

Case Study: Liberty Puerto Rico

Personalized mosaic for social TV navigation on existing STBs



EXECUTIVE SUMMARY

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Customer Name: Liberty Puerto Rico
 Industry: Pay-TV
 Location: Puerto Rico
 Total Subscribers: 218,000 Digital Video Subscribers

BUSINESS CHALLENGES

- Subscriber difficulty in finding content of interest, even in 100+ channel lineup
- Erosion of perceived value of video service bundle
- Inability of existing set-top boxes to support advanced search, discovery and navigation

BUSINESS SOLUTION

- Virtualization of STB in the cloud to enable rich interface that combines social trending info with multiple tiles of live video
- Use of CloudTV™ GuideCast from ActiveVideo to create advanced UI: eight channels of live video at one time to a single-tuner set-top box
- Cloud based integration of real-time trending data to rank channels in order of current viewing popularity

BUSINESS RESULTS

- Development and deployment of cloud-based advanced user interface within one year
- Delivery at scale to approximately 170,000 existing set-top boxes, with further rollouts anticipated
- Increased subscriber satisfaction over ability to view eight channels of live video and to see what is trending in the community at a single glance

Background

Liberty Cablevision of Puerto Rico is the largest cable operator in Puerto Rico, providing television, broadband Internet and telecommunications services to more than 575,000 subscribers throughout the Commonwealth. The company was founded in 1986 and has grown organically and through acquisition. In the near future, Liberty Puerto Rico will reach more than 80 percent of the homes on the island: more than 700,000 RGUs generating more than \$380 million in revenue.

Liberty Puerto Rico’s growth strategy has presented it with the difficulty of delivering new services ubiquitously over heterogeneous device environments. Efforts to bring advanced services to customers must take into account limitations in the capabilities of existing set-top boxes, as well as variations in device hardware and software.

Business Challenges

As Liberty Puerto Rico has increased both its customer base and its channel lineup, it has faced a subscriber perception issue: While the operator was delivering more than 100 video channels, each subscriber tended to watch only a small, personal subset of those, leading them to question the value of — and potentially to reduce — their investment in pay-TV service.

For Liberty Puerto Rico, the solution was not in adding more content; rather it was in creating new ways for subscribers to find content of interest that already was being offered, and to enable those subscribers to be part of the “water cooler” conversation around programs that were being viewed by the community at large.

In 2013, the operator explored ways of curating content for subscribers. Among the options that were considered and rejected were:

- “Editor’s Choice” curation, in which recommendations would be made by the company, were considered insufficient for addressing subscribers’ personal preferences.
- Algorithms, such as those used by Web-based recommendation engines, could suggest programs based on subscribers’ individual viewing habits, but would be unable to adapt to breaking news stories or other special programming.
- Subscriber use of second-screen social media activity to inform their viewing choices would rely on an additional layer of engagement that may or may not correlate to actual television viewing.

Liberty Puerto Rico concluded that what was needed was an entirely new solution that would provide real-time social trending insights into viewing patterns by the community at large. Customers sought an interface that would behave in a guide-like manner, but would replace static information with a dynamic view of both the content being shown and its popularity relative to other programming at any given time.

Over a period of several months, Liberty Puerto Rico created a list of desired features, including:

- Real-time rankings of program popularity;
- Real-time views of actual channel feeds;
- A common interface for every subscriber, regardless of the make and model of the set-top box in the home; and
- The ability for subscribers to personalize the interface to accommodate their own viewing preferences.

To achieve those goals, the operator needed to overcome a significant hurdle: the limitations and fragmentation of the deployed base of multiple set-top box makes and models — each with variations in middleware, operating systems and chipsets. A device-based solution would require writing the application multiple times for each STB variation. Moreover, the abilities of the existing STBs to support advanced services of any kind were limited by the processing capabilities that had been designed into the devices. In addition, the solution would need to be deployed within Liberty Puerto Rico’s existing pay TV guide environment.

Solution

To overcome these set-top box dependencies, Liberty Puerto Rico created a solution based entirely in the cloud. Virtualizing set-top functionality would allow the operator to render rich, interactive interfaces with multiple tiles of live video in the cloud and stream them as a consistent user experience to every STB. Further, the cloud-based solution could be designed to incorporate system viewing data and programming metadata that would enable programs to be ranked according to actual viewing, not abstract recommendations.

“Cloud based technology allowed us to control, modify and deliver user interface experiences similar to what the web based companies do — and even better.”

— Assaf Kaminer, CTO, Liberty Puerto Rico

Liberty Puerto Rico selected the CloudTV™ GuideCast software platform from ActiveVideo for the project. CloudTV GuideCast decouples user interfaces from device dependencies, so that a broad range of navigation applications — including linear guides, Cloud DVR, on-demand UIs and other interfaces — can be delivered uniformly to any existing or new STB or consumer device. CloudTV GuideCast enables operators to deploy advanced user interfaces without the cost or time-to-market required to upgrade new-set-top boxes or to author applications for each make and model of device.

These capabilities enabled Liberty Puerto Rico to bring its “Social Content Navigator” from the conceptual stage to deployment within an accelerated timeline of approximately one year. This included: product design and approvals; configuration and installation of hardware; integration with existing Liberty Puerto Rico systems; software development; design of the user interface; creation of set-top box clients; and testing of the entire solution. Trials were begun during the first half of 2014.

“Liberty Puerto Rico is delivering mosaics of up to eight video feeds — ranked according to current popularity — to every subscriber, without the need to purchase or install a new multi-tuner set-top box.”

Social Content Navigator actually is the product of two key innovations: The use of the cloud to merge viewing data, metadata and real-time content that can be delivered as a single stream to any set-top box, as well as the ability of the cloud to support multiple tiles of live video on single-tuner STBs. Says Assaf Kaminer, CTO of Liberty Puerto Rico: “Cloud based technology allowed us to control, modify and deliver user interface experiences similar to what the web based companies do — and even better.”



To determine channel popularity, Liberty Puerto Rico selects at random 10% of its set-top box universe at 4 a.m. each day. Those devices — currently approximately 20,000 — are polled once each minute over the next 24 hours to determine which channels are being viewed.

The information generated from the STB sample is blended with existing content metadata, most notably: the Show Name; the Genre; the Star Rating; and the Cast. The combined information is ingested by the Social Content Navigator application, an HTML5 channel mosaic that is rendered in the cloud and delivered as an MPEG-2 or H.264 video stream to existing set-top boxes.

“It’s actually faster in some cases than regular channel surfing through the set-top box.”

— Waldo Hooker, VP, Product & Strategy, Liberty Puerto Rico

Social Content Navigator’s value is enhanced by the second innovation: By rendering the entire application in the cloud, and not in the device, Liberty Puerto Rico is delivering mosaics of up to eight video feeds — ranked according to current popularity — to every subscriber, without the need to purchase or install a new multi-tuner set-top box.

Moreover, the cloud-based application supports personalization of mosaics, including by Genre or by a viewer’s favorite channels. A particular feature of Social Content Navigator is that it identifies content genres on a Program basis, not a Channel basis; thus, a sporting event being televised on a news channel would be ranked in the Sports genre, rather than the News genre.

Pressing the “B” button on standard remote controls enables viewers immediately to see the eight most-viewed channels at that moment on the Liberty Puerto Rico system. Viewers can use the compass keys to navigate to a specific program, to scroll through additional programs — up to 200 in all — or to view specific Genres or their favorites. Viewers leave the mosaic when they tune to an individual channel, but can re-launch Social Content Navigator at any time by pressing the “B” button. Waldo Hooker, vice president, product and strategy for Liberty Puerto Rico, notes that although each key press involves a round-trip to the cloud, latency has not been an issue: “We’ve been surprised that it’s actually faster in some cases than regular channel surfing through the set-top box.”

As additional homes and devices are added to the network in the future, Liberty Puerto Rico predicts that the cloud-based system will continue to deliver value. Kaminer notes that it will be able to provide advanced user experiences consistently to customers, whether they are using “existing set-top boxes or future IP devices — whatever they are, wherever they are.”

Results

Throughout the rollout of Social Content Navigator to the vast majority of subscribers, Liberty Puerto Rico has received positive feedback from subscribers regarding the utility and performance of the interface. Liberty Puerto Rico intends to begin marketing the application in 2015. In the meantime, Social Content Navigator demonstrates how virtualization of set-top box functionality can eliminate cost and time-to-market obstacles in delivery of advanced user experiences to every subscriber, most notably:

- Rapid development and deployment of advanced user experiences, moving from concept to initial availability in approximately one year;
- Delivery at scale of advanced, cloud-based user experiences to approximately 170,000 set-top boxes;
- Ability of vSTB functionality to support integrate viewing data, program metadata and multiple tiles of live video for delivery as a single stream to any STB; and
- Ability of vSTB functionality to support multiple tiles of live video, even on a single-tuner STB