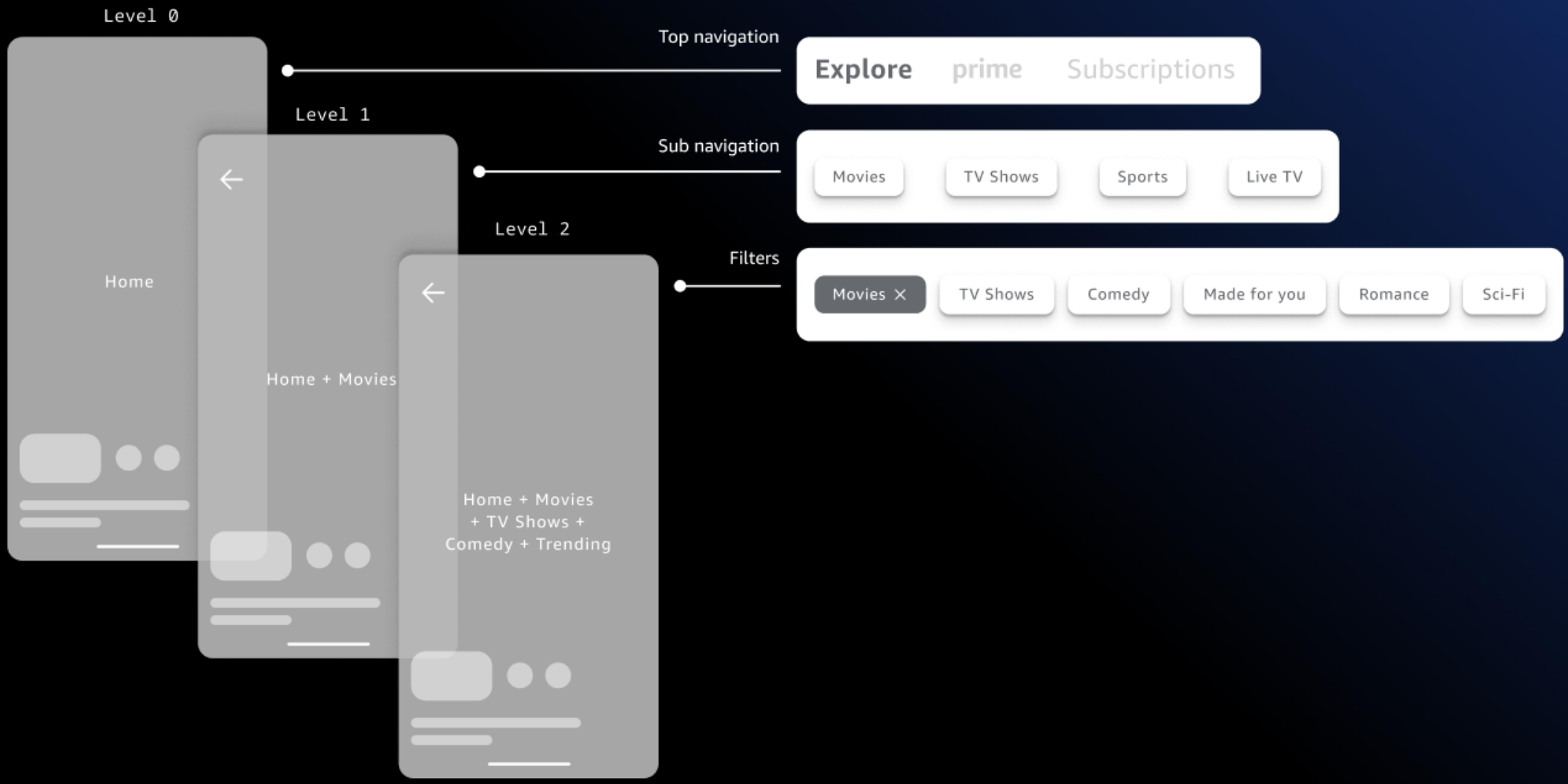
01 72% of mobile sessions remained concentrated on the Home page, with limited exploration of deeper destinations

02 Sports, Live TV, and subscription entry points experienced low discoverability and inconsistent engagement

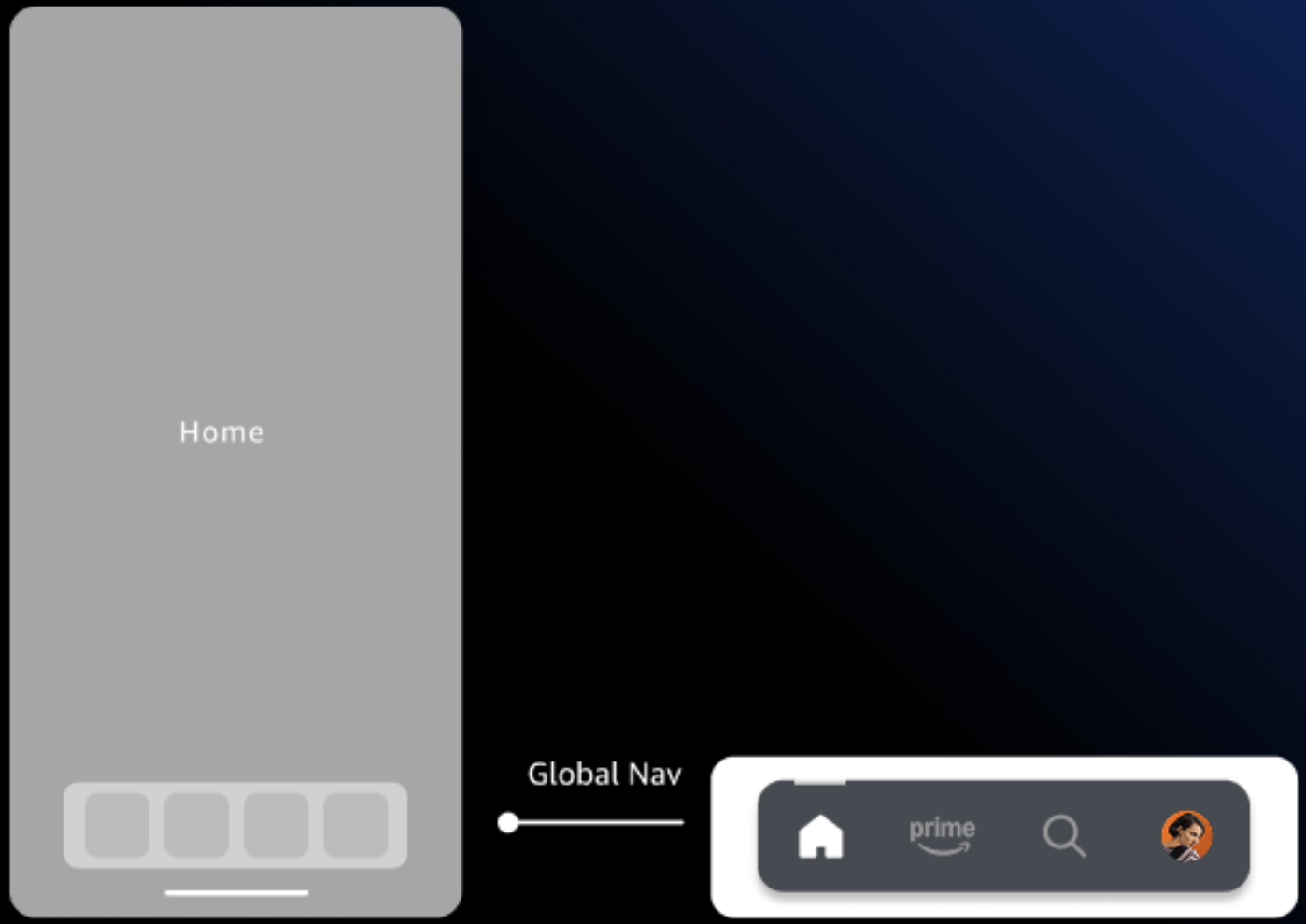
03 Customers frequently relied on scrolling rather than navigation, increasing discovery fatigue and decision friction

04 Session drop-off increased significantly when customers could not quickly identify relevant content pathways

UPDATED TOP NAVIGATION: A streamlined top nav focused on 3P subscriptions, secondary content areas and filters to explore specific genres, formats, or content providers.

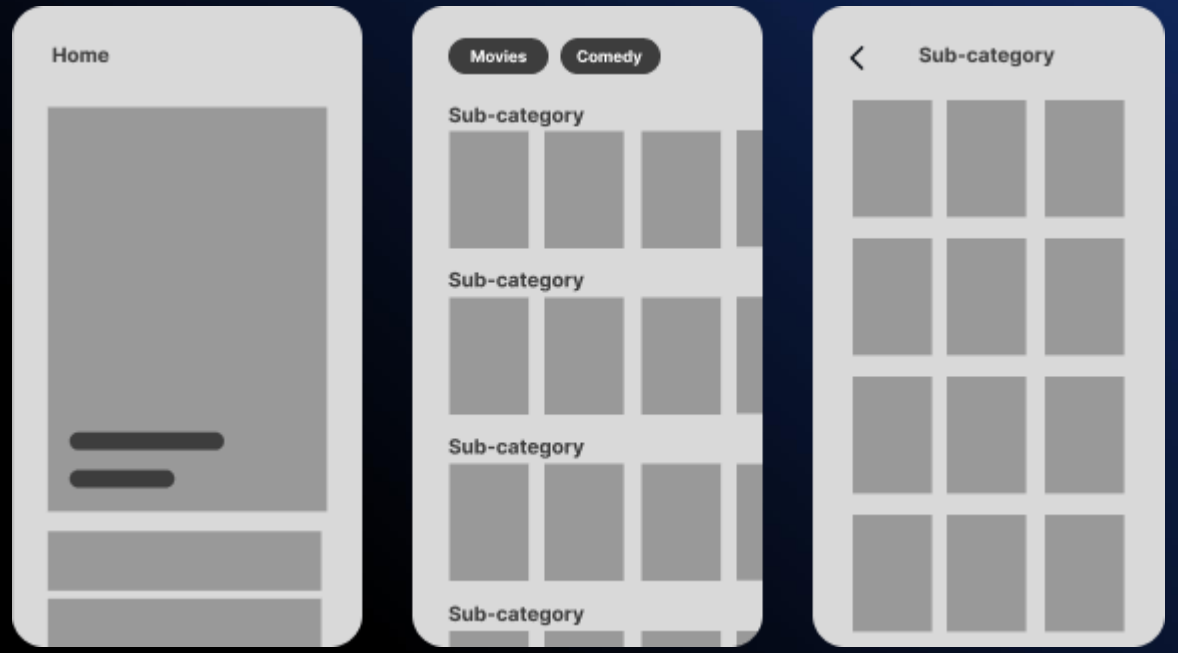


UPDATED BOTTOM NAVIGATION: A redesigned nav bar centered on core content areas—*Home* for browsing, *My Stuff* for managing saved and personal content, and *Search* for discovery.



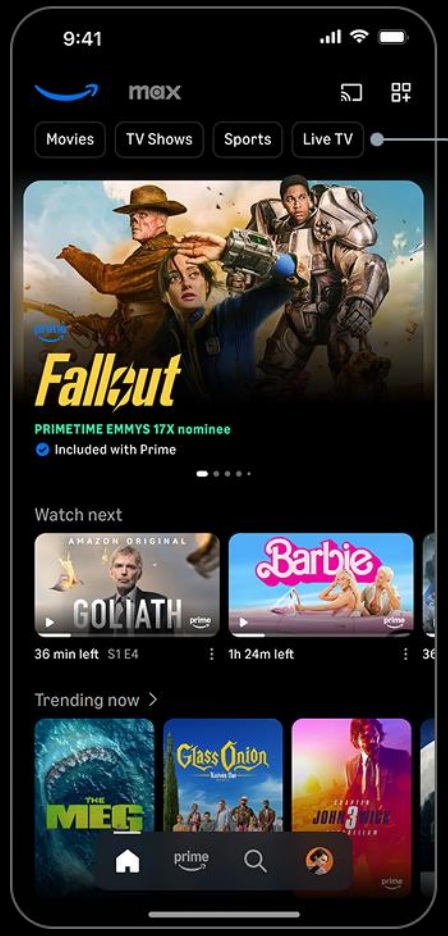
IA SUB-PAGE FLOWS

As customers moved deeper into discovery, most preferred denser layouts that enabled faster title comparison with less scrolling. Research showed users valued quickly scanning more content over immersive browsing experiences at this stage of the journey.

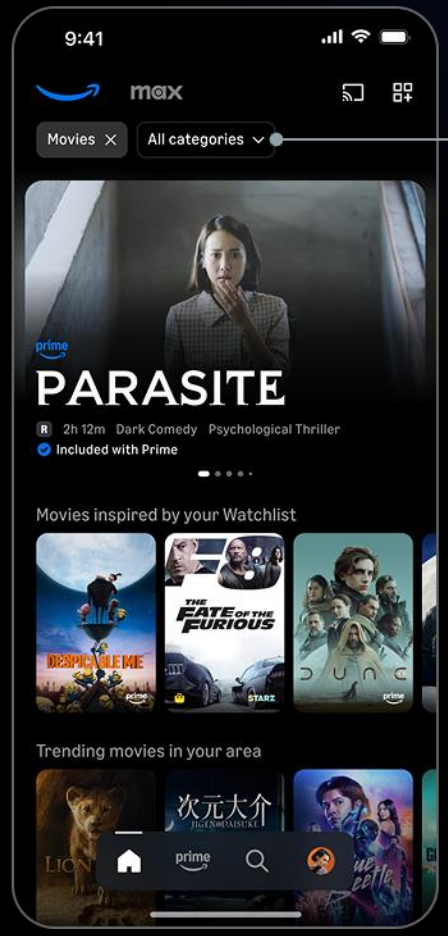


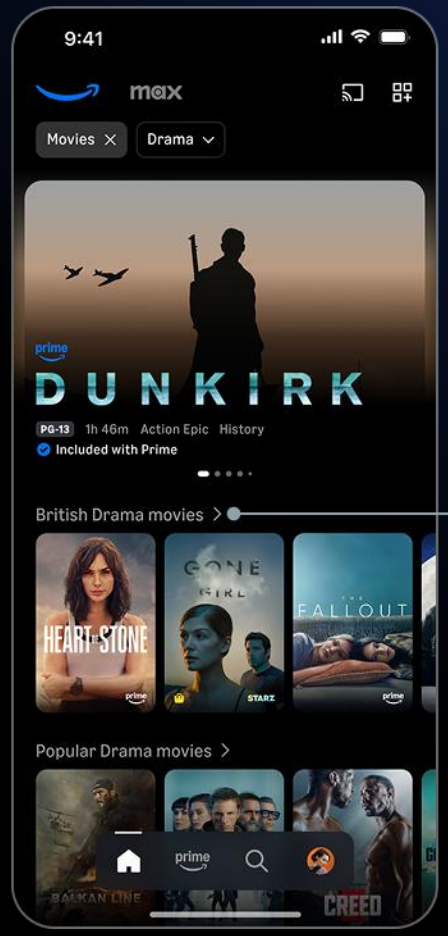
IA: UPDATED HOME SUB-PAGE FLOWS

Level 0
Home Landing Page



Level 1
Category & Subcategory Landing Page (may or may not have heroes)

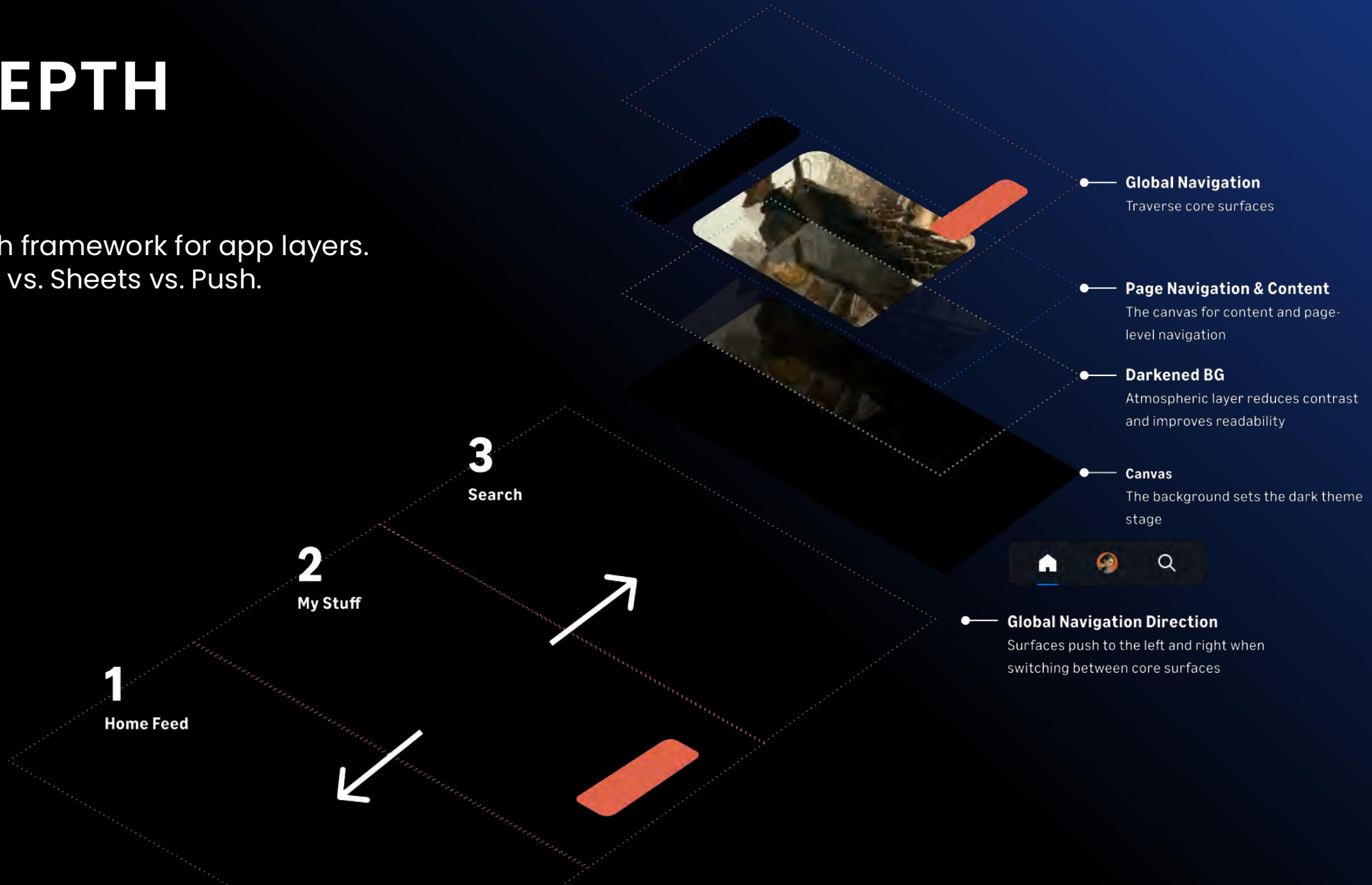




Level 2
Grid View Browse Page

Z-DEPTH

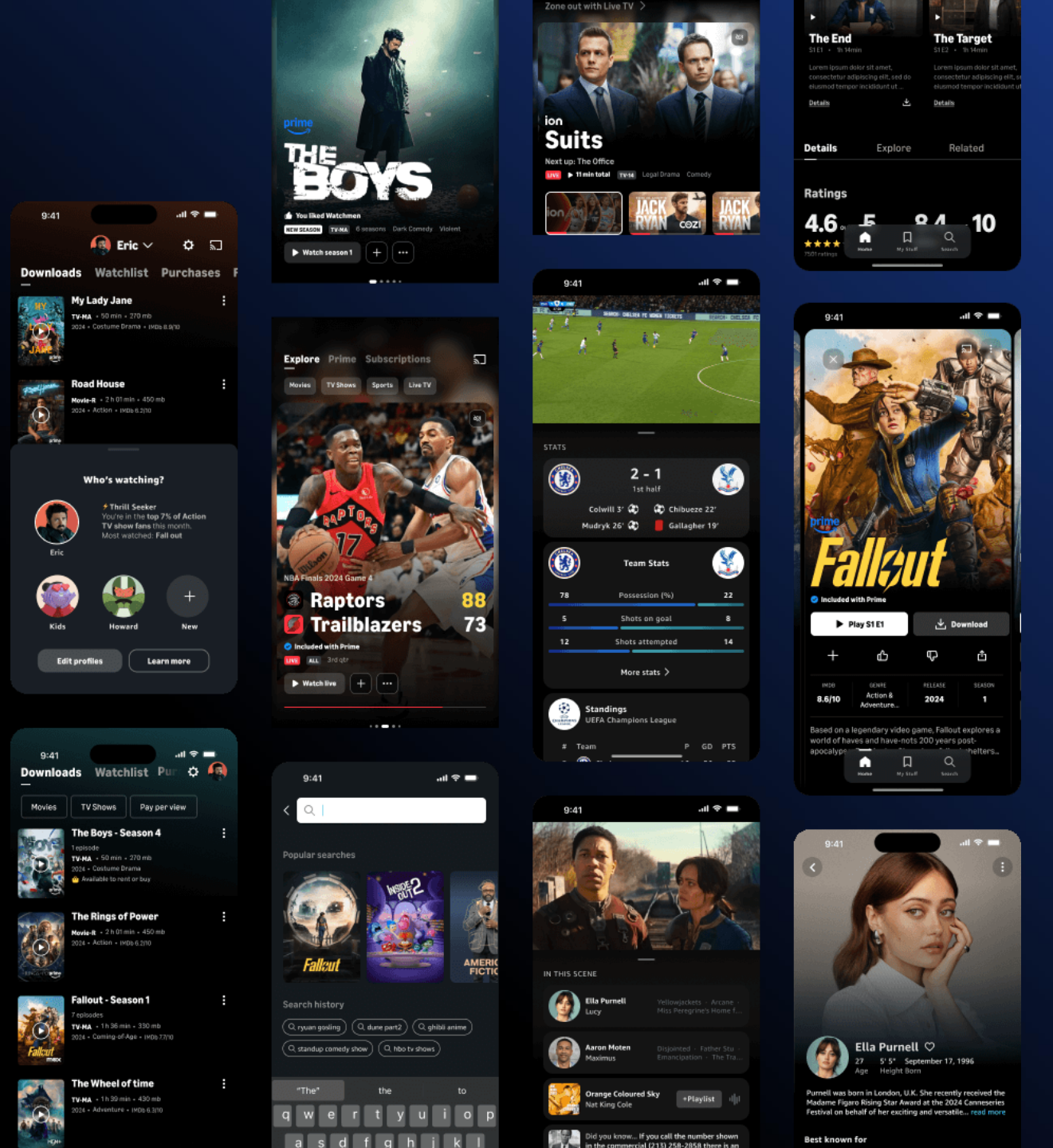
- Z-Depth framework for app layers.
- Modals vs. Sheets vs. Push.



VISUAL DESIGN

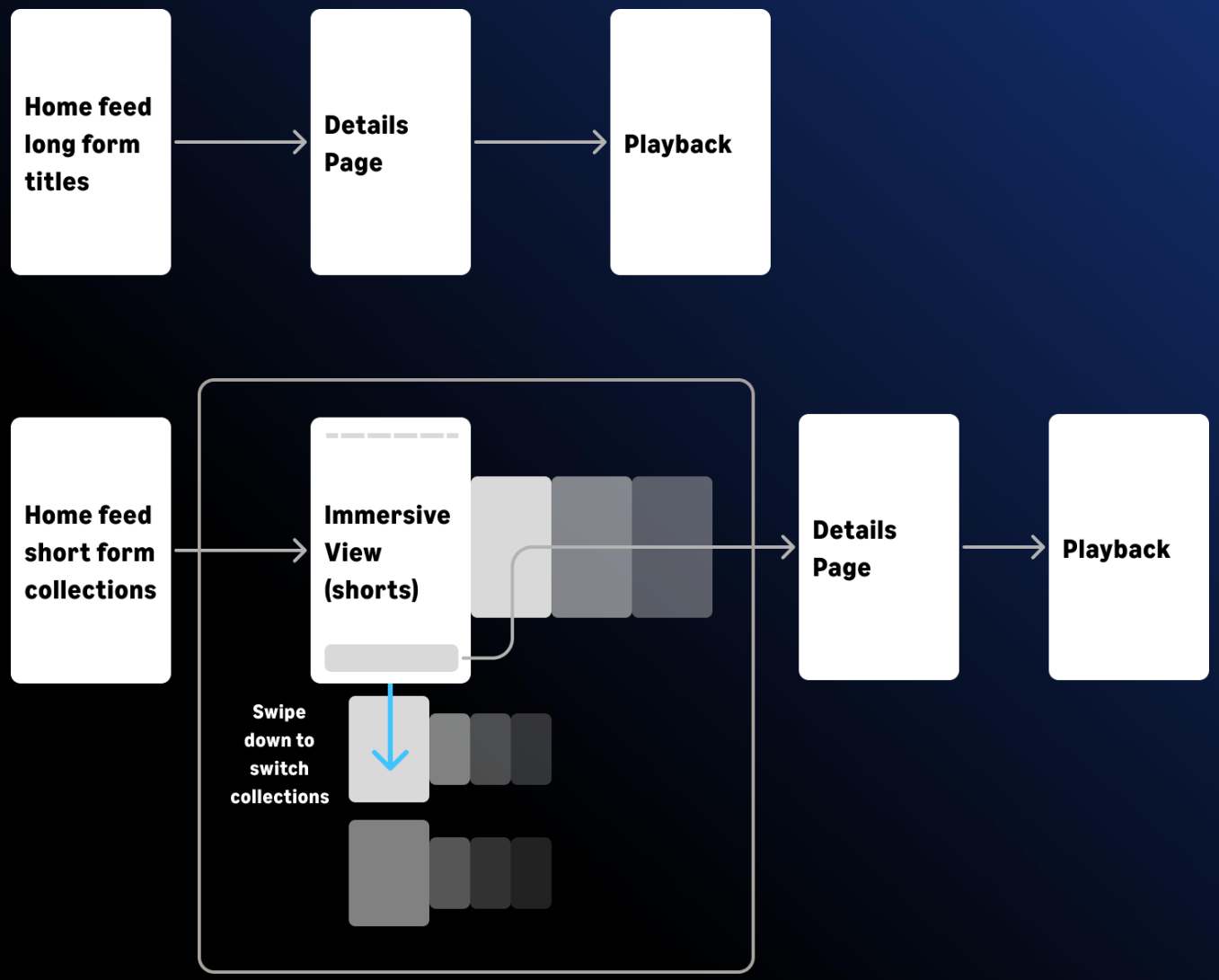
FOUNDATIONS

- Elevated the visual craft across the entire app with a more modern, cohesive, and premium design language optimized for mobile-first engagement
- The mobile component library extends the visual design language to all screens
- Updated grid framework: 6-column portrait layout, 20px margins, 8px gutters, responsive sizing (e.g., compact width/regular height)
- EAA is compliant with full A11y type and landscape support on every page



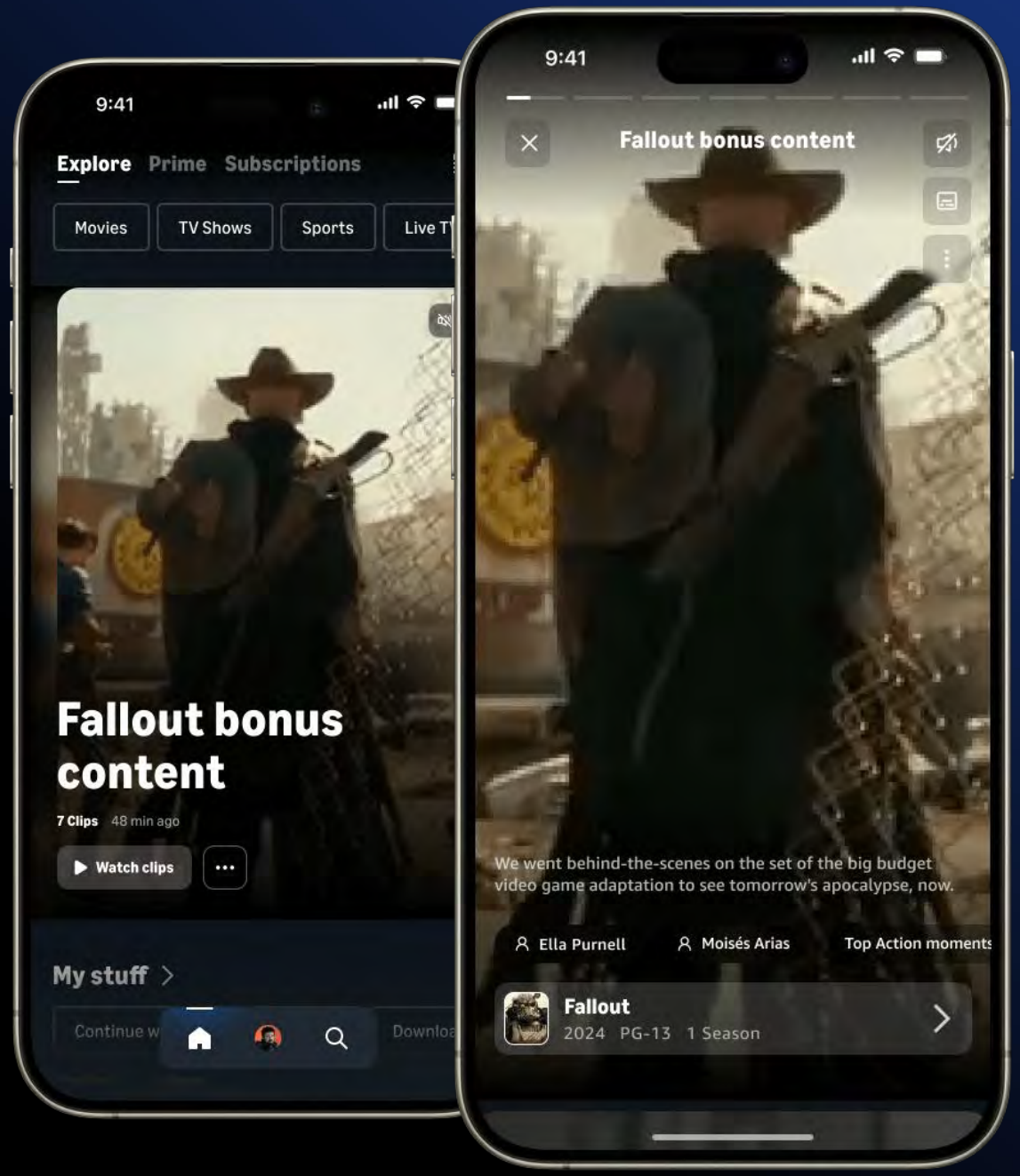
CLIPS

Clips follows the same core navigation pattern as long-form content but stands apart by transitioning into a full-screen, immersive experience when a short-form clip is selected.



CLIPS

Short-form content ranges from game highlights and TV recaps to late-night monologues. Clips also features extended scenes, bonus footage, behind-the-scenes content, sports highlights, and talent interviews.



FIGMA PROTOTYPE

This experience is live

Open the Prime Video app to see the shipped product

MOBILE REDESIGN OUTCOMES

The mobile redesign successfully shifted Prime Video from a living-room-first experience to a mobile-native entertainment platform optimized for discovery, personalization, and lightweight engagement. Key success metrics were improved personalization relevance through deeper integration of time-of-day signals, lightweight discovery experiences, and increased engagement with short-form and contextual content experiences, particularly during lean-in mobile usage moments.

Monthly Active Customers

18.8%

Driven by improved mobile-first discovery and navigation patterns

Reduction in Discovery Effort

-22.3%

Finding relevant content faster with less browsing friction

Hours Per Customer

12.4%

More engaging, personalized, and re-engagement experiences

Mobile title impressions

72.6%

Through improved information architecture and content surfacing

PRODUCT THREE

AUGMENTED CONTENT

X-Ray Redesign and Updated Player Framework

Role: Co-Lead

Project Reign explored how augmented content could enhance the Prime Video viewing experience through a new multi-zone player framework. The experience introduced dedicated zones for core playback controls, content discovery, and interactive experiences like live stats, actor/player details, bet tracking, and contextual insights during streams such as Thursday Night Football and the NBA Playoffs.

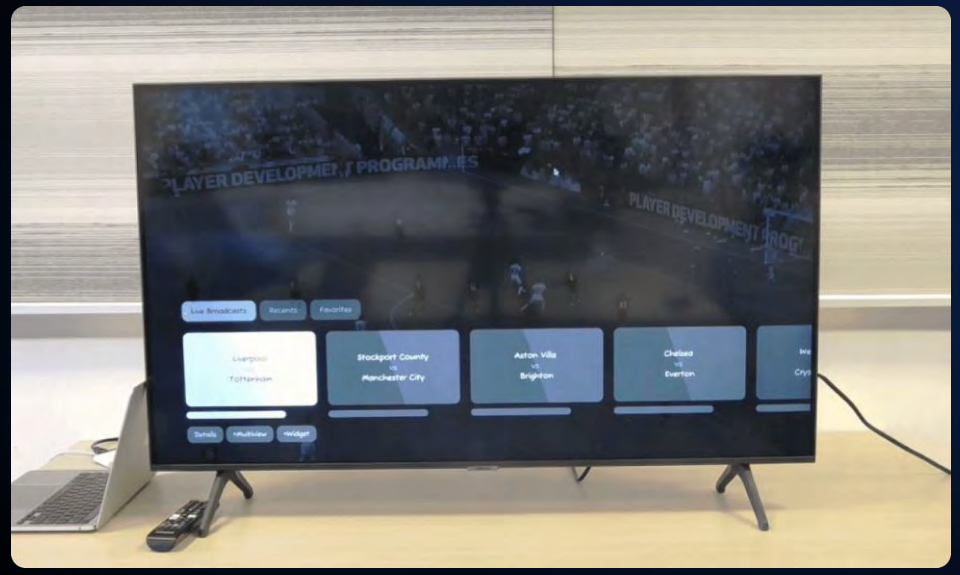
PROBLEM STATEMENT

We need a scalable player framework that supports richer contextual experiences without disrupting core playback interactions like pause, scrubbing, captions, and remote navigation. We must balance deeper engagement and discovery while preserving the simplicity, speed, and reliability customers expect from the augmented viewing experience.

RESEARCH

I partnered with the research team to observe in-person usability testing with nine participants using a live prototype of the new Living Room player experience.

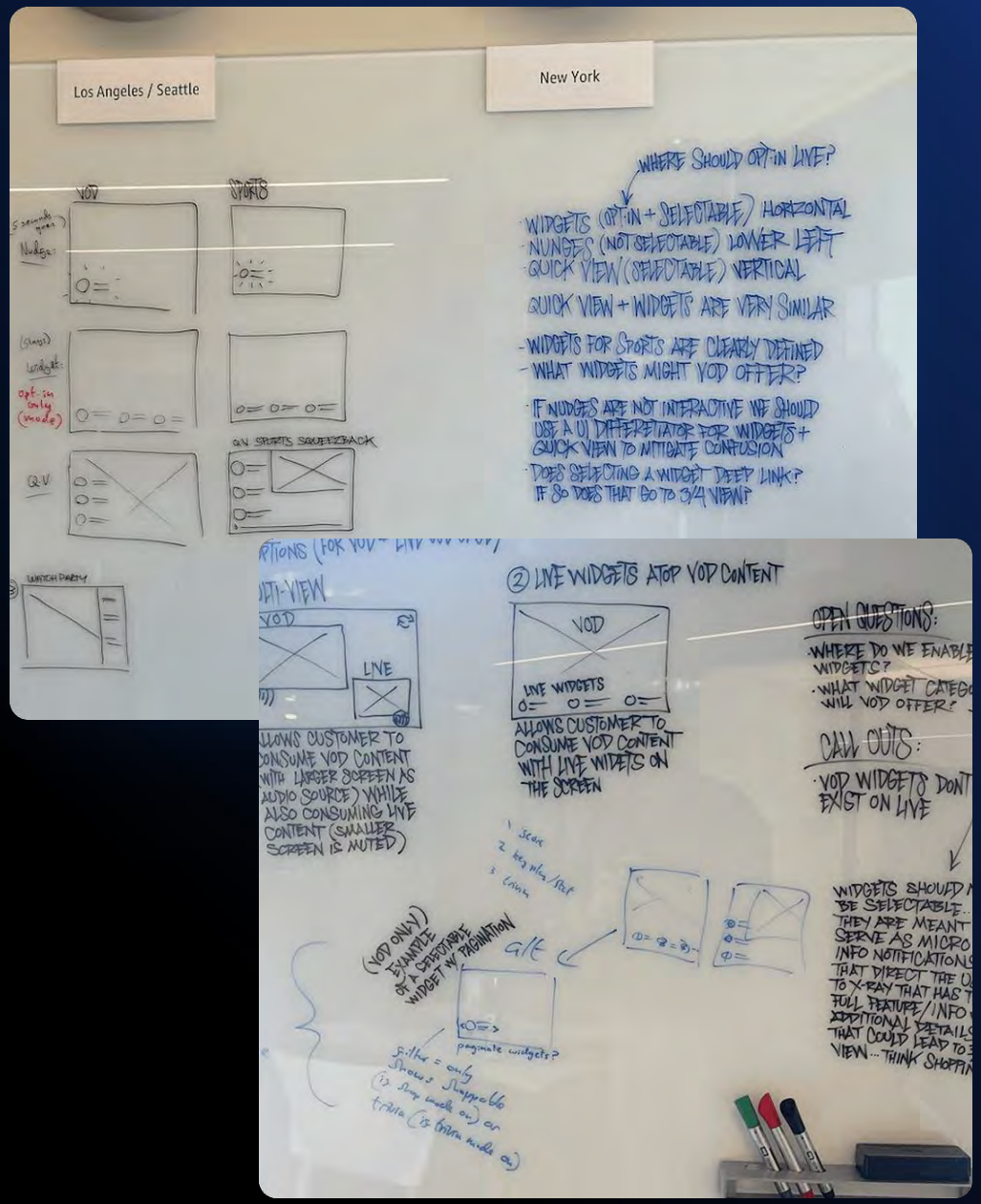
Research focused on validating the simplicity of the interface, the intuitiveness of navigating Explore and Discovery zones, and the effectiveness of ‘Key Moments’ as a new way to surface contextual content and insights.



WORKSHOPS

My co-lead and I divided the team to facilitate collaborative workshops to refine the UI, leveraging stakeholder feedback and customer insights.

With the information gathered, we aligned on prototypes, validated design direction, and identified key usability improvements focused on hierarchy, navigation clarity, and content discoverability.



PLAYER FRAMEWORK

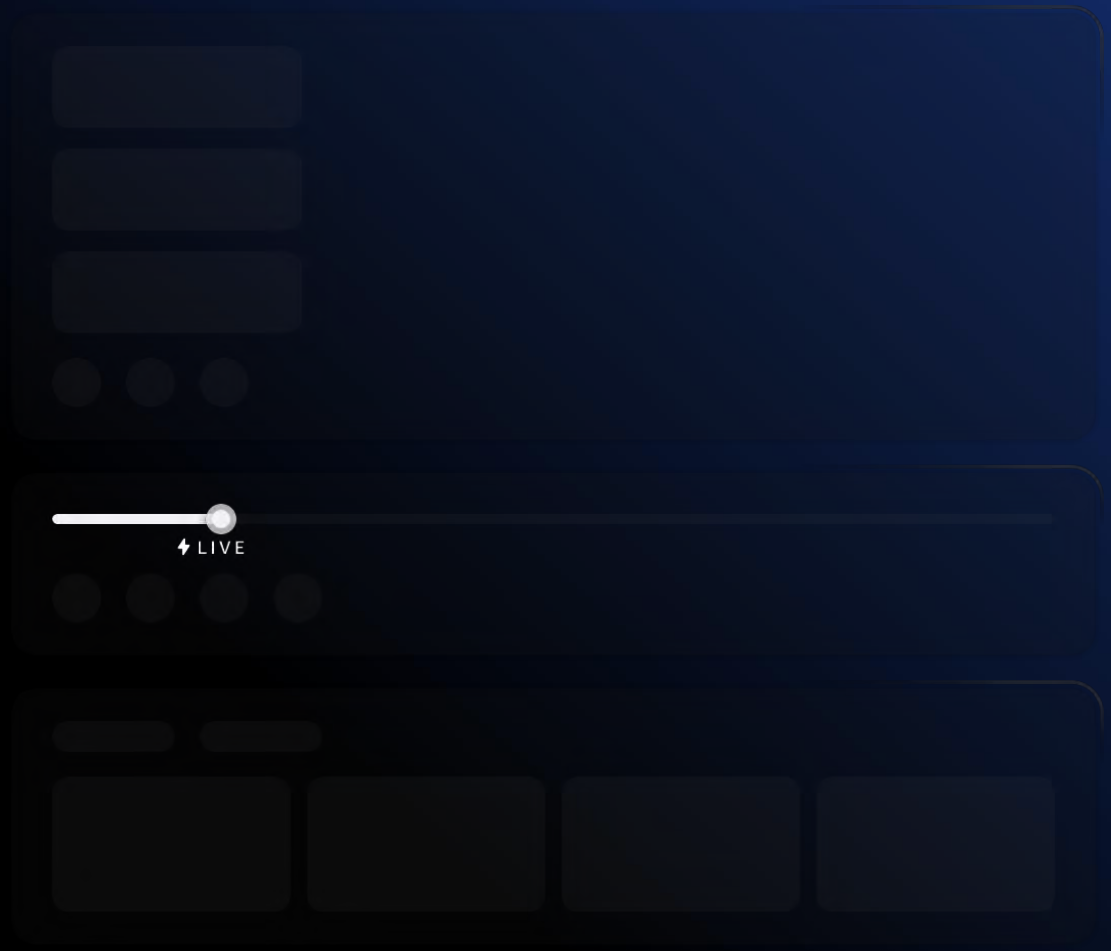
The existing X-Ray UI was not designed to support the growing complexity of modern augmented experiences across live sports, interactive content, and mobile platforms.

We redesigned the framework to support scalable augmented content across VOD, live sports, and mobile platforms with a more modern, adaptable player experience.

Up
Explore

Middle
Controls

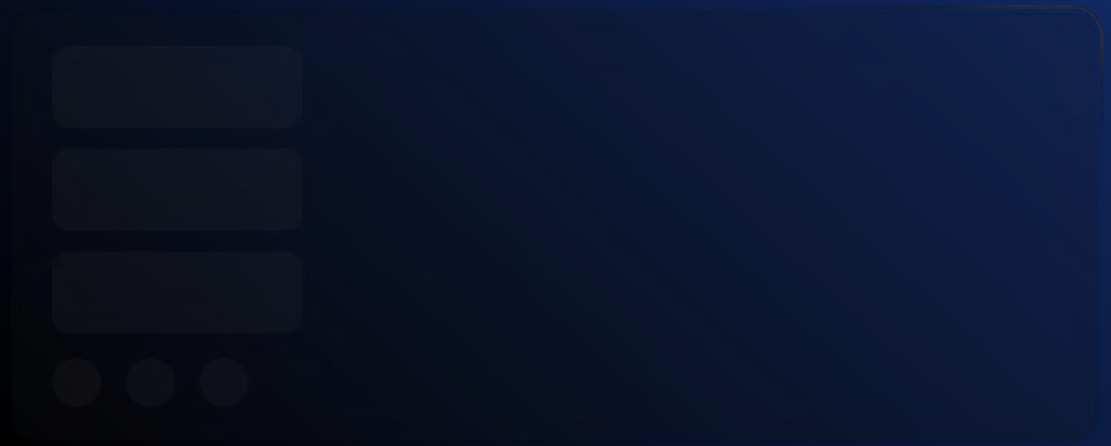
Down
Discover



PLAYER FRAMEWORK OVERVIEW

UP - EXLORE

Content that contextually augments what is available within the scene.



Up
Explore

Middle
Controls

Down
Discover

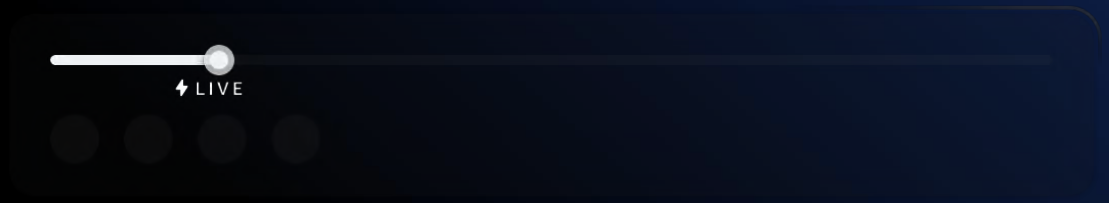
PLAYER FRAMEWORK OVERVIEW

MIDDLE - CONTROLS

Instant access to contextual controls and accessibility options.

Up
Explore

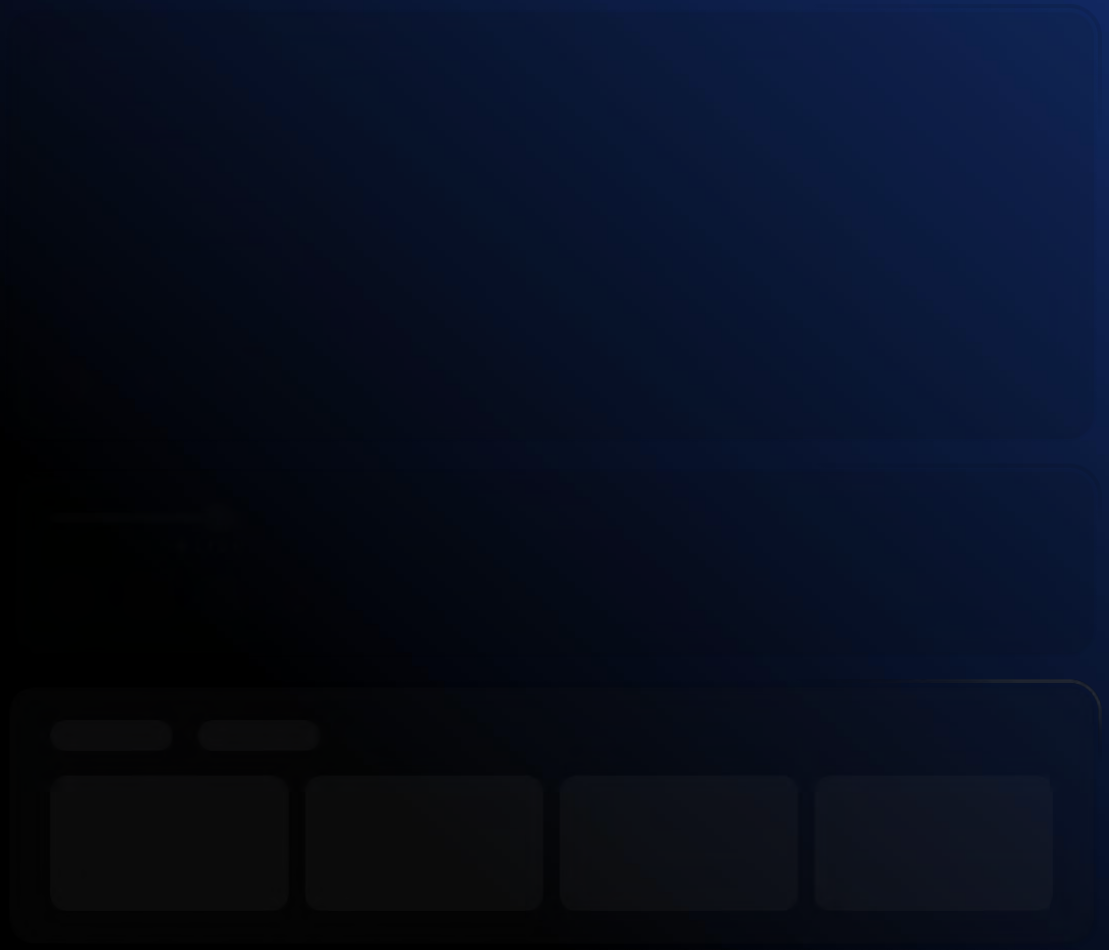
Middle
Controls



Down
Discover

PLAYER FRAMEWORK OVERVIEW

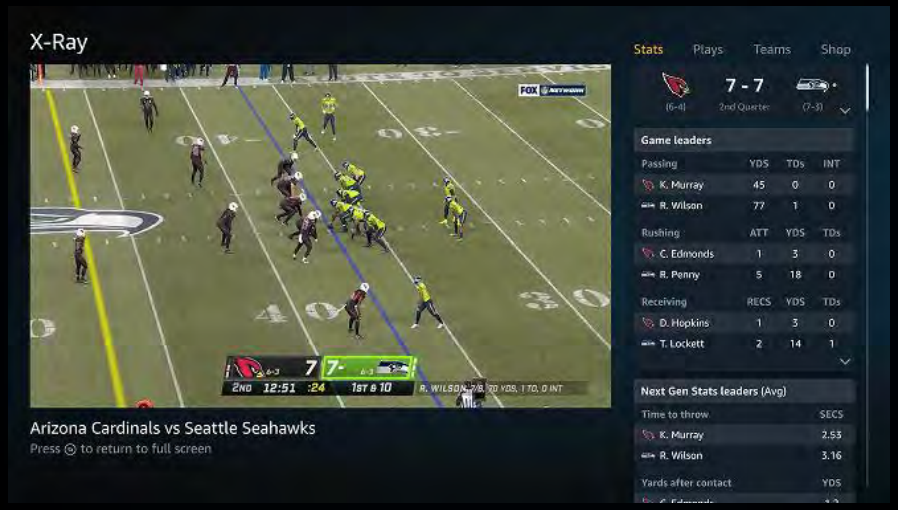
DOWN - DISCOVER

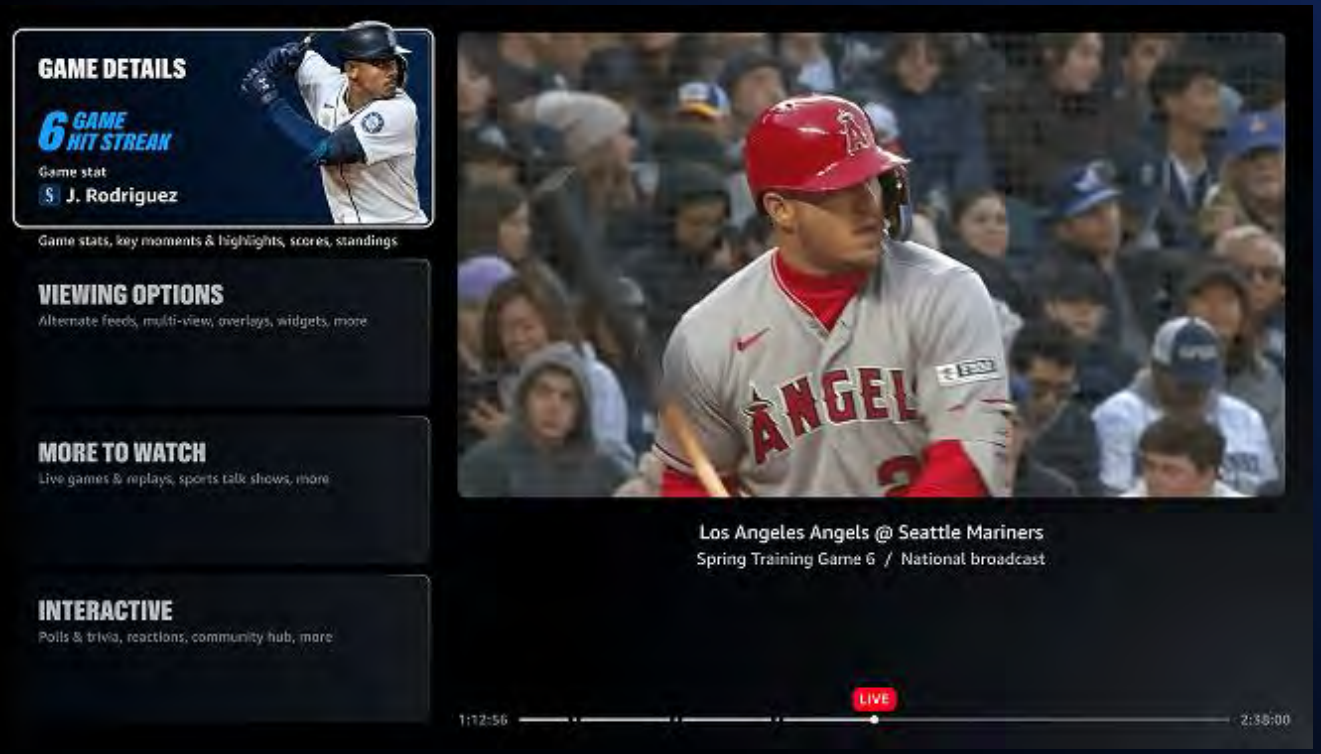


Access to other videos and streams related to the current game or title in playback.

EARLY EXPLORATIONS LIVE

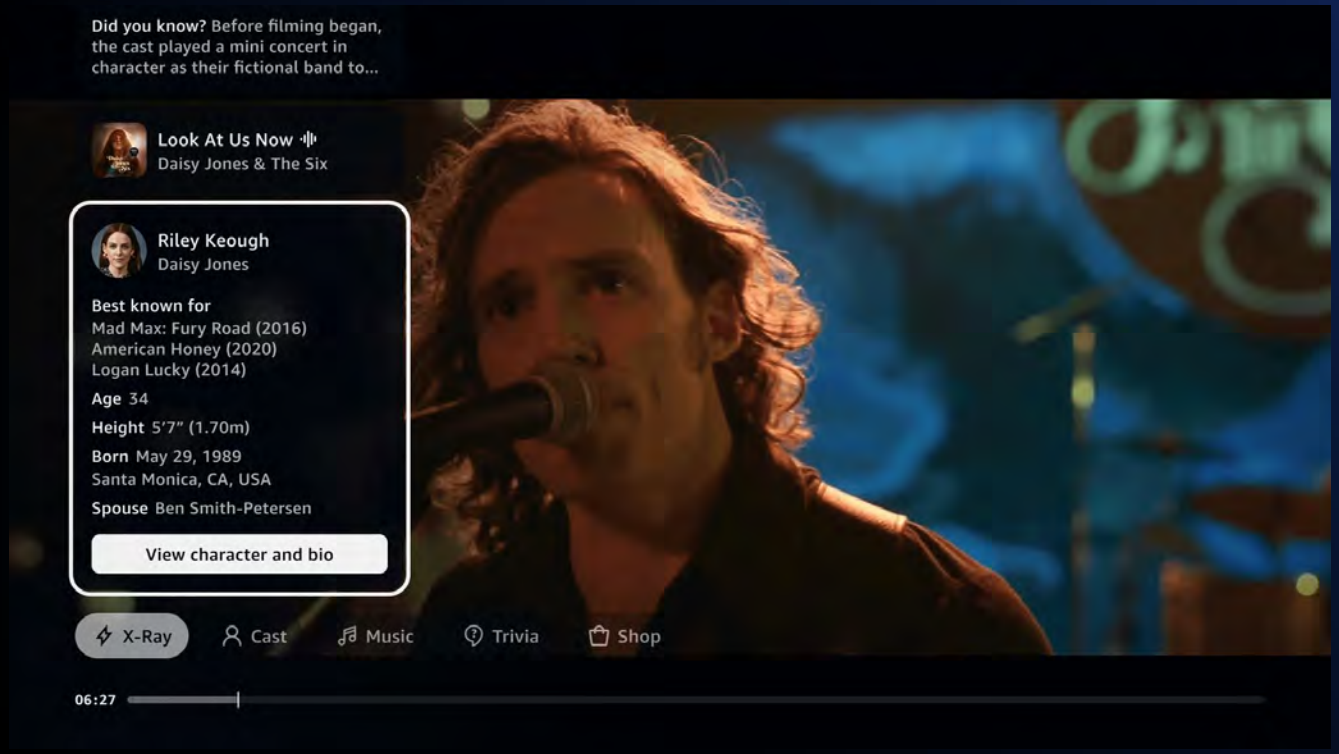
X-RAY LEGACY VS. UPDATED AUGMENTED CONTENT





EARLY EXPLORATIONS VOD

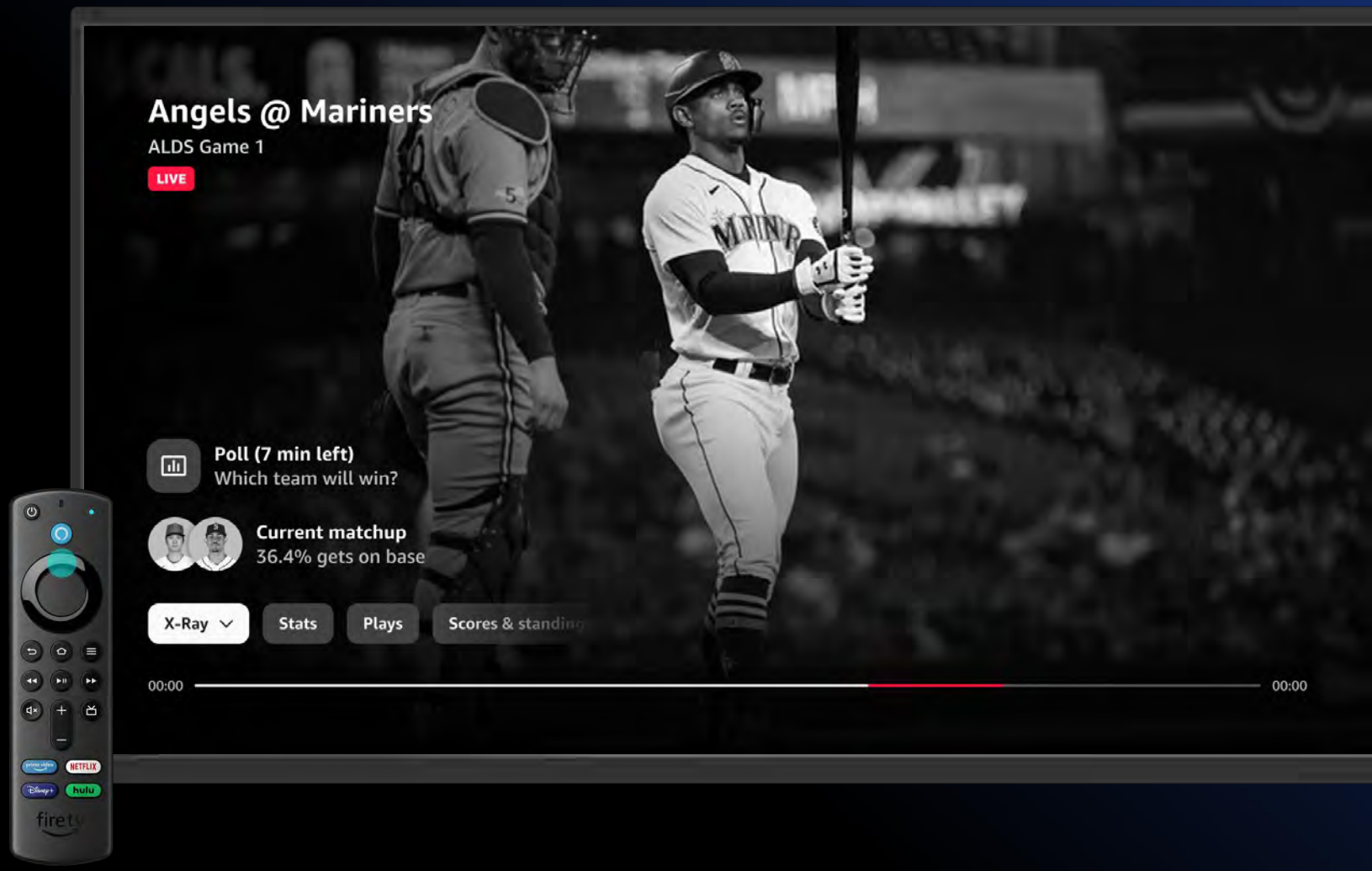
X-RAY LEGACY VS. UPDATED AUGMENTED CONTENT



EARLY EXPLORATIONS

PLAYER FRAMEWORK

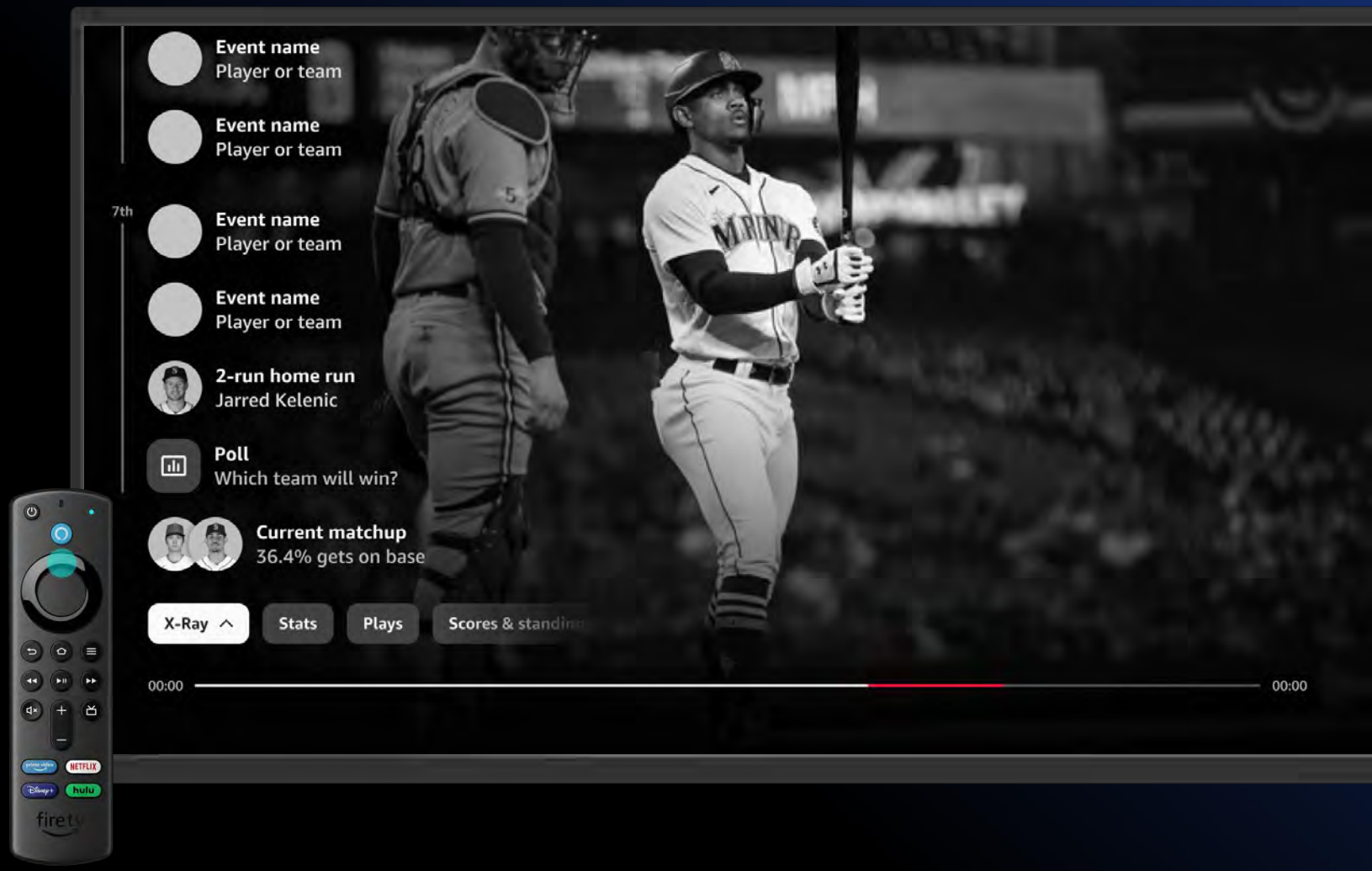
Up surfaces the tab bar, which defaults to X-Ray.



EARLY EXPLORATIONS

PLAYER FRAMEWORK

Selecting up again highlights the augmented content timeline.

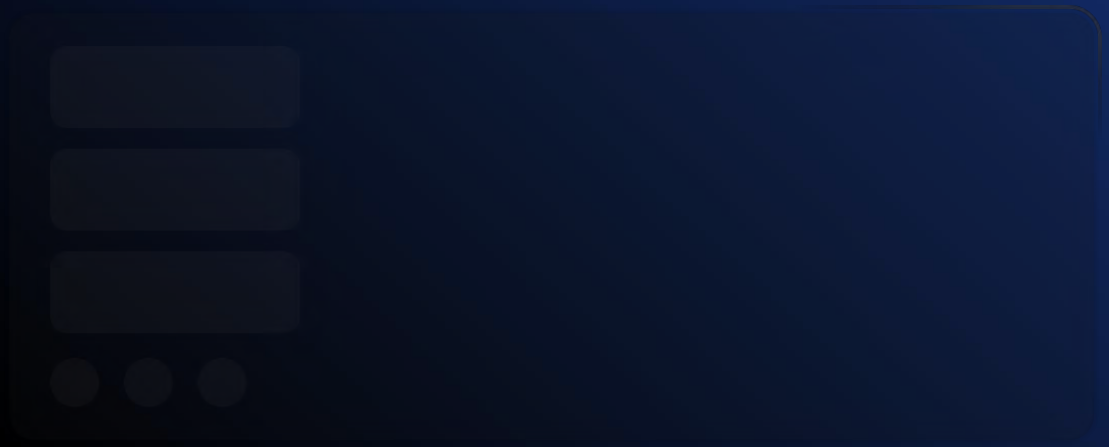


PLAYER FRAMEWORK

UP - EXPLORE

The following screens showcase the up (explore) interaction that a customer experiences when entering the augmented content player framework.

Up
Explore



Middle
Controls

Down
Discover

PLAYER FRAMEWORK

AUGMENTED UP

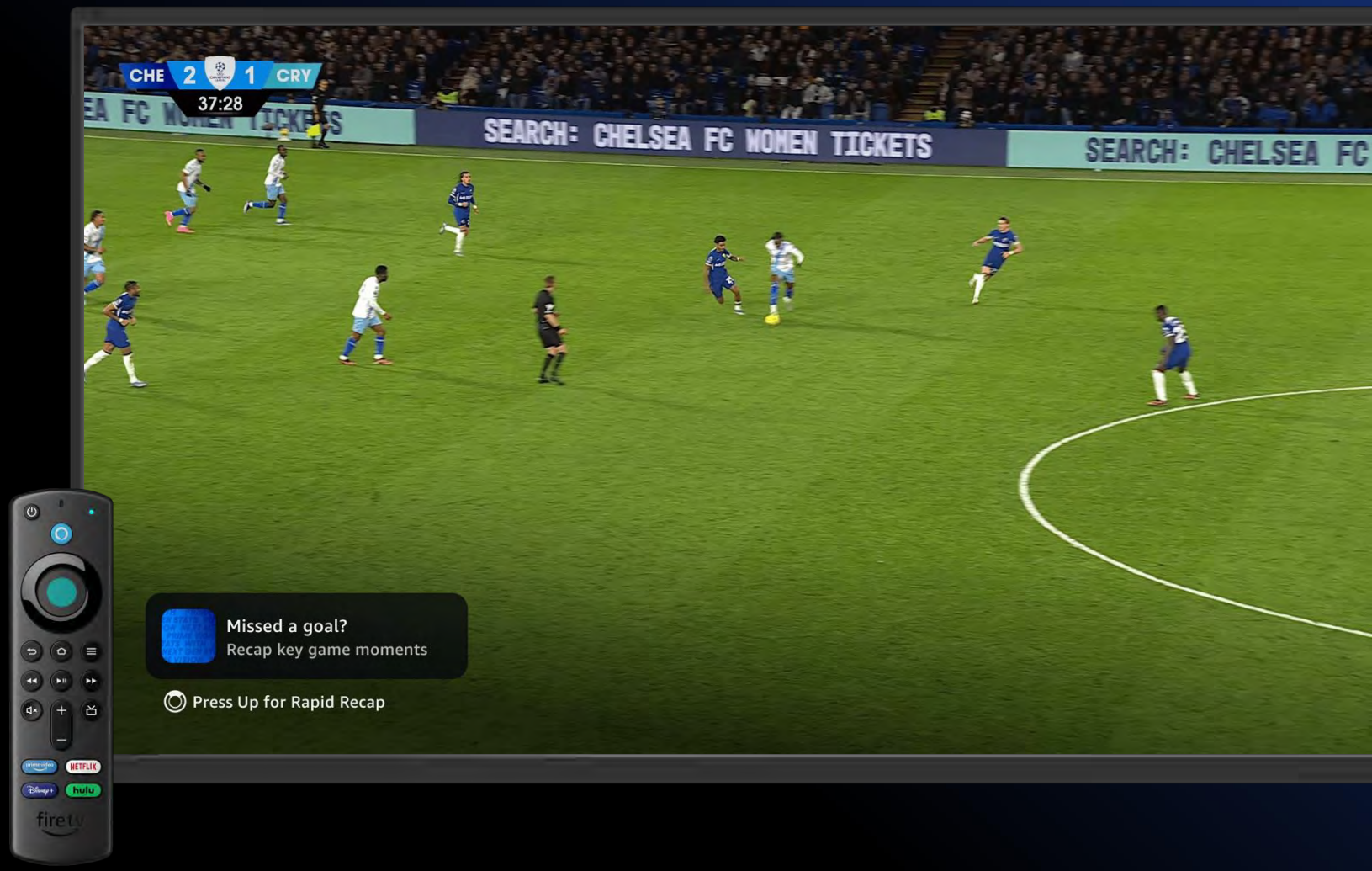
The customer is watching the Chelsea vs. Crystal Palace football match.

PLAYER FRAMEWORK

AUGMENTED UP

A contextual nudge is surfaced to highlight the discoverability of augmented content.

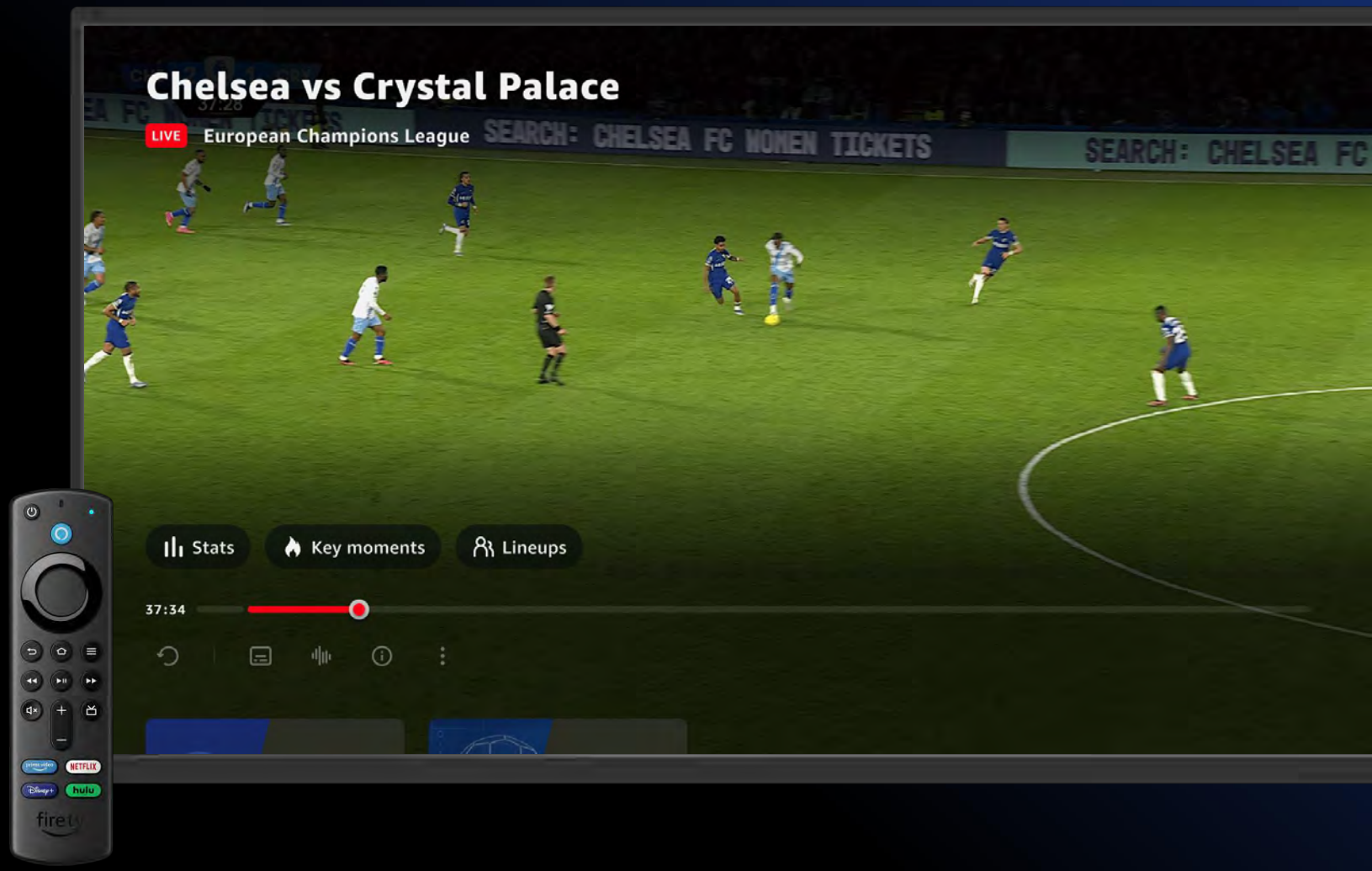
Selecting center on the D-pad triggers the framework.



PLAYER FRAMEWORK

AUGMENTED UP

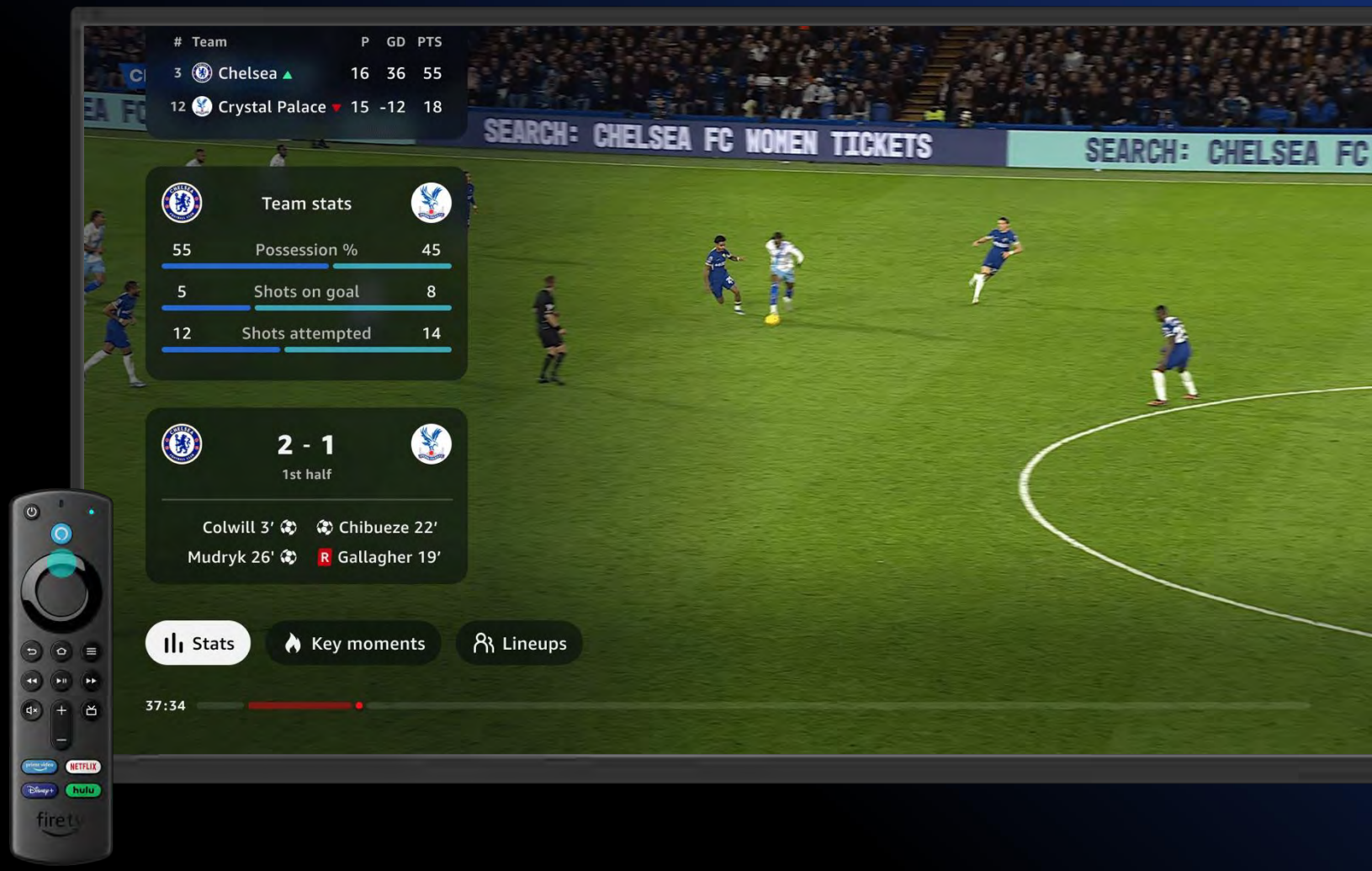
Playback continues with the framework overlay presented. If no action is taken, full-screen playback resumes after 8 seconds.



PLAYER FRAMEWORK

AUGMENTED UP

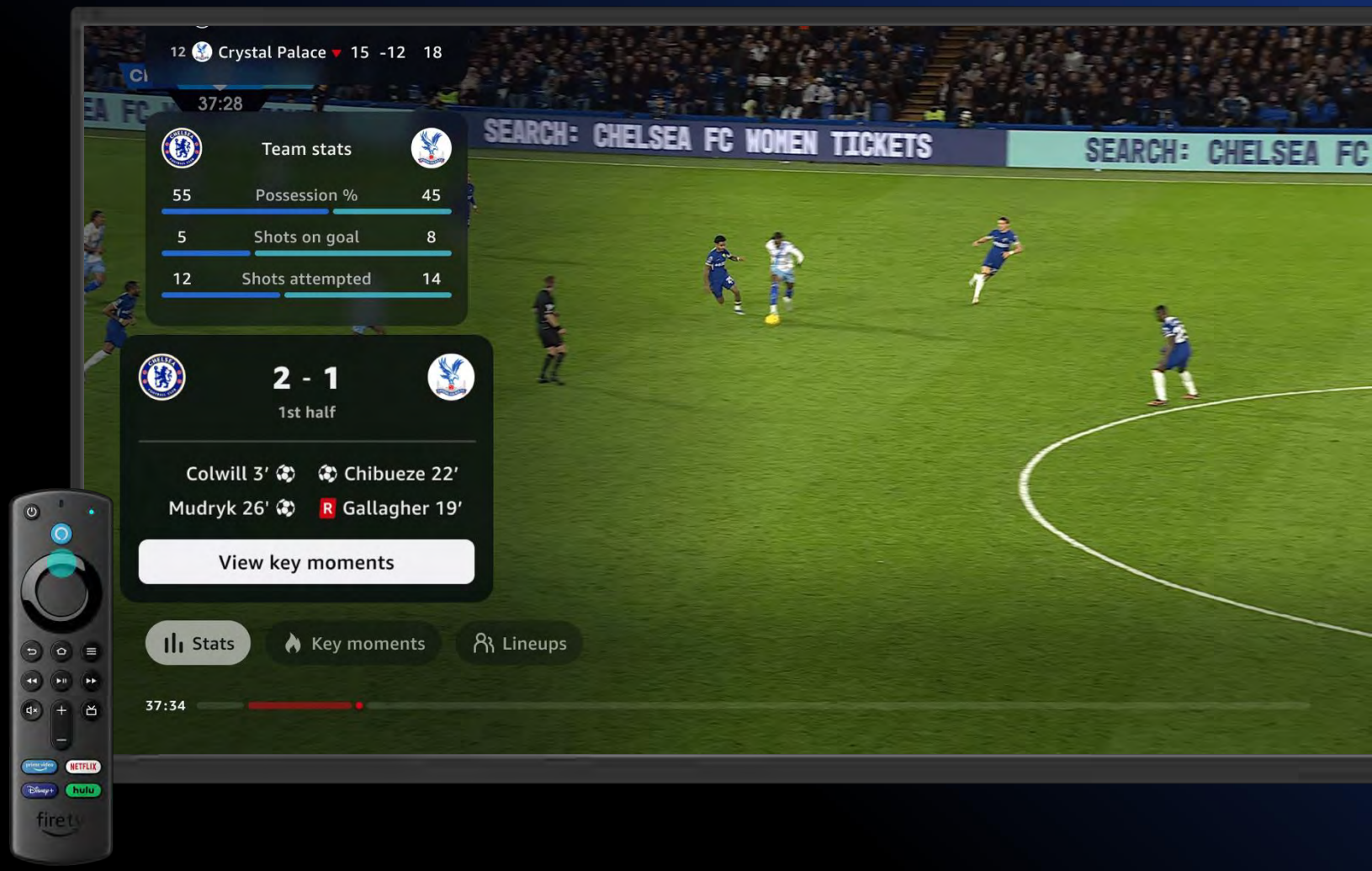
Using the D-pad, the customer selects up which lowers the playback controls and surfaces the augmented content tab bar, defaulting on Stats.



PLAYER FRAMEWORK

AUGMENTED UP

Selecting up again surfaces the focus state for the first card.

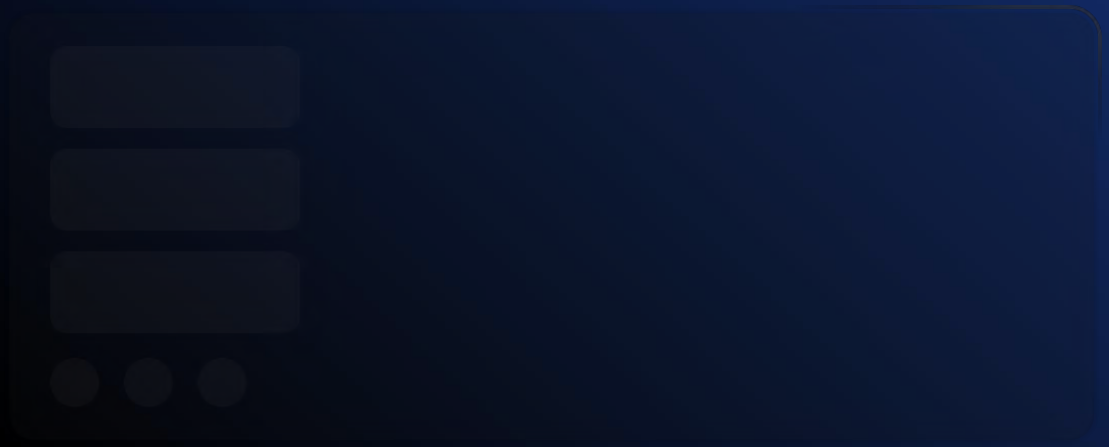


PLAYER FRAMEWORK

UP - EXPLORE

The following screens showcase the up (explore) interaction that a customer experiences when entering the augmented content player framework and navigates to the right to switch between modes.

Up
Explore



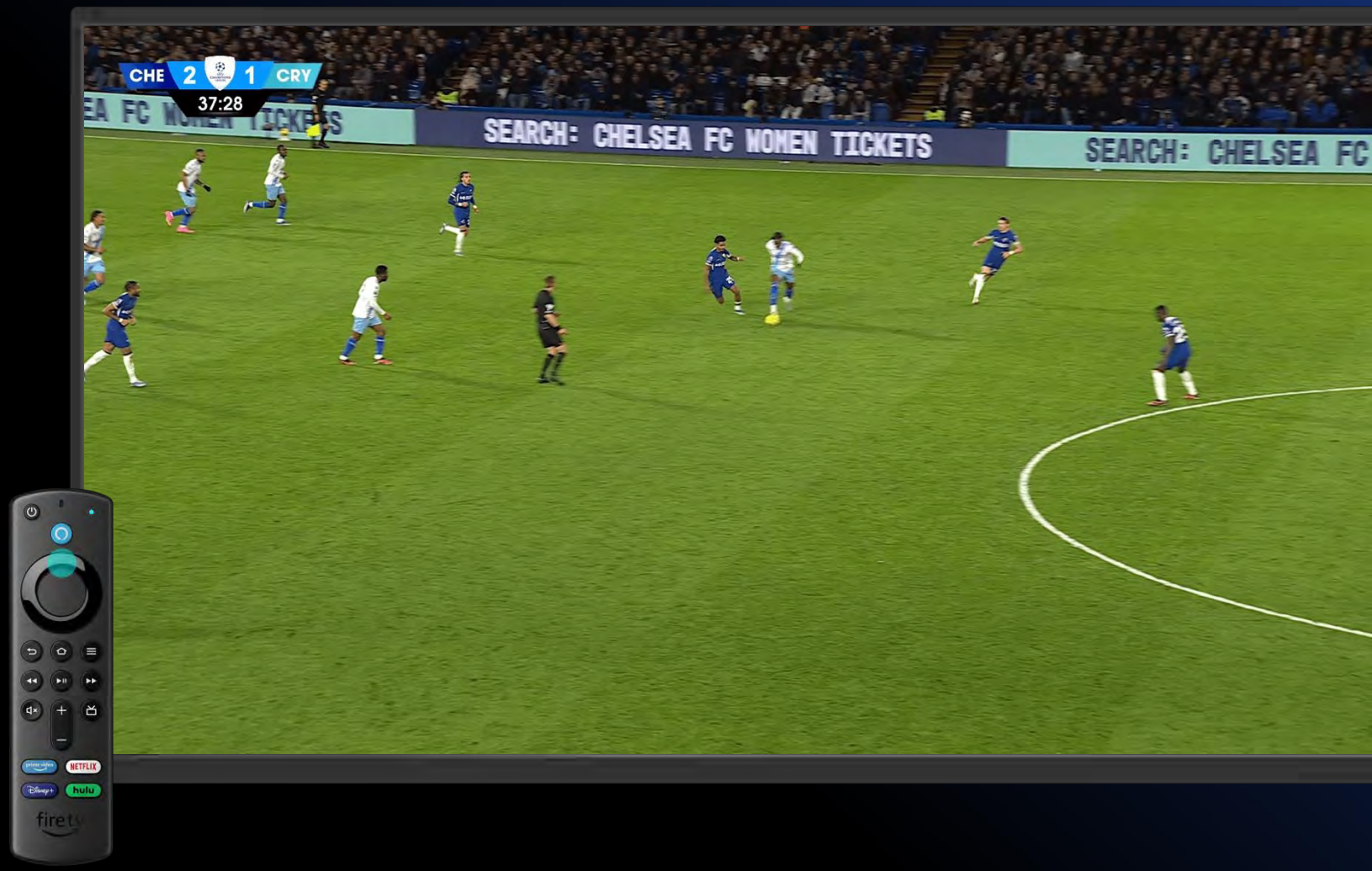
Middle
Controls

Down
Discover

PLAYER FRAMEWORK

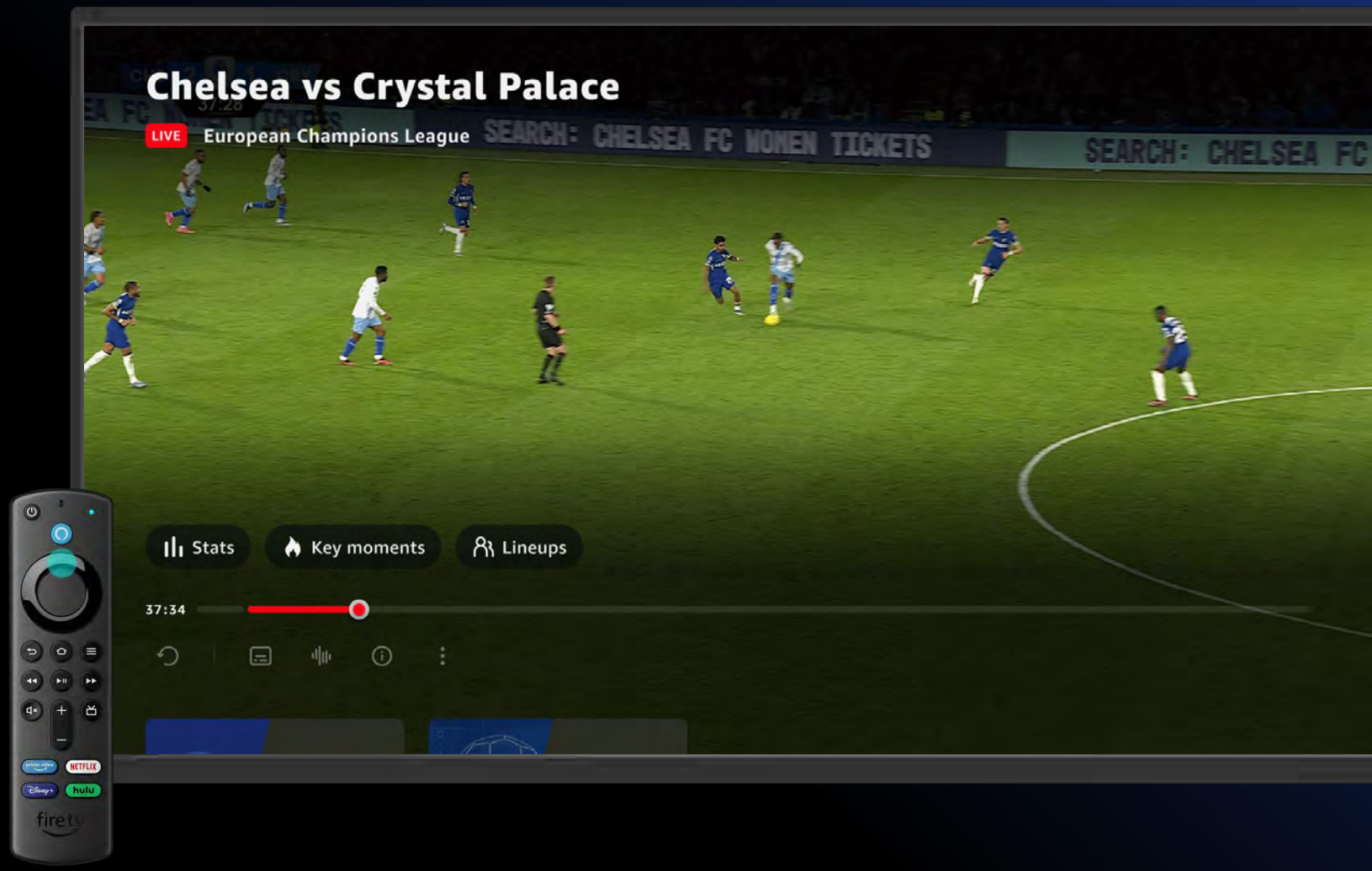
MODE SELECTOR

The customer is watching the Chelsea vs. Crystal Palace football match. The customer proactively selects [any input on] the D-pad, which surfaces player controls and augmented content.



PLAYER FRAMEWORK

MODE SELECTOR

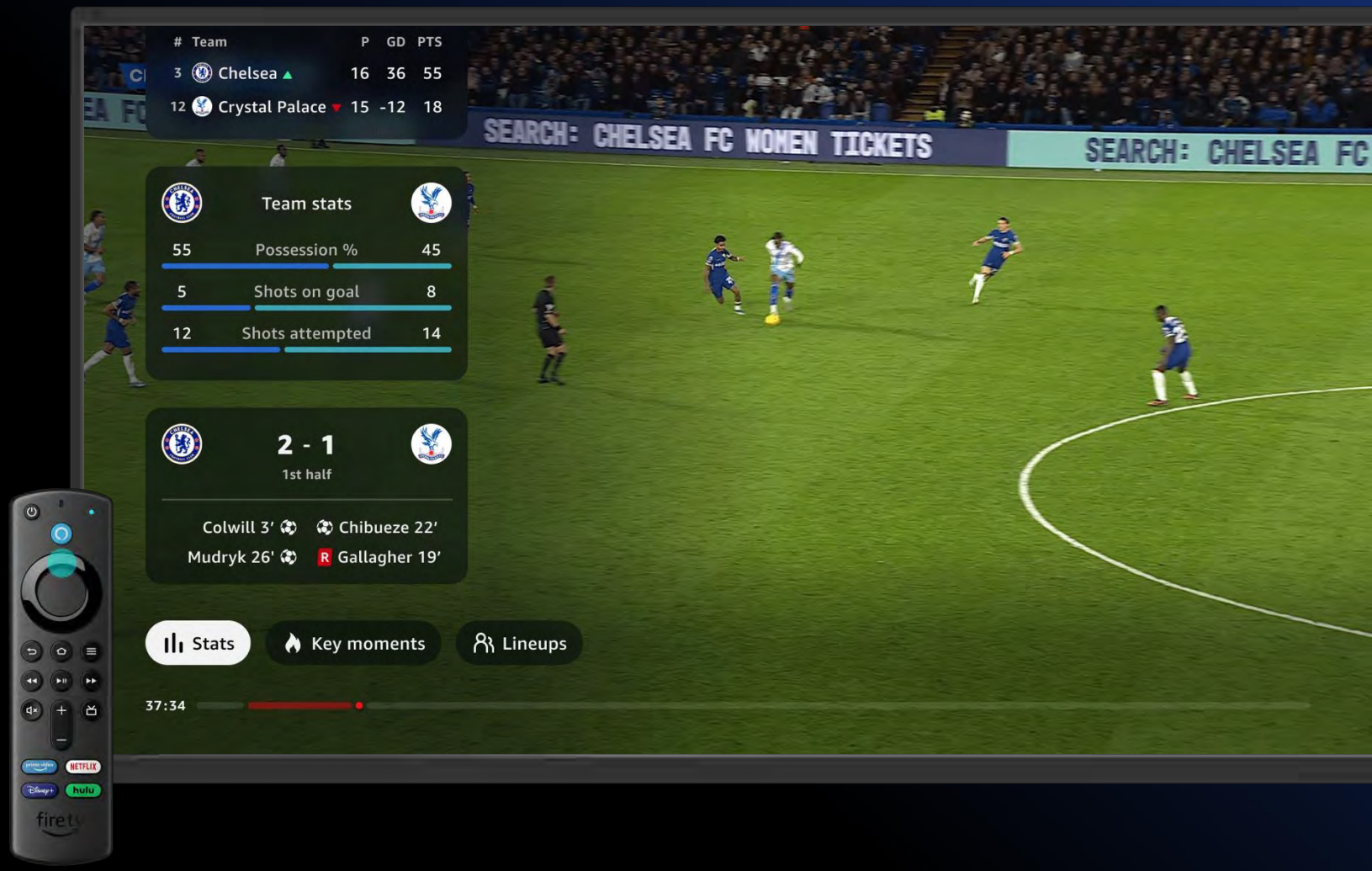


Once selected, playback continues with the framework overlay presented. Selecting up will lower playback controls and surface augmented content.

PLAYER FRAMEWORK

MODE SELECTOR

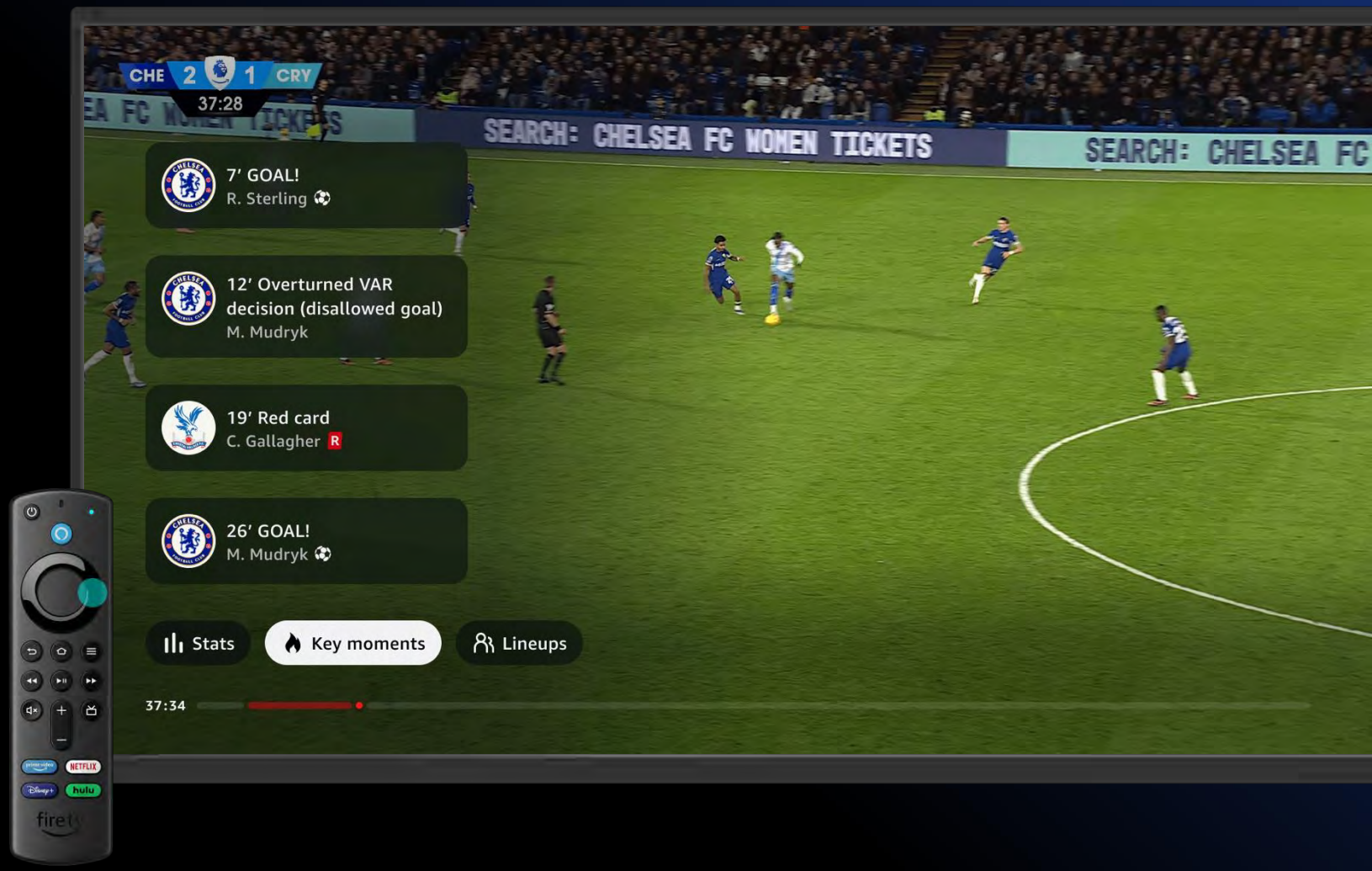
Modes are highlighted with the Stats tab (default state) in focus.



PLAYER FRAMEWORK

MODE SELECTOR

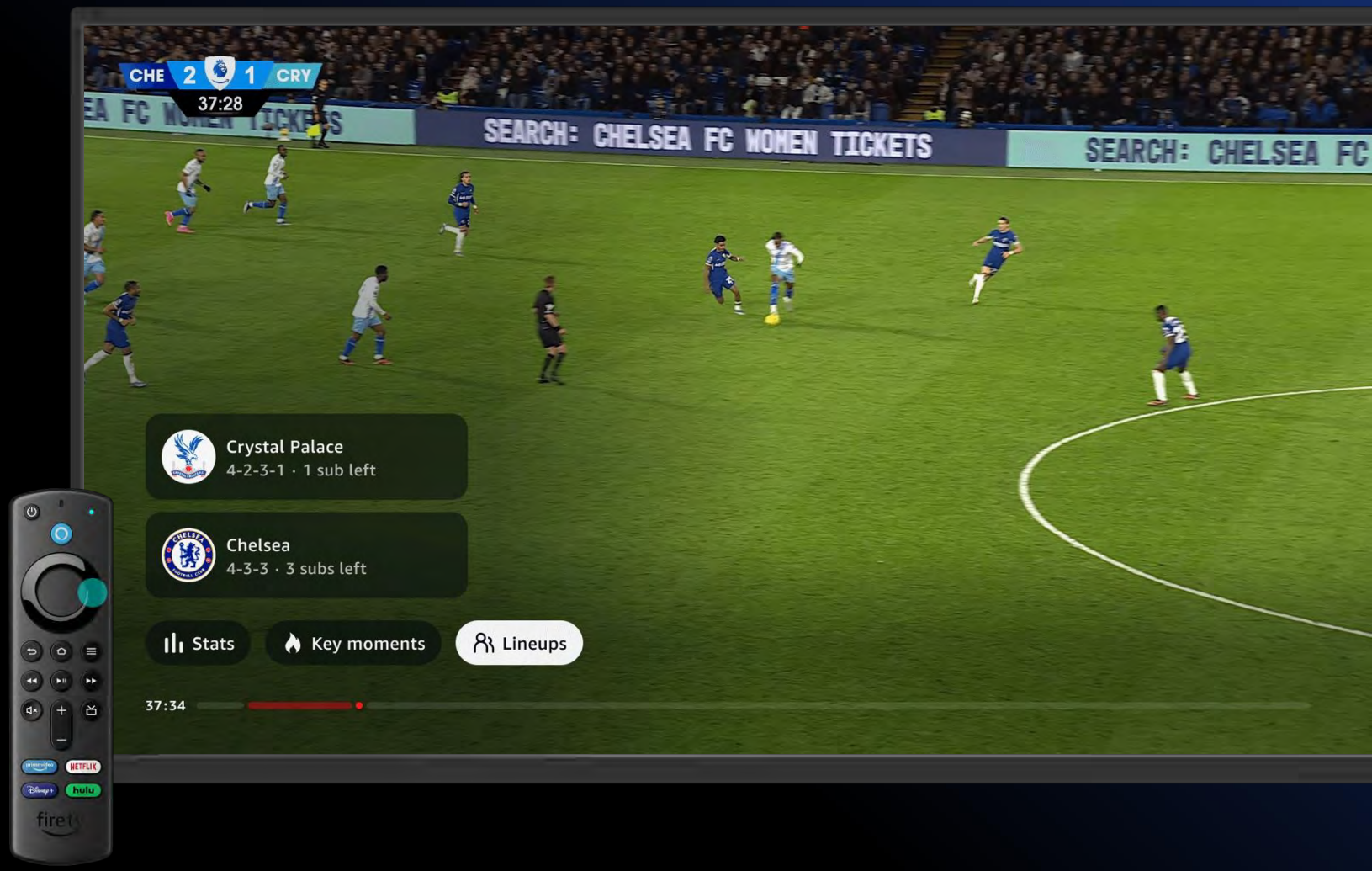
The customer selects right, which brings Key Moments into focus. The above interactive content is updated.



PLAYER FRAMEWORK

MODE SELECTOR

The customer selects right again, which brings Lineups into focus. Selecting up from any mode will focus state the respective augmented content.



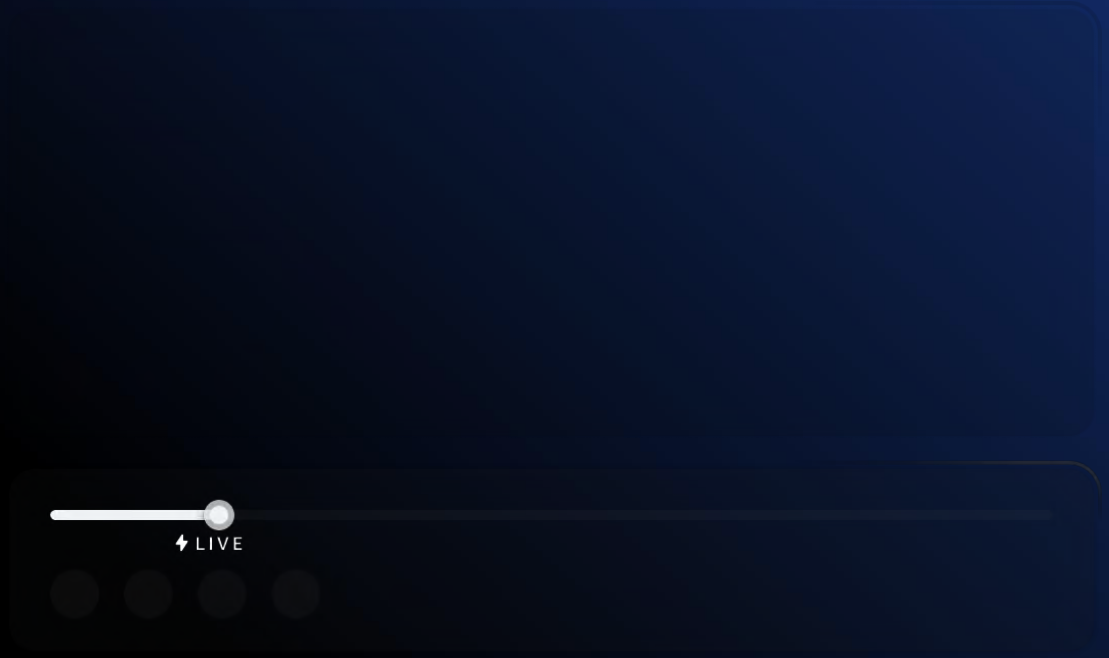
PLAYER FRAMEWORK

MIDDLE - CONTROLS

The following screens showcase the middle interaction that a customer experiences when entering the augmented content player framework.

Up
Explore

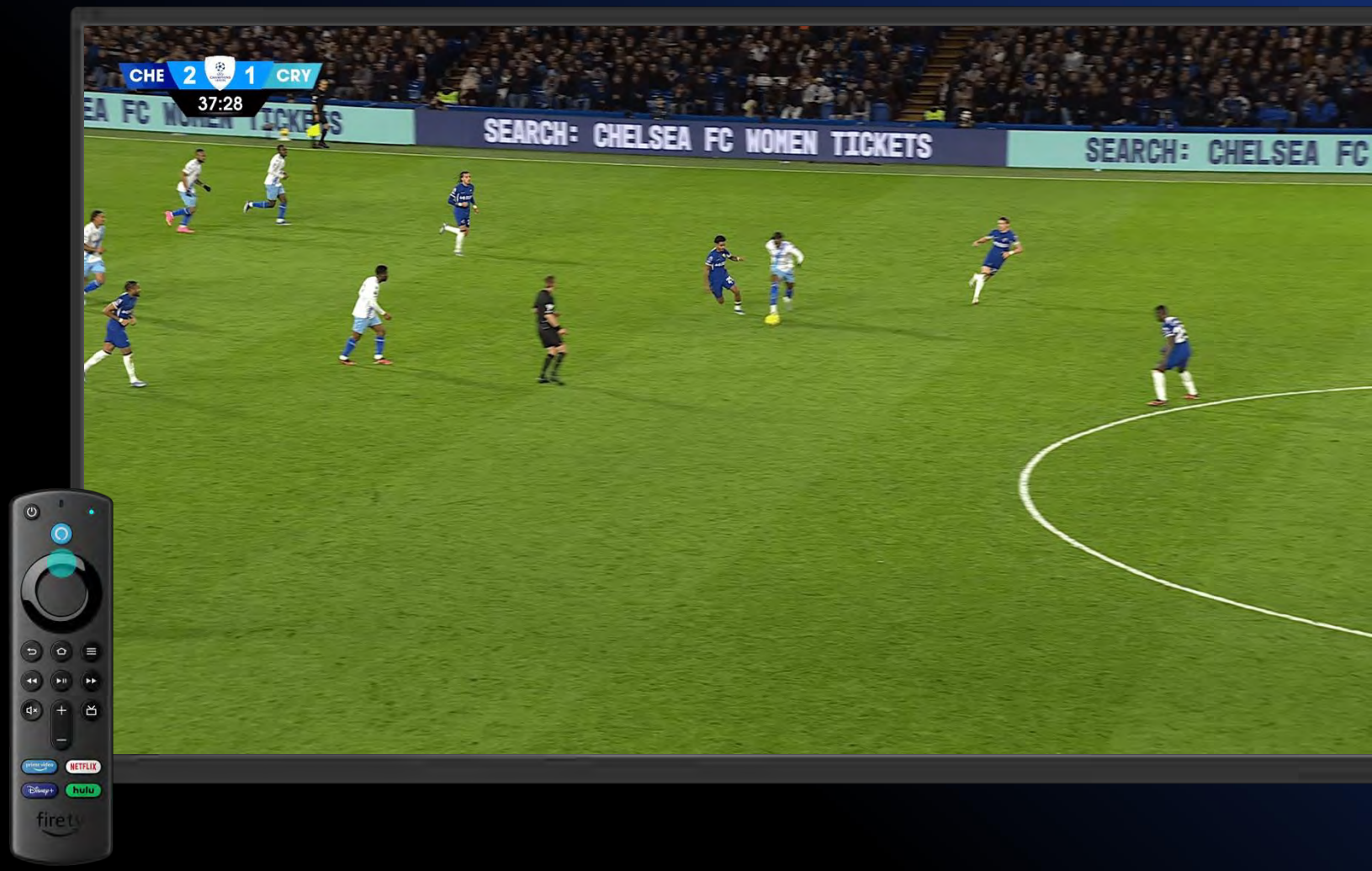
Middle
Controls



Down
Discover

PLAYER FRAMEWORK

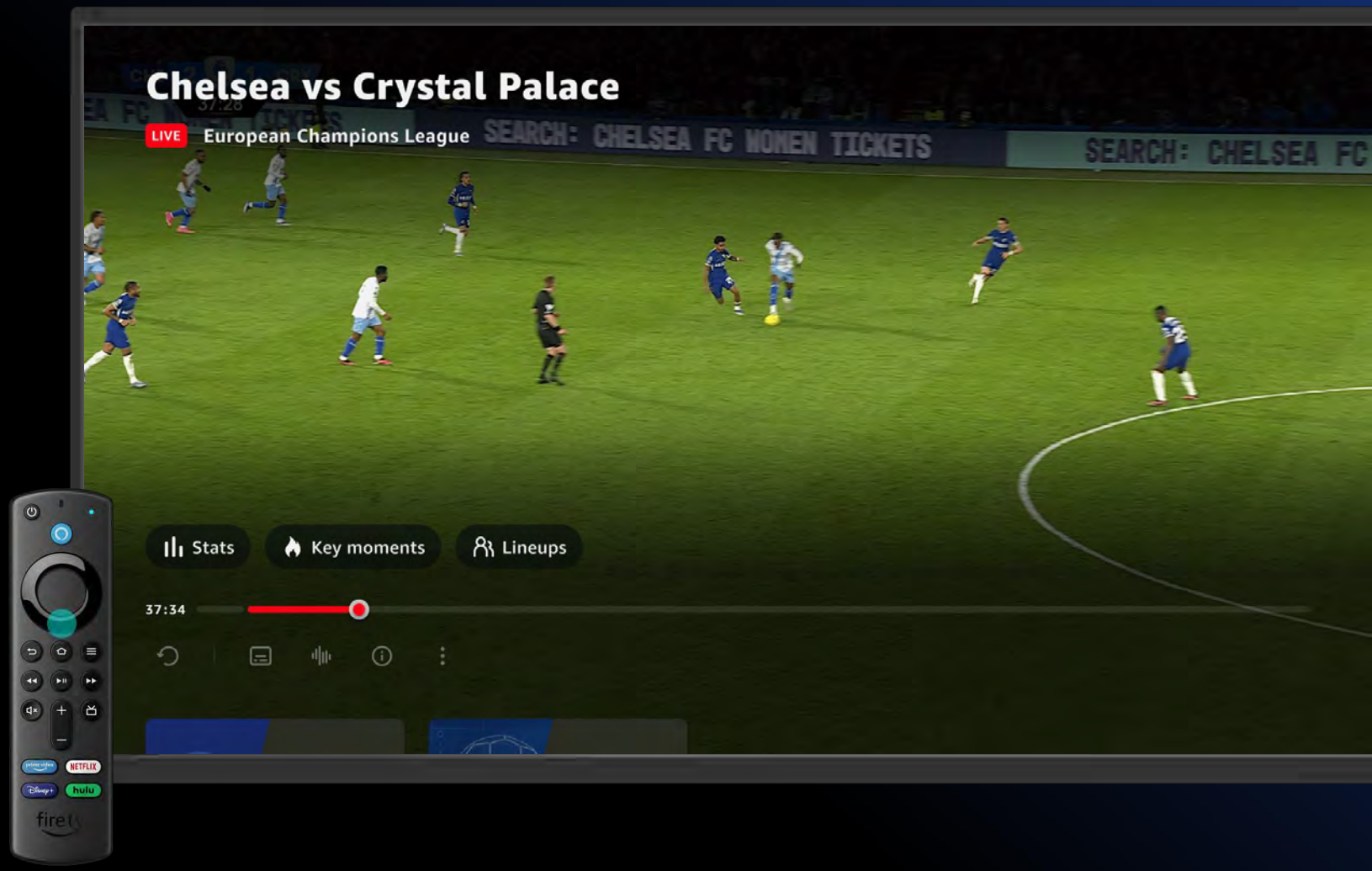
MIDDLE CONTROLS



The customer is watching the Chelsea vs. Crystal Palace football match. The customer proactively selects [any input on] the D-pad, which surfaces player controls and augmented content.

PLAYER FRAMEWORK

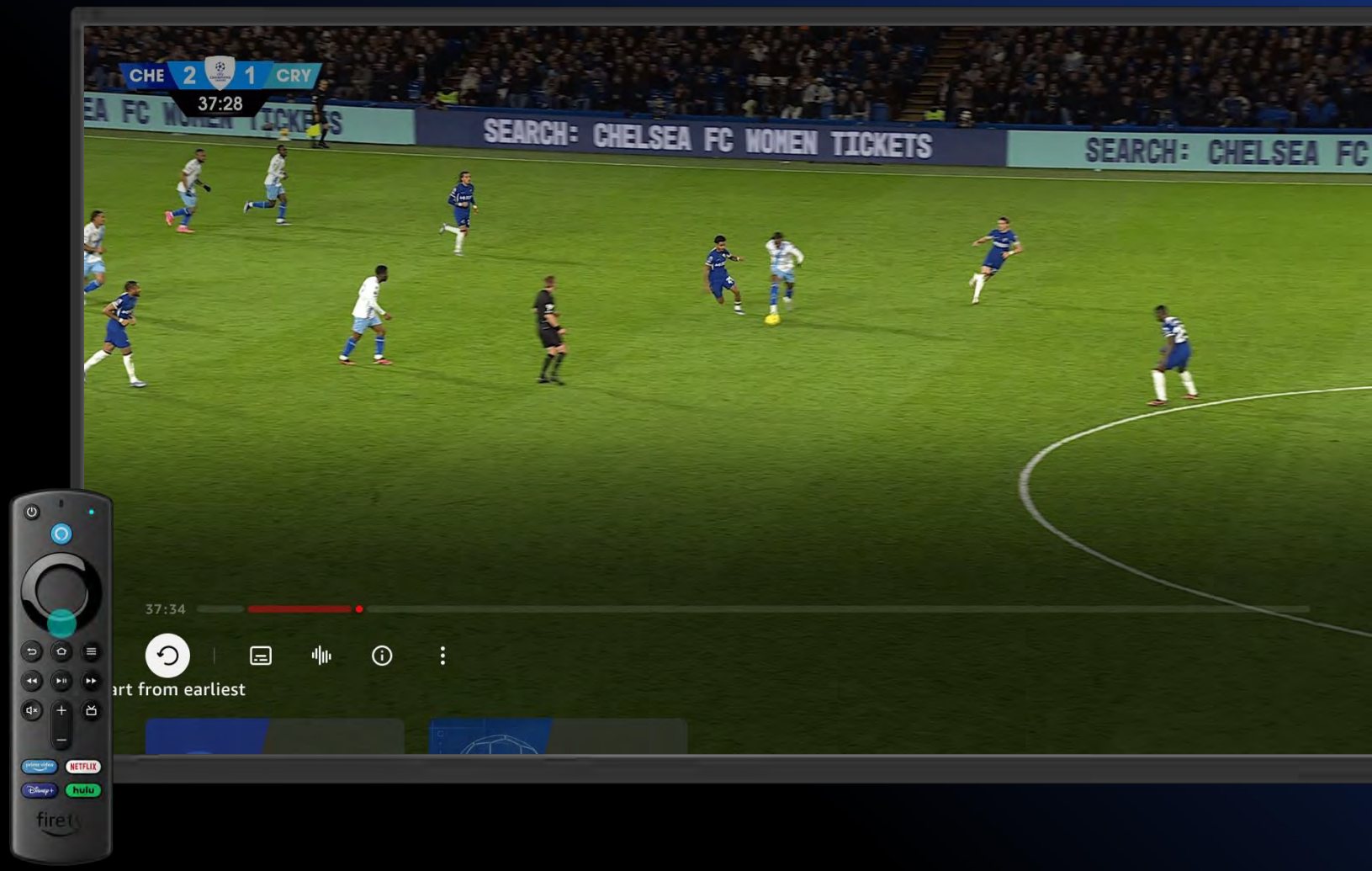
MIDDLE - CONTROLS



Once selected, playback continues with the framework overlay presented. Selecting down will highlight more player controls.

PLAYER FRAMEWORK

MIDDLE - CONTROLS



The customer selects down, which brings additional player controls into focus. From here, the customer can continue navigating right for more player controls.

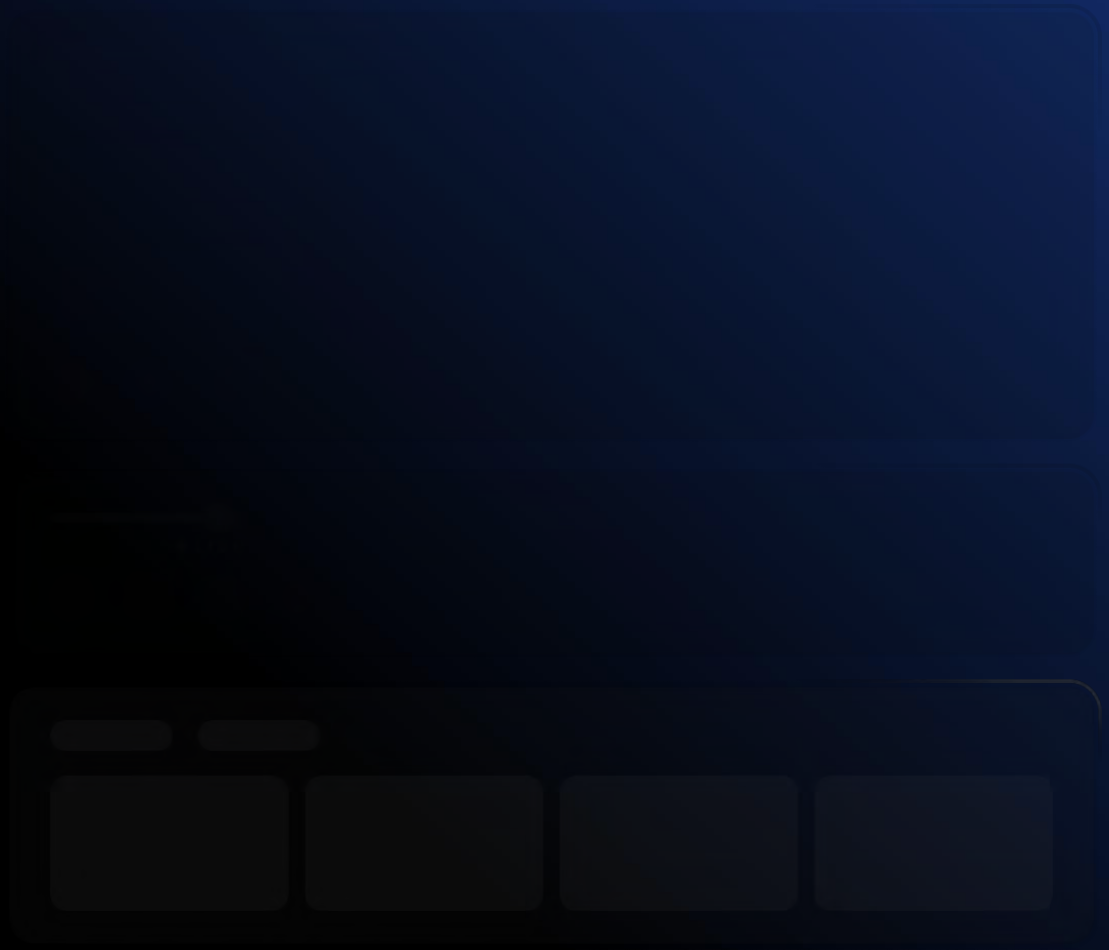
PLAYER FRAMEWORK

DOWN - DISCOVER

Up
Explore

Middle
Controls

Down
Discover

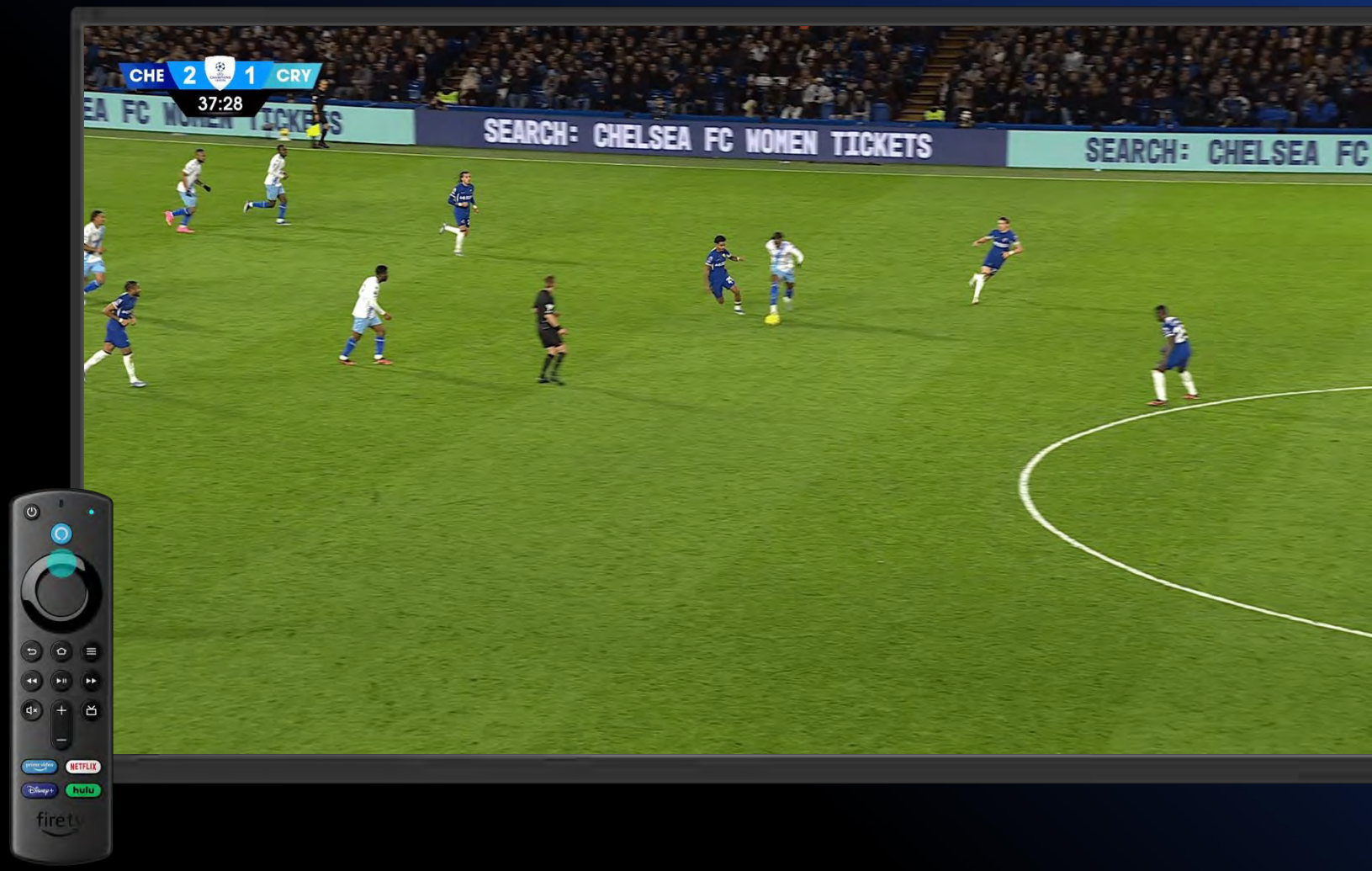


The following screens showcase the down interaction that a customer experiences when entering the augmented content player framework.

PLAYER FRAMEWORK

DOWN - DISCOVER

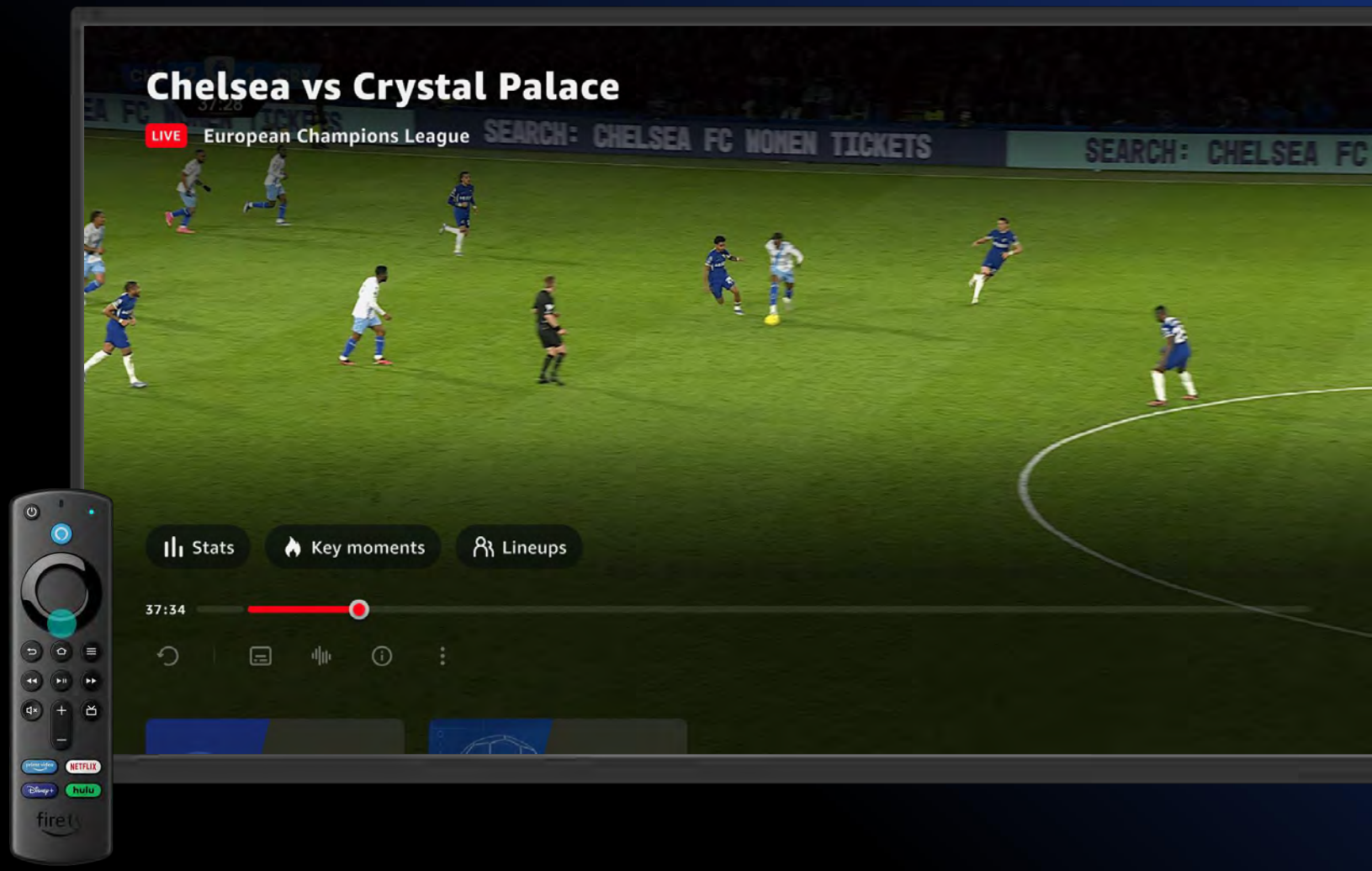
The customer is watching the Chelsea vs. Crystal Palace football match. The customer proactively selects [any input on] the D-pad, which surfaces player controls and augmented content.



PLAYER FRAMEWORK

DOWN - DISCOVER

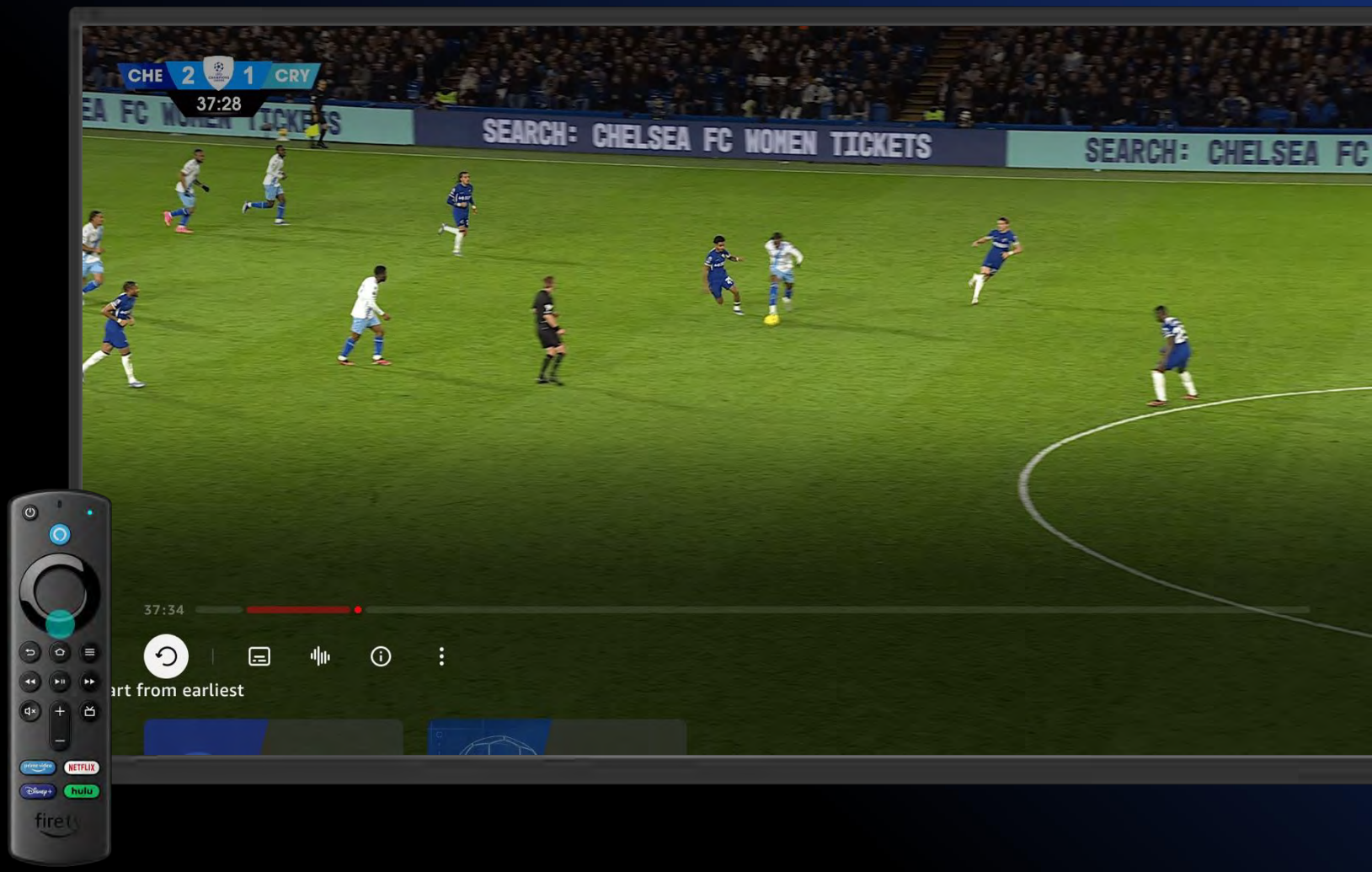
Once selected, playback continues with the framework overlay presented. Selecting down will highlight more player controls.



PLAYER FRAMEWORK

DOWN - DISCOVER

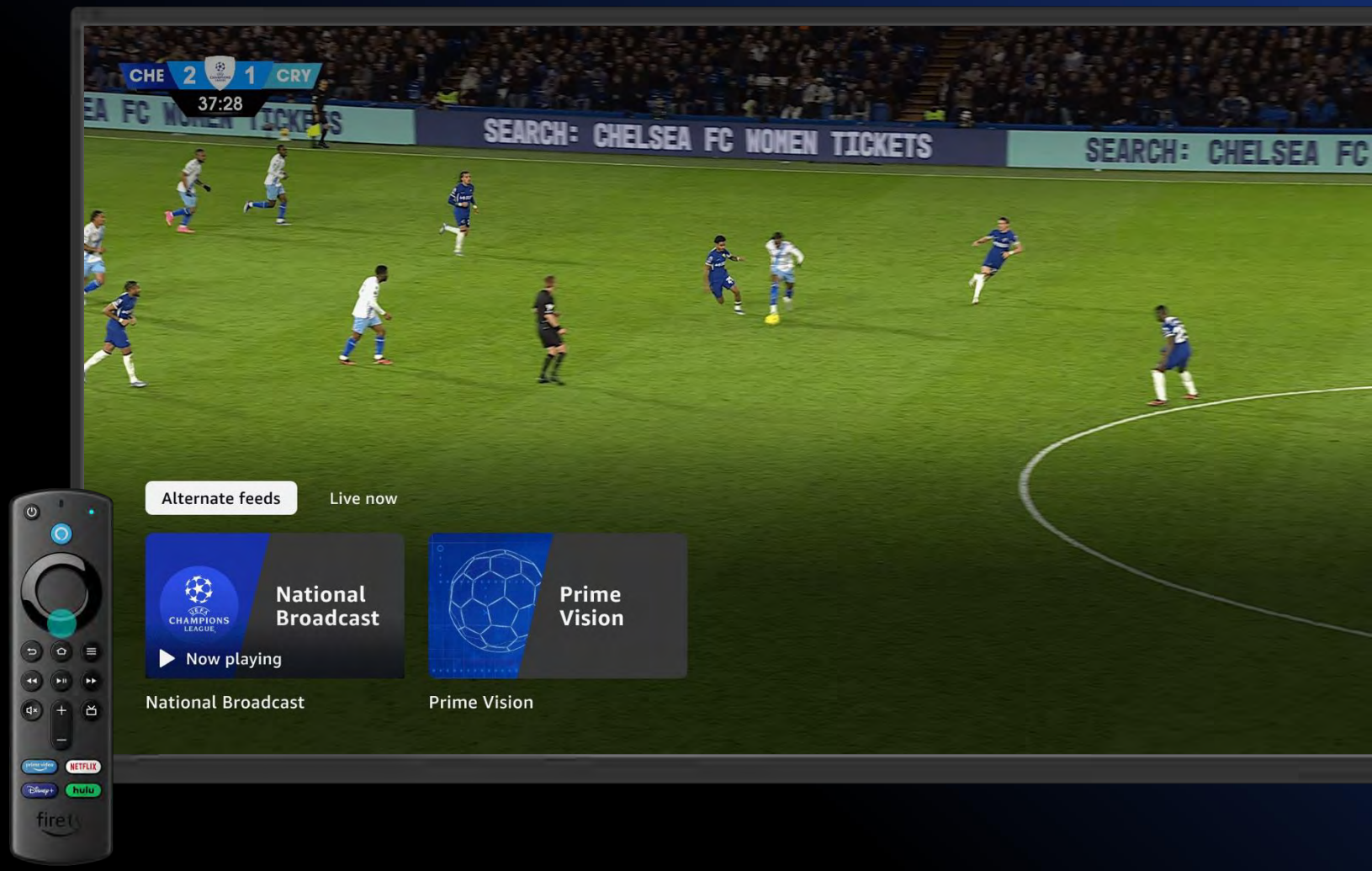
The customer selects down, which brings additional player controls into focus.



PLAYER FRAMEWORK

DOWN - DISCOVER

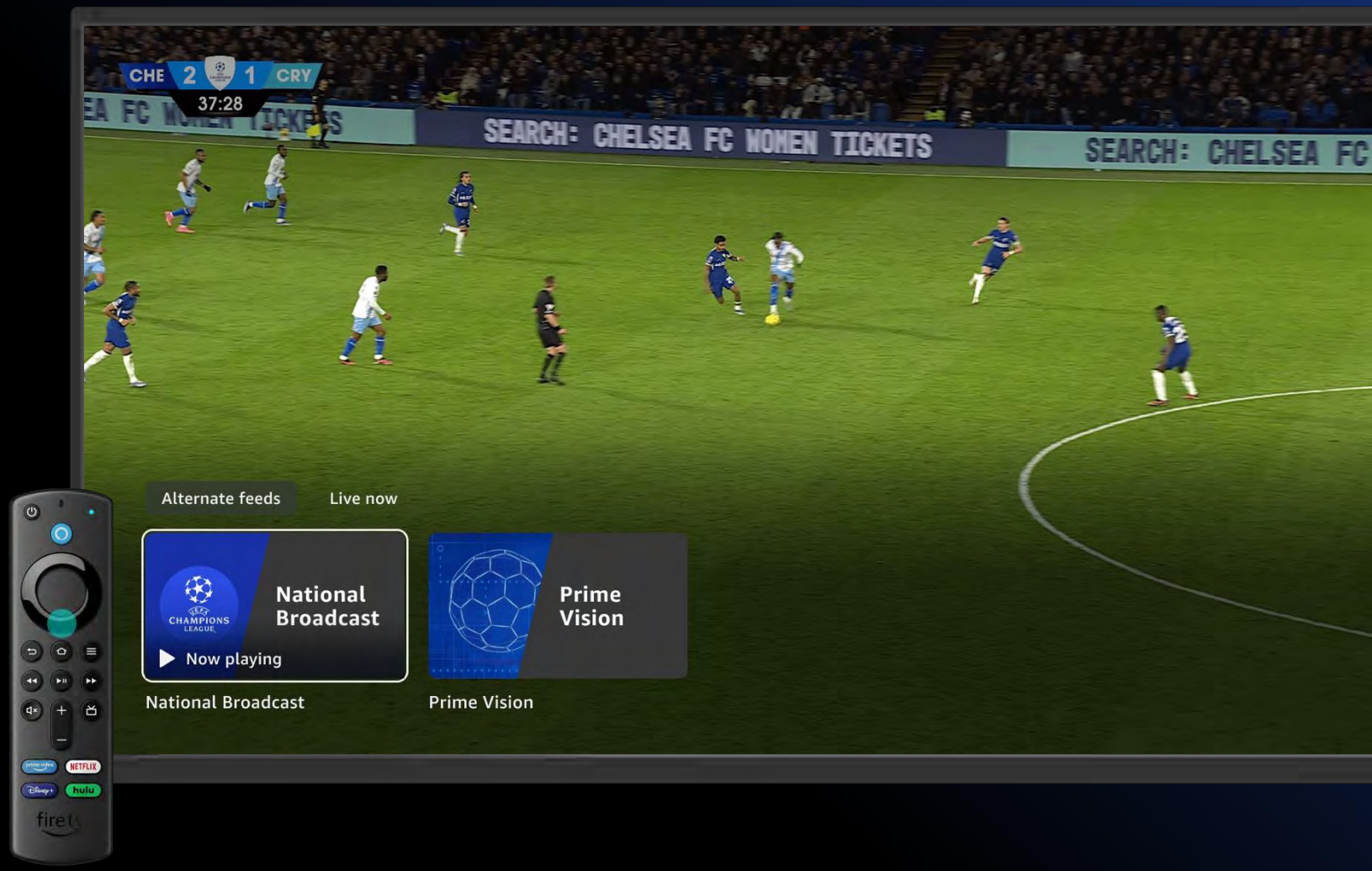
The customer selects down again, which hides playback controls and defaults to the Alternative feeds tab.



PLAYER FRAMEWORK

DOWN - DISCOVER

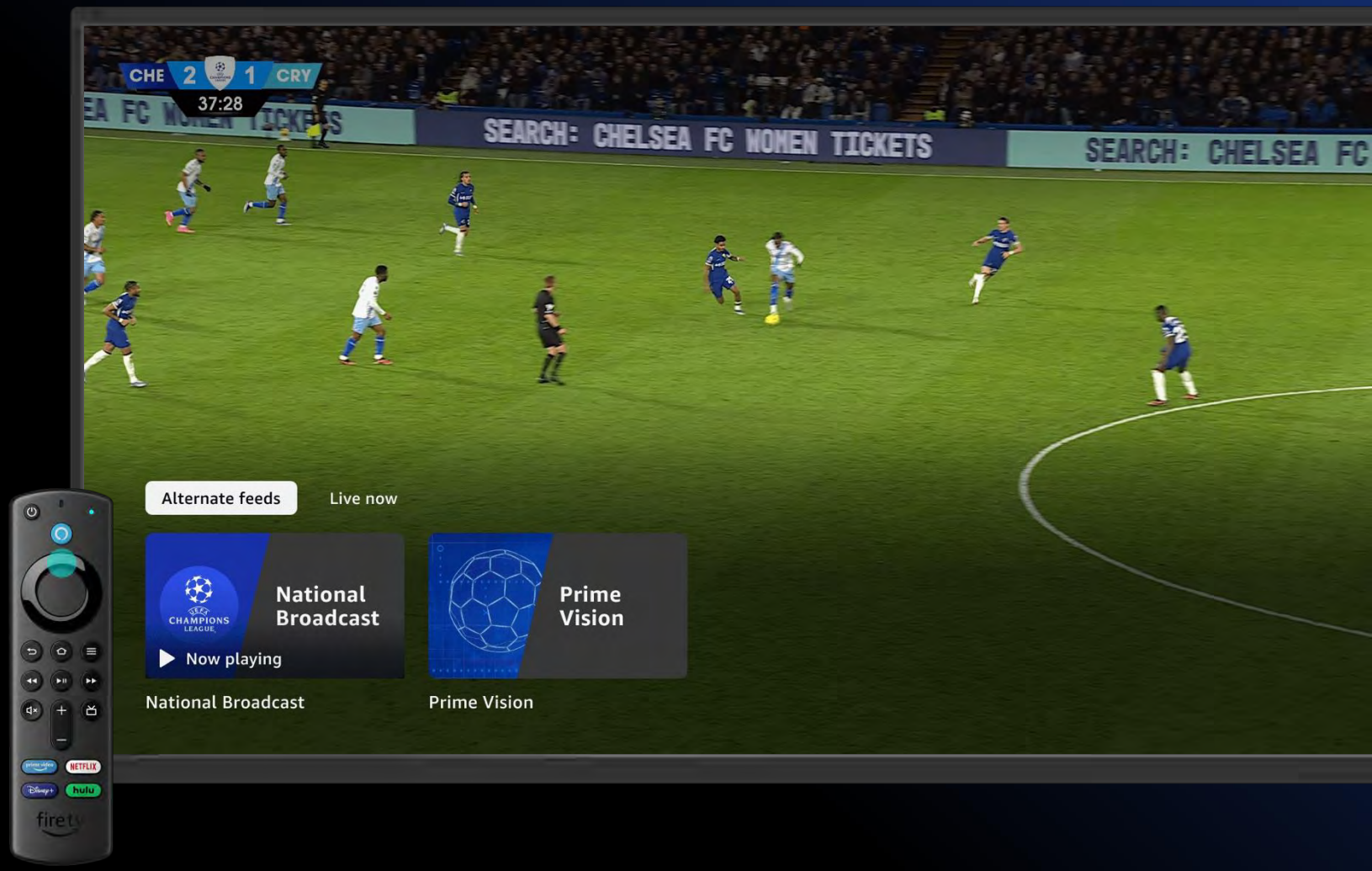
Selecting down again will bring the first alt broadcast into focus (what is currently playing). Selecting right will focus Prime Vision, and if selected, switch feeds to an enhanced version of the game.



PLAYER FRAMEWORK

DOWN - DISCOVER

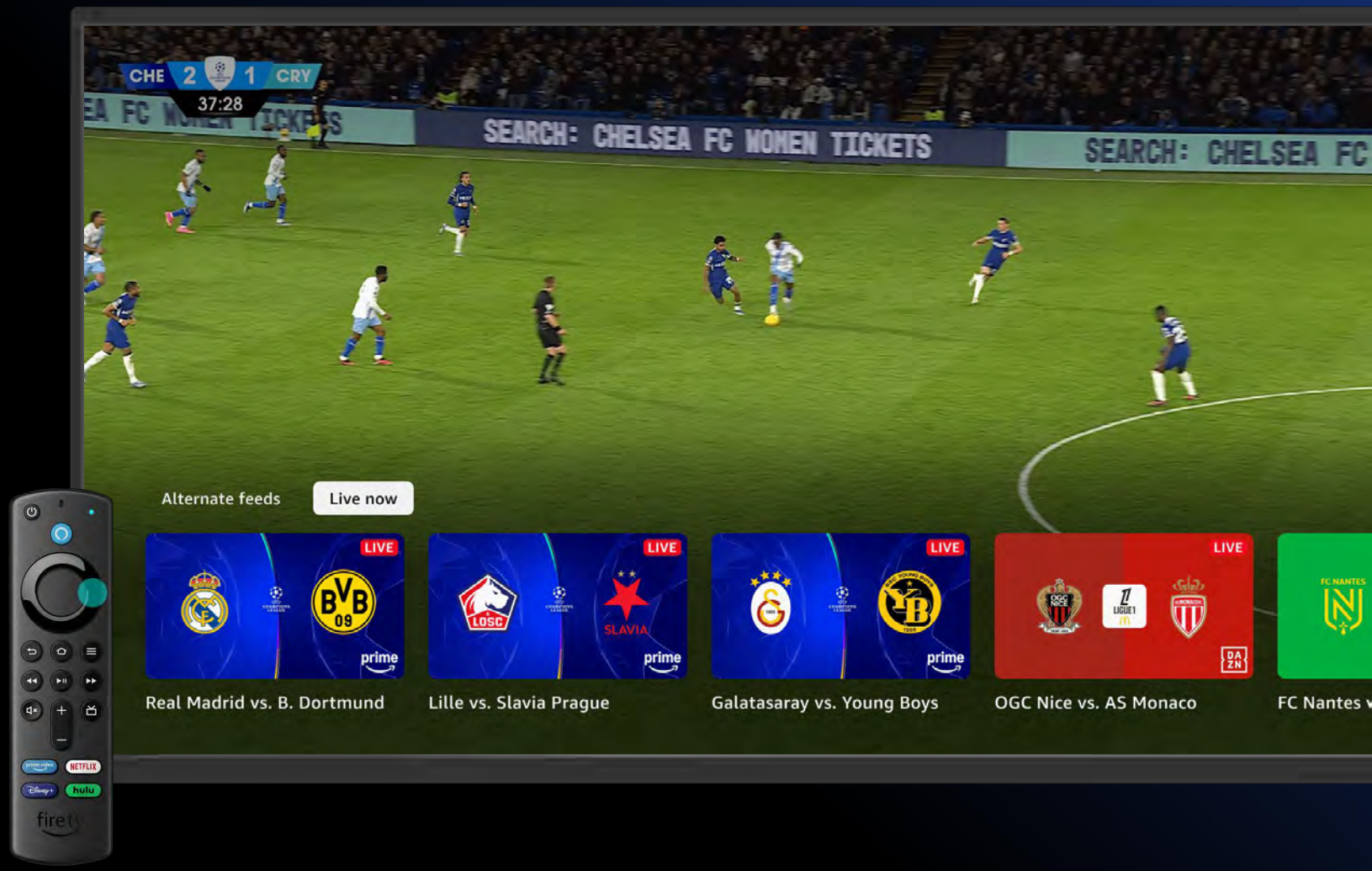
Selecting up will return to the Alternate feeds tab.



PLAYER FRAMEWORK

DOWN - DISCOVER

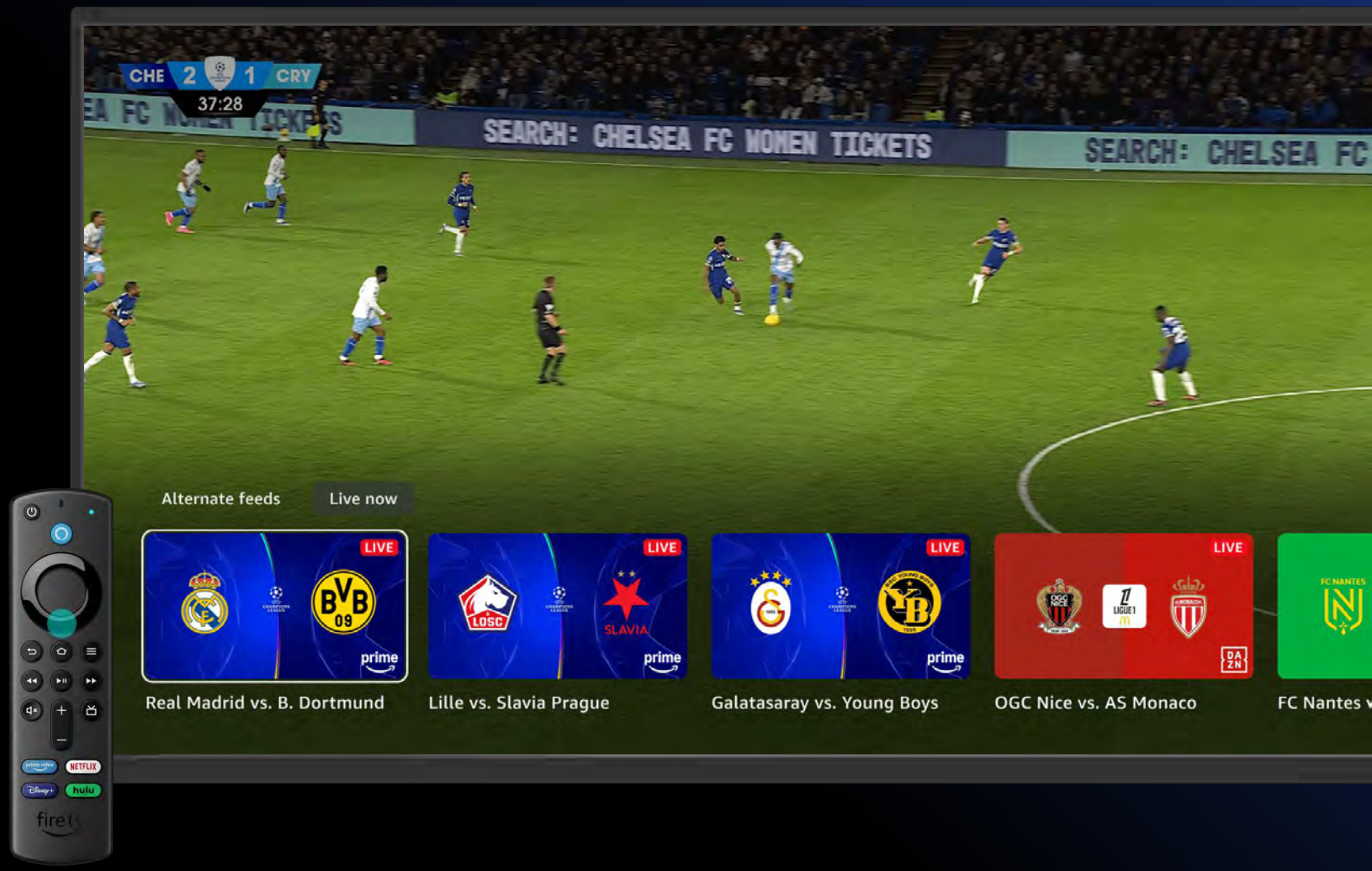
Selecting right will bring the Live now tab into focus.



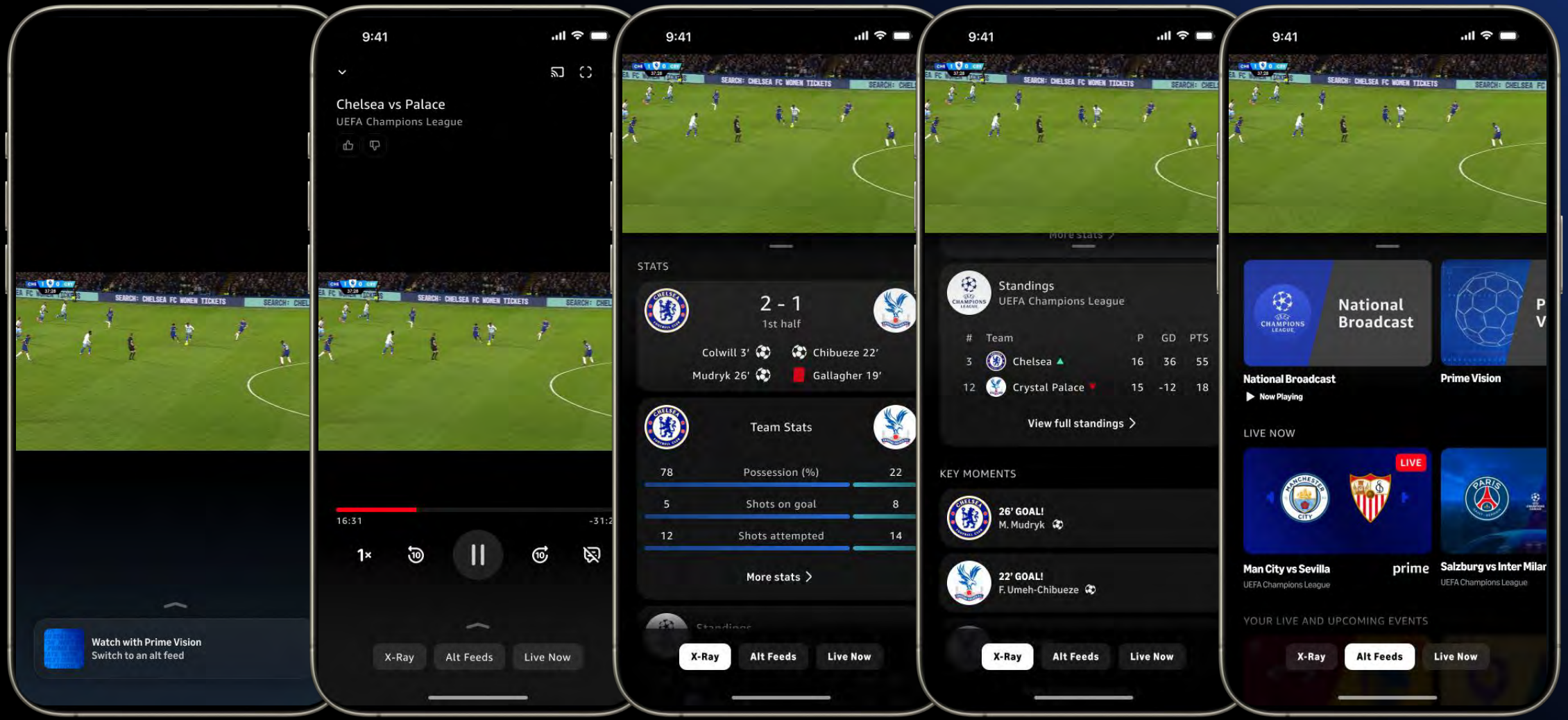
PLAYER FRAMEWORK

DOWN - DISCOVER

Selecting down will bring additional live games into focus. If selected, playback will transition to the selected game.



AUGMENTED CONTENT MOBILE CX



AUGMENTED CONTENT OUTCOMES

During the December 2024 beta launch across six EPL matches, customers showed strong engagement with augmented experiences alongside live gameplay. Feature interaction rates reached 38.2% for scoreboards, 28.8% for team stats, and 54.9% for lineup content, validating customer interest in contextual live sports insights during playback.

Increased engagement by

38.2%

Scoreboards

Increased engagement by

28.8%

Team Stats

Increased engagement by

54.9%

Lineups

Beta Metrics CSAT Score

4.6

CSAT Score

MY CROSS-FUNCTIONAL LEADERSHIP

01

Led a team of 10 designers across mobile redesign initiatives

02

Partnered with IDEO, PM, Engineering, and ML Science teams

03

Facilitated global workshops and research synthesis

04

Influenced product strategy through customer behavior insights and experimentation

05

Helped align UX, personalization, and business goals across multiple orgs

06

Contributed to our Design System and created engineering tokens

FINAL THOUGHTS

Great product design happens at the intersection of human behavior, business strategy, and evolving technology. The most meaningful experiences aren't just usable; they build trust, reduce complexity, and help people feel understood. ❤️