Breathing New Life into Older Set Top Boxes with Virtualization

Many video service providers rely on virtualization to bring flexibility and cost efficiency to their storage, processing and routing infrastructure. But until now, virtualization had not yet made its way to the set-top. Doing so can help service providers overcome a significant challenge- how to consistently deliver video services and consistent user experiences across multi-generation set tops as they evolve to newer units.

By virtualizing key set top functions in the cloud, service providers can provide next-generation user interfaces that give consumers a whole new way to find their favorite television shows and movies, consume online content and interact with advertisers. Dynamic interactions like these with consumers can generate greater customer loyalty and increase revenue-generation opportunities. Furthermore, virtualizing set-top functions can also help service providers deliver a consistent experience across their network footprint, while helping them to better compete in today's continuously evolving streaming video world.

Older Devices Negate Impact of Next-Gen Interfaces

The challenge lies in finding a way to capitalize on next-generation interfaces while serving customers who still utilize older set top boxes. Such devices simply don't possess the necessary processing capabilities and can't handle modern interface protocols like HTML5 or display OTT services such as Netflix or YouTube. This excludes legacy devices from the visually pleasing, personalized interfaces that consumers expect, and prevents them from displaying streaming content or running intelligent applications. It also poses a problem of consistency, where devices with distinct capabilities are offering varying service capabilities and experiences.

This is not an easy and inexpensive problem to solve. Service providers invest heavily in set top boxes, so replacing older devices with modern units all at once is not a feasible option. In addition to the cost of purchasing the devices and utilizing field service teams to install them in consumer homes,

consumers will likely be averse to increasing their monthly fees for using a new set top box device.

The Answer: Virtualized Set Top Boxes in the Cloud

ARRIS is helping service providers take on these challenges through a strategic partnership with ActiveVideo® . The company offers a cloud-based software platform called CloudTV™ that ARRIS is now offering to its customers as part of its end-to-end video delivery portfolio. The platform renders HTML5 user-interfaces and experiences in the cloud, then delivers the interface using an ultra-thin device client—to a two-way capable set-top at the consumer premises, regardless of its age.

This approach can scale dynamically, enabling consistent, branded video experiences across all generations of set top boxes. By leveraging the new technology to virtualize set top functions in the cloud, service providers can add several new functions and services to their lineup:

- A common interface for devices while easing the transition to IP video: This is especially helpful for service providers with a mix of old and new customer premises equipment. By virtualizing set-top functions, all customers share a single, unified experience.

- A richer interface compared to current middleware and back-end systems: Service providers can engage customers with a user-friendly experience that gets them exploring their viewing options to a greater degree and provides personalized recommendations to help promote valuable content.

- New streaming sources for VOD and OTT applications: Services such as Netflix, Hulu and YouTube can be rendered in the cloud and delivered as secure video streams to the set-top, giving consumers a whole new set of viewing options—without having to buy a separate device or switch inputs.

- New non-video applications: Virtualized set top boxes allow service providers to deliver sports scores, weather, news, stock feeds and other helpful information. This a great way to build and maintain customer loyalty and increase the amount of time customers spend using the service—a key factor for advertisers.
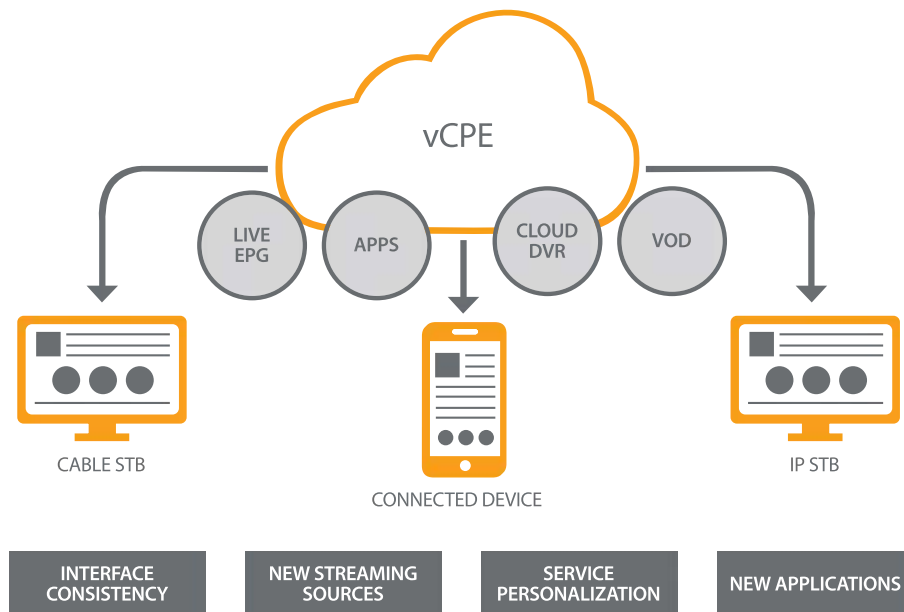
Figure 1: vCPE enables rich, unified, personalized experiences across multiple device types

The compelling interface, personalized recommendations and new streaming options made possible by set-top virtualization allow service providers to add new revenue generators—like streaming video services—on top of their existing service package. Service providers can also create an integrated video delivery environment for all types of content, without having to bounce back-and-forth between their streaming packages and their regular cable television package or constantly change remotes. Most importantly, set-top virtualization allows service providers to manage the life cycle of their existing multi-generation set tops while enabling greater agility to deliver new service experiences.