Cisco Videoscape: Connecting Experiences. Your Way.

Introduction

Video services have never been more popular or more valuable. According to ABI Research, global revenues for pay TV have grown from approximately $150 billion to $250 billion in the past five years alone. But in this dynamic environment, service providers and media companies also face new challenges.

- **New low-cost competitors:** Ubiquitous broadband connectivity has lowered the barriers to entry for video services. "Over the top" (OTT) online video services are eroding incumbents' subscriber bases by offering a new, although limited, video experience at a low cost to the consumer.
- **Rising prices for premium content:** At the same time, the premium content that consumers desire (and that distinguishes full-service TV providers) has become more expensive as media companies and cable, satellite, and telco operators bid against each other for the most popular content.

Together, these trends are squeezing incumbents' profitability and causing them to reexamine how to best increase revenue and profits. To stay relevant as OTT video services extend to new consumer devices, video operators must offer competing multiscreen capabilities, but they must go a step further and build a unified premium brand across all those screens. And, to continue winning the bidding for the best premium content, they must also find ways to build unique and compelling experiences around that content to increase subscriber loyalty and find innovative ways to monetize those experiences.

A New Generation of Video Experiences

What does a unique and compelling video experience look like in today's evolving video marketplace? It is all of the following.

Next-Generation Multiscreen

All video providers are moving to extend video services to all screens, from smartphones and tablets to gaming consoles, connected TVs, and more (Figure 1). To differentiate your offering, you need to take multiscreen experiences to the next level - delivering video in a more exciting, immersive, and engaging way.

Figure 1.   Next-Generation Multiscreen Video

Contextual and Synchronized

Next-generation video includes synchronized experiences across screens, including the ability to pause viewing on one screen and "fling" it to another, letting users take the video experience with them on the go. It also involves delivering synchronized content such as alternative camera angles, character biographies, scores and statistics, and more to companion screens (Figure 2). Currently, 75 percent of global TV viewers already use another device as they watch TV. By integrating companion experiences directly with primary-screen viewing, you can offer a more engaging viewer experience and increase ad inventory.

Figure 2.   Contextual and Synchronized Video

Personalized "My TV"

We already expect a personalized media experience when we use the web, with our customized news feeds, favorites, and recommendations. As video choices proliferate, personalized content discovery becomes essential for TV as well. This is true for personal devices, where we already find content through search, but also for the big screen, where we want an easier way to navigate hundreds of channels and thousands of on-demand titles to get to the content we care about (Figure 3). Personalized recommendations can come from social connections, analytics-driven suggestions, and the viewers' own history - the content they've chosen to purchase and store.

Figure 3.   Personalized TV

Social Viewing

The next-generation video experience draws on the power of social networks to bring people together and deepen viewer engagement. It allows subscribers to have virtual viewing parties, as well as real-time instant messaging and video chats that augment the linear video experience. It also includes new social experiences and new ways to connect with other viewers around content with companion screen applications (Figure 4).

Figure 4.   Social Viewing on TV

Focused on the Future

As multiscreen video becomes more synchronized, personalized, and social, we will see new applications that we can only begin to imagine today. Emerging services for in-home automation, security, home health and lifestyle applications, and more are just the beginning. To capitalize on new innovations, you want a flexible, software-based video system that can grow and evolve with new customer experiences.

Cisco Videoscape: An Experience-Centered Platform for Video Services

Cisco Videoscape™ is a platform for delivering and monetizing a new generation of compelling, differentiated video experiences. It answers the next-generation demand for video experiences on multiple screens, empowering service providers and media companies to rapidly create and connect new synchronized, personalized, and intuitive multiscreen experiences. Evolving from the Cisco Videoscape platform, Cisco® Videoscape is strengthened and enhanced with solutions that bring powerful new capabilities across the platform:

- An enhanced cloud to increase capabilities aligned to business needs
- An intelligent network to optimize capital and operating expenses (CapEx and OpEx)
- An immersive client approach to provide the new Cisco Videoscape experiences anytime, anywhere, on any device

Which new capabilities lead to a strengthened and enhanced Videoscape platform?

- **User interface:** Cisco Videoscape strengthens the Cisco Videoscape platform most at the point where video providers and subscribers interact: the user experience. The platform features the multi- award-winning Cisco Videoscape Snowflake™ user interface that allows you to create customized, immersive experiences for your subscribers.
- **Client software:** Cisco Videoscape includes industry-leading Cisco Videoscape MediaHighway™ client software, which is widely used to bring advanced experience and interaction to set-top boxes (STBs) and connected devices.

- **Security:** Incorporating industry-leading, multiplatform security technology, Cisco Videoscape Security Suite includes both Cisco VideoGuard® CA conditional access and Cisco VideoGuard DRM digital rights management products. These components provide the critical, end-to-end protection you need to monetize premium content and services across multiple screens.
- **Advertising:** Cisco Videoscape introduces powerful ways to monetize content through addressable advertising.
- **Subscriber and device management:** Cisco Videoscape offers highly advanced subscriber and device management capabilities.

Built Around Your Business Needs

Cisco Videoscape is designed to give you maximum choice in creating unique, innovative experiences for your subscribers. The platform offers these key advantages.

- **Modular:** Cisco Videoscape is based on modular building blocks with open APIs among all components. This lets you upgrade and enhance each component individually as your business needs change.
- **Flexible:** Most service providers already have installed components - for example, billing systems and video encoders - that they want to continue using as they deliver and offer new experiences. Because Cisco Videoscape components have open interfaces, you can deploy them individually to reduce costs, and flexibly insert them into your existing architecture.
- **Open:** The Videoscape Open API Framework offers open and modular APIs across cloud, network and client. This enables service providers to better plan, control and manage their infrastructure by providing access to essential information for interfacing with third party components, and to develop new, compelling applications.
- **Fully customizable with Cisco Services:** We recognize that differentiation is the key to your success.

That is why Cisco has dedicated resources to fulfilling the unique vision of each of our customers and delivering a differentiated subscriber experience. We offer industry-leading customization capabilities, tailored to your unique needs and vision and integrated with our powerful cloud platform.

Today, you have two choices for deploying new video experience capabilities through Cisco Videoscape. You can deploy a pre-integrated, end-to-end offer, or you can use individual Cisco Videoscape suites as "best-of-category" solutions and integrate them with your existing video infrastructure.

Cisco Videoscape Offers

A Cisco Videoscape offer is a tailored, end-to-end solution designed to address your specific business challenges. Each offer combines several Cisco Videoscape suites and products, as well as integration services, packaged and delivered as a single solution.

Cisco Videoscape offers draw on the unique combination of our powerful cloud platform, intelligent network, and immersive client capabilities. Cisco Videoscape cloud components, such as Cisco Videoscape Media Suite, are based on standard hardware components, pre-integrated end-to-end, that let you bring new capabilities to market quickly. But because these capabilities are software-based, they also allow you to continually enhance capabilities in the future as we release new software updates. In addition, we can draw on this standardized and advanced cloud infrastructure to help you customize how users interact with your service.

By taking advantage of Cisco Videoscape offers, your business will benefit from:

- **First-class products:** All Cisco Videoscape offers provide highly advanced technologies, including cloud and scalable web technologies, multi-device HTML5 client software, remote user interface capabilities, and security. All are customized and integrated to address a specific service provider business challenge
- **Faster time-to-market:** Cisco Videoscape offers are based on open, standards-based solutions, but are prepackaged and integrated end-to-end. They provide everything you need to quickly launch new services and make them a success
- **An extensive and compelling roadmap:** Each offer features an extensive roadmap that is tightly aligned to market dynamics. This helps to ensure that you can rapidly adjust to market changes and remain competitive
- **Investment protection:** Each offer expands upon today's Cisco Videoscape foundation to protect and build on your investment. And each is based on "no-regret" investments in Cisco Videoscape solutions that can be enhanced in the future through software updates
- **Consistent experiences:** Cisco Videoscape offers blend broadcast and broadband capabilities and give you tools to provide the same level of service across one-way, two-way, and hybrid STBs and client devices. They provide a common experience and portability across both managed and unmanaged devices, allowing you to quickly extend your brand and services to new screens.
- **Transparent, flexible pricing:** Cisco offers a unified pricing model across cloud, network, and client elements, as well as optional support from Cisco Capital®, which offers competitive and flexible financing to help you acquire Cisco technologies
- **Service elasticity:** Using modern cloud and IP technologies, you can quickly and continually adapt your video platform to meet the changing needs and tastes of your customers. Cloud elasticity allows you to introduce new applications with low upfront capital investment and scale them as demand grows
- **Full customization:** Cisco Services dedicates significant resources toward customizing any Cisco Videoscape offer you deploy. We can help you fulfill your vision of delivering a unique subscriber experience that integrates with Cisco's powerful cloud platform and is tailored to your unique business needs

Four Cisco Videoscape offers are available today:

- Cisco Videoscape Multiscreen Cloud DVR
- Cisco Videoscape Video Everywhere
- Cisco Videoscape IP Video Over Cable
- Cisco Videoscape Connected Video Gateway

Cisco Videoscape Multiscreen Cloud DVR Offer

Viewers already expect to have the flexibility to arrange their TV viewing around their own schedules. Now, they want the freedom to enjoy this flexibility inside or outside the home, without worrying about the scheduling conflicts or storage limitations that typify hardware-based digital video recorders (DVRs). The Cisco Videoscape Multiscreen Cloud DVR Offer lets you provide these capabilities and more, supporting a more profitable video offering and happier subscribers.

Your customers can restart live shows; catch up on past programs; and schedule, manage, and play back DVR recordings from any device, inside or outside the home. The offer combines the best of both STB- and cloud-

based time-shift capabilities, so customers can extend network-based time-shift TV services to their STBs and enjoy cloud-based recording, scheduling, and playback on any connected consumer device.

With Multiscreen Cloud DVR, your customers can:

- Catch up on their favorite shows on any device, anytime, anywhere
- Capture and manage recordings in the cloud and play back on any device
- Pause and resume content from a companion device for total viewing control
- Avoid having to skip recordings due to a limited number of tuners and limited DVR space
- Browse and watch time-shift TV content (for example, restart a live program from the beginning, navigate backward on the program guide to discover and watch content, pause live TV) on the STB or any connected device
- Add storage capacity without the need to purchase new hardware
- Combine previously installed hardware DVR and cloud DVR services with the ability to add cloud storage when hardware storage is full, as well as decide whether to record content in the home network or the cloud, in real time. Users can enjoy a seamless experience as they switch between content stored locally and in the cloud

Because Multiscreen Cloud DVR is a Cisco Videoscape offer, you can roll out new services faster, with reduced operational complexity. It provides highly scalable and flexible content recording, packaging, and delivery to a variety of devices. And it provides a modular architecture, intelligent business logic, and automated workflow management to deliver all types of video services.

With Multiscreen Cloud DVR, you can:

- Grow your subscriber base and keep loyal customers happy with new capabilities and a better experience
- Remotely extend DVR services to existing customers without a costly truck roll, reducing OpEx
- Capture a broad range of content across MPEG, adaptive bit-rate (ABR), or other popular formats, directed either by the service provider or consumer
- Augment home DVRs with additional storage capacity in the cloud
- Upsell higher service tiers with more storage capacity and more simultaneous recordings, without upgrading customer hardware
- Build a modular and open foundational infrastructure for advanced applications and services
- Reuse the same video and metadata stream for multiple screens and delivery methods, with support for both ABR and MPEG transport stream (MPEG TS) streaming technologies, and a completely automated process for capturing broadcast content and repurposing it for time-shifted and cloud DVR services
- Optimize and monetize end-user experiences with powerful Cisco policy and session management capabilities
- Extend content security across STBs and unmanaged devices with integrated DRM and conditional access management, coupled with end-to-end security throughout the entire content lifetime
- Unify workflows and data center infrastructures for linear TV, video on demand, time-shift TV, and DVR, simplifying operations and lowering OpEx

Cisco Videoscape Video Everywhere Offer

The Cisco Videoscape Video Everywhere Offer is the ideal platform for launching new multiscreen experiences beyond the STB. It also serves as a foundation for the next generation of video experiences, which are personalized, synchronized, and social across screens.

The Cisco Videoscape Video Everywhere Offer provides industry-leading multiplatform security technology to provide the critical end-to-end content protection you need to monetize premium content and services across multiple screens. Video Everywhere also provides best-in-class content management and user-interface capabilities to enable consistent and synchronized experiences across all your subscribers' devices.

Cisco Videoscape Video Everywhere protects your investment with an open platform that allows you to continually evolve TV services with next-generation video experiences.

Like other Cisco Videoscape offers, Video Everywhere also includes a tightly integrated development roadmap. Because innovation cycles are very dynamic - continually integrating new encoding formats, devices, and operating systems - this helps your business respond with a short time to market.

Using Video Everywhere as your starting point for delivering unique and differentiated TV experiences will bring significant business benefits to your platform, including:

- A pre-integrated, easily deployed solution that speeds up your time to market
- An advanced user interface that you can easily customize to meet your multiscreen needs
- Comprehensive metadata, content management, business rules management, and content preparation to extend the value of your existing investments
- A unified back end that consolidates content workflow, processing, packaging, and delivery for reduced OpEx
- Increased average revenue per user (ARPU) and decreased subscriber turnover with new, compelling subscriber features
- ABR streaming to provide a high-quality viewing experience over unmanaged networks
- An open system that accepts any transcoded stream, delivers across any content delivery network (CDN), and supports APIs for third-party developers to create synchronized companion-screen applications
- The ability to apply network, service, application, and subscriber analytics to improve quality of service (QoS)

Your subscribers can also benefit from a paradigm shift in their TV experience. Through the Video Everywhere Offer, they will be able to:

- Receive dynamic contextual content on any screen
- Rapidly discover content with unified keyword global search and personalized recommendations from any source, across all customer devices
- Select on-demand content from an online catalog
- Use trick modes (pause, rewind, and fast forward) to view on-demand content
- Browse a unified user interface on all devices, including a 7-day program guide, full program synopses, "Now and Next" banner, and channel up and down navigation
- Use social TV applications to share and recommend content with friends

Cisco Videoscape IP Video Over Cable Offer

Cable operators want to give their customers more content choices and a more dynamic and interactive experience. At the same time, there are challenges in reclaiming analog spectrum and delivering video content more efficiently, at a lower cost, without having to undertake a massive upgrade of the existing subscriber base. Cisco Videoscape IP Video Over Cable provides a solution to all of these challenges.

You can deliver an advanced, interactive, IP-based user experience across your entire subscriber base. With the ability to access an IP video experience over DOCSIS 3, users can enjoy a more interactive user interface, contextual companion experiences, and the ability to watch their favorite content on more devices.

In addition, IP Video Over Cable enhances managed services by providing a unified back-end workflow for subscriber, content, and service management. It also allows you to use technologies such as IP multicast and ABR to improve session management, bandwidth utilization, and overall subscriber quality of experience. Ultimately, it provides you with a greater degree of control, reliability, and efficiency in your managed services offering.

With IP Video Over Cable, you can:

- Give subscribers an expanded choice of content and services, as well as interactive contextual experiences
- Empower subscribers to watch their favorite content on more managed devices and add unmanaged and companion devices
- Reclaim inefficient analog spectrum for new digital services
- Increase revenues with expanded linear, on-demand, and interactive offers
- Improve service velocity, with the ability to deliver new features and capabilities to your entire subscriber base
- Extend higher-tier, higher-value services across more subscribers and more client devices
- Deliver more video more efficiently
- Protect your investment with IP STBs that will have a long lifespan in your network. (Unlike digital-to-analog [DTA] converters, IP video STBs can continue to serve subscribers even as you deploy advanced services).

Cisco Videoscape Connected Video Gateway Offer

For existing pay-TV operators seeking to stay competitive, delivering unified video experiences has become essential, given the proliferation of companion devices in the home. But the operators need a cost-effective option that maximizes the value of the current broadcast infrastructure in which they have already invested heavily.

The Cisco Videoscape Connected Video Gateway Offer provides an efficient way to deliver next-generation experiences to subscriber homes. It lets you transparently distribute video content, metadata, and a much more dynamic and interactive user experience, **through a single entertainment hub**, to any IP-connected device in the home.

The Connected Video Gateway Offer makes excellent business sense because it lets you:

- Use your existing hybrid broadcast-IP infrastructure to deliver linear and on-demand content to the home, while using the customer's own IP network to forward it to multiple devices

- Extend your branded service to unmanaged devices in the home through a single managed gateway device, reducing customer premises equipment (CPE) CapEx
- Manage video, user interfaces, and metadata for a wide array of IP-connected devices - such as TVs, tablets, PCs, game consoles, and IP STBs - from a central point, streamlining operations and reducing OpEx
- Support full IP network delivery in the future without needing to purchase additional CPE
- Remotely monitor and troubleshoot all devices to improve operations and reduce costly service calls
- Measure audience usage to personalize your service and improve QoS

At the same time, your customers can enjoy a host of enhancements that will help keep them loyal to your platform. They will be able to:

- Watch linear and on-demand content on any IP-connected device according to their own schedules, whether inside the home or on the go
- Easily install and play new devices as part of a home-network ecosystem
- Discover content faster using search and personalized recommendations powered by the cloud
- View contextual web content on companion screens for a more immersive TV experience
- Use contextual applications such as social TV to share popular content with friends, vote, and more
- Enjoy whole-home high-definition (HD) DVR capabilities to watch stored content or time-shift TV services on any connected IP device
- Simultaneously watch and record different events using any of the available multiple tuners
- Pause live TV on one screen and continue watching on another
- Watch personal content - including home videos, photos, -and more - on the main TV screen through the home network

Cisco Videoscape Suites

Cisco Videoscape encompasses technologies that extend across the enhanced cloud, intelligent network, and immersive clients (Figure 5).

Figure 5. Cisco Videoscape Suites
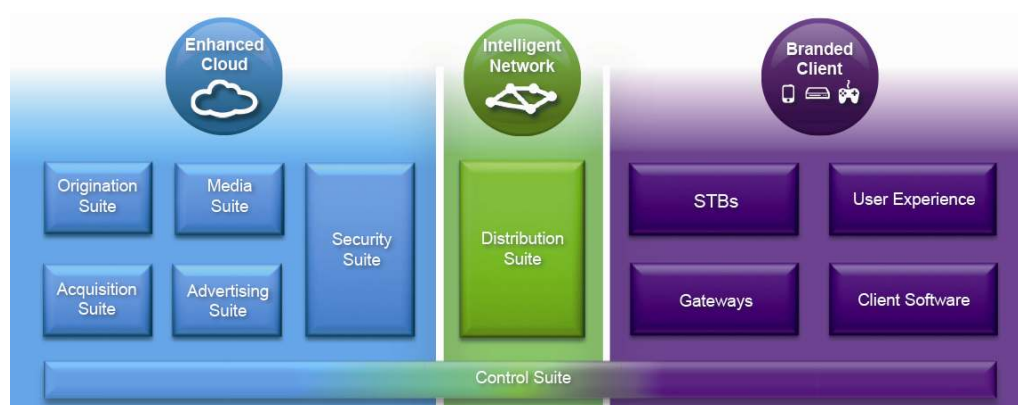
Cisco Videoscape technology suites available for individual deployment include:

- **Cisco Videoscape Origination Suite,** a contribution-grade IP media solution to support even the most high-profile, mission-critical video environments
- **Cisco Videoscape Media Suite,** a full lifecycle content management platform to efficiently manage and publish content across multiple screens
- **Cisco Videoscape Acquisition Suite,** which uses advanced encoding and transcoding tools to help you deliver real-time and on-demand media to any device, with the best video quality, based on the available bandwidth
- **Cisco Videoscape Advertising Suite,** which provides integrated solutions for managing, delivering, and measuring multiscreen advertising across broadcast and IP networks, for linear and on-demand content services and applications
- **Cisco Videoscape Security Suite,** a comprehensive conditional access and DRM security infrastructure for protecting TV services and premium content across multiple platforms and devices
- **Cisco Videoscape Distribution Suite,** an open, intelligent CDN platform for personalized media delivery across multiple screens, protocols, applications, and networks
- **Cisco Videoscape STB,** a wide selection of set-top boxes that deliver a more immersive video experience, ranging from whole home HD DVRs that offer eight simultaneous recordings to cost-efficient one-way decoders. Cisco has been a global leader in deployments of IP set-top boxes and has many industry firsts, including first two-way digital set-top box, first dual recording cable DVR, first multiroom quadrature amplitude modulation (QAM) DVR
- **Cisco Videoscape Gateways,** a single device that extends the network into the home and supports video, telephony, Internet, and WiFi services. Subscribers can access their home media, broadcast content, telephone, broadband, and Cisco Connected Life services using this one device. Because a Cisco Unified Gateway can transcode QAM to IP, you can leverage cost-effective thin clients throughout the home and support your subscribers' personal IP devices
- **Cisco Videoscape User Experience Suite,** which provides a dynamic, customized multiscreen experience for your subscribers, based on the award-winning Snowflake user interface
- **Cisco Videoscape Client Software,** including the market-leading Cisco Videoscape MediaHighway software solution
- **Cisco Videoscape Control Suite,** which provides advanced unified control of managed and unmanaged devices across both the IP and non-IP domains

Why Cisco?

The future of TV and media entertainment is here, powered by the cloud. With enhanced Cisco Videoscape capabilities, you can deliver unique and compelling multiscreen video experiences around the premium content that viewers crave and monetize those experiences in innovative ways.

Cisco Videoscape brings together expertise in building robust carrier-class cloud products with a flair for designing award-winning user experiences which implement each service provider's unique brand and vision. What makes Cisco and Cisco Videoscape unique is the ability to rapidly deliver powerful, scalable, deployable cloud-based services **combined with** the ability to engineer and deploy service provider specific experiences, at scale. Others may aspire to offer one capability or the other. Only Cisco offers both.

Only Cisco can provide:

- **A comprehensive IP video architecture** encompassing the enhanced cloud to expand your capabilities, aligned to your business needs, an intelligent network to optimize CapEx and OpEx, and an immersive-client approach to extend new experiences anytime, anywhere, on any device
- **An open architecture.** Cisco Videoscape has openness engineered into its foundations. For this comprehensive video architecture, open interfaces between components are key to delivering a modular and manageable system. Add Cisco's commitment to working with third parties to complement and enhance the system, along with flexibility in integrating components that our customers may have already deployed, and openness becomes a core capability of Cisco Videoscape
- **Industry-leading content and service protection for both managed and unmanaged devices** with Cisco VideoGuard, helping to ensure that you always have access to the best content and can deliver this content to more devices
- **The award-winning Cisco Videoscape Snowflake user experience,** which is immersive, intuitive, and unified across multiple screens
- **Unmatched cloud intelligence** that allows you to understand and capitalize on your customers' preferences, profiles, and interactions across multiple screens and applications
- **A premium quality of experience** that surpasses "best-effort" media delivery by drawing on embedded IP intelligence that extends across the cloud, network, and clients
- **Industry-leading integration and support services** that accelerate your time to market and improve operational efficiency
- **Investment protection** through a clear migration path that lets you develop and monetize new services now, while providing the foundation for advanced future capabilities
- **Proven industry leadership** providing innovative video back-office, CDN, Internet Protocol Television (IPTV), CPE, and data center implementations for many of the largest, most successful service providers in the world
- **A truly global network of service and support** across five continents, with teams that speak your language and understand your specific market needs

Cisco is ready to be your partner in this journey. For more information, visit http://www.cisco.com/go/videoscape.