clearbridge
mobile

CASE STUDY

TV EVERYWHERE

PROJECT

Our client, a multinational media company, required a TV Everywhere solution with VOD and live streaming capabilities for three different brands under three different apps. The applications needed to include support for connected devices such as Chromecast and Apple TV.

SOLUTION

Clearbridge built a codebase that could be leveraged to build three different apps and would include integration for Chromecast and Apple TV. Our UI/UX team worked with the client to implement and improve existing designs and experiences. Clearbridge was able to deliver 24 applications in less than 8 weeks.

KEY TECHNOLOGIES & PLATFORMS

» Google Chromecast & Apple AirPlay
» Adobe Pass (TV Authentication)
» UpLynk Video Player
» Android, Kindle, Nabi
» Freewheel Ads Integration
» Omniture, log.go, comScore

TECHNICAL & IMPLEMENTATION CHALLENGES

1) ONE CODEBASE, LARGE PROJECT SCOPE

Clearbridge needed to develop 3 apps in 8 weeks for iOS and Android (including Kindle and Nabi). With tight deadlines and a large project scope, we needed to find a way to reduce development time.

Clearbridge used one codebase with multiple Flavors for Android. Instead of developing all 3 apps from the ground up, we were able to reuse 80% of the code across the applications.

2) RADIO INTEGRATION

Clearbridge needed to build out a radio functionality for each app. The radio function had to stop when users played a video and resume when users exited the video player. Keeping track of both the radio and video threads can be memory intensive and affect application performance.

Clearbridge created a singleton pattern for radio management that allowed us to create a static object in the memory once, and then access that object for all radio-related business logic.

3) RESPONSIVE LAYOUT

The apps had to resize to display perfectly on each device. Using just the device screen size returned by the OS was not enough because not all real estate is accessible by the app. For example, Kindle devices have a permanent OS level navigation bar that the app cannot remove.

We measured the screen size twice (once for portrait, once for landscape) before loading the layout of the app. We accomplished this by creating an invisible empty view (100% width and height) that filled the screen. We then calculated the usable width and height in pixels returned by the empty view to create the layout.

4) GOOGLE CHROMECAST

Clearbridge developed the receiver application to support Chromecast. We had to follow strict design guidelines and navigate the Google Dogfooding process. Additionally, we successfully designed solutions for extreme edge cases:

» Reconnect device and resume stream if WiFi router goes offline

» Reconnect device and resume stream if phone turns off

» Reconnect device and give controls back when device loses connection to Chromecast

5) VIDEO PLAYER INTEGRATION

The main goal of the app was to allow users to watch long form and short form videos. Each video playback required two active video players: 1 player for the content, and a second player for ads. Every time a new video starts, 2 new players are added to the memory. This was problematic because running multiple video players is extremely memory intensive and caused the app to crash.

Clearbridge created a video player management solution where only one set of video players could be active at any given time. This was accomplished by writing custom code that monitored the active state of a video player. The next video player was only started when the current player was properly closed and removed from the memory.
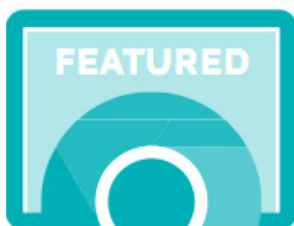
BUSINESS RESULTS

Over **1 Million** downloads to date.

Delivery Time
Less than **8 Weeks** for initial applications, with AirPlay and Chromecast apps delivered in less than **12 Weeks**.

Chromecast Featured Apps
All 3 apps we developed are **Chromecast Featured Apps**

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