Transform Your Network to Meet Tomorrow’s Demands
Cable providers worldwide face complex challenges as consumer demand for broadband and new services expands, requiring larger capital and operating investments. With worldwide bandwidth consumption growing at an average of 42 percent per year, you must explore new technologies to scale your networks and offer new, innovative experiences.

To help you meet these challenges, Cisco offers industry-leading video solutions that incorporate medianet technologies. A medianet represents an advanced, intelligent network optimized for video and rich media communications. It can help drive your video strategy for enterprises, consumers, and service providers.

Cisco, along with our partners, can support rich media with an end-to-end approach that takes advantage of deep expertise in IP networking, video, and consumer premises solutions. Our comprehensive solutions enable you to use existing bandwidth more efficiently, successfully expand bandwidth, and move into new markets for service delivery.

Cisco is your trusted partner for video, providing a proven and secure suite of end-to-end solutions supported by media-aware products, lifecycle services, and comprehensive network management systems.

Cisco’s cable solutions give you the means to deliver next-generation video, high-speed data, and VoIP services, while reducing costs and increasing service velocity.

By taking advantage of our heritage and comprehensive portfolio of video solutions, you will be positioned to better meet customer needs, grow revenue and profits, and meet competitive challenges.
The increasing complexity of delivering new services also calls for network management systems that quicken response to failures and problem calls, and lower operating costs—thus improving the customer experience and your profit line.

Cisco® products and technologies for subscriber-device monitoring, network management, and operations in broadband cable networks facilitate everything from preplanning high-speed data, voice, and broadband video deployments, through rollout, testing, ongoing monitoring, upgrades, and maintenance.

**Global Demand for Bandwidth**

- By 2012, Internet traffic will be 90 percent video, according to the Cisco Visual Networking Index—Forecast, 2007–2012.

- Starting in 2011, Internet-video-to-TV will generate more traffic than Internet-video-to-PC.

- VoD streams will surpass 7 billion per month in 2012, over 6 times the monthly amount in 2007.

- 55 percent of digital TV households will use HD in 2012, up from 34 percent in 2007.
Medianet Solutions

Transforming the end-user experience
Deliver the unique experience each customer wants

Media-aware IP NGN
Ensure the end-user experience

Virtualization
Manage complexity and scale

Monetization
Increase revenue and profits
A medianet is a network optimized for video and rich media that provides money- and time-saving efficiencies, facilitates rapid expansion of video offerings, and guarantees high-quality visual experiences on any device. A medianet also offers optimization across the end-to-end networks that video travels—enterprise, small business, service provider, and home networks. With its leadership, expertise, and partnerships across these segments, Cisco is uniquely positioned to provide the network that will deliver the services your customers want.

Cisco has integrated medianet technologies into its IP Next-Generation Network (IP NGN) framework. These technologies are media-aware, enabling you to offer more personal, social, and interactive consumer experiences—while providing the massive scalability needed for long-term growth.

The IP Network Layer
The basic transport capabilities needed to transmit video and other services over all parts of the cable operator’s network.

The Media Delivery and Control Layer
The video-aware capabilities and functions that enable the network to transmit video and other multimedia services in an efficient manner.

The Application Layer
Delivers the actual services that the customer purchases as part of their cable package.
Transforming the End-User Experience

Thanks to advances in digital technology, consumers have more communication and entertainment options than ever before. The resulting variety of digital devices and personalized content—combined with the more visual, interactive, and social experiences consumers seek—requires more sophisticated solutions and network deployments. People want more flexibility in where, how, and when they enjoy all these new communication and entertainment options.

In this section
- Connected Home and Multi-Screen Services
- IP Video/IPTV
- Advanced Set-top Boxes
Cisco offers a full line of intelligent customer premises equipment (CPE), including multimedia gateways (set-top boxes) and IP gateways, helping ensure the seamless delivery of video services throughout the home and enabling multi-room DVR, video delivery to PCs, home security and automation, and many other innovative services. Network intelligence is also needed to provide video-on-demand (VoD), catch-up TV, Internet video, and other services. The Cisco Content Delivery System (CDS) simultaneously enables both traditional on-demand services and a new generation of Internet services. The CDS is expressly built to deliver any content to any device in any location—from a single open delivery platform.

When the CDS is implemented in conjunction with Cisco’s intelligent CPE devices, including multimedia gateways and IP gateways, the combined system provides sophisticated multi-screen services (delivered inside or outside the home) while increasing efficiency by eliminating tuner dependencies and optimizing bandwidth utilization.

**Key Products**
- Multimedia gateways and set-top boxes (STBs)
- IP gateways, cable modems, and embedded media terminal adapters (EMTAs)
- Cisco Content Delivery System

**Services Enabled**
- DVR
- Network PVR
- N-screen
- Catch-up TV
- Home monitoring and security
As the quality and quantity of Internet-based video services continue to grow at a dramatic rate, more cable operators are looking to simplify access to this Internet content by enabling STBs to deliver IP television (IPTV) and thereby increase service velocity and provide access to more personal, social, and interactive Web 2.0 services.

Further, as you deliver faster, DOCSIS®-based high-speed data (HSD) services, you can use your current network to provide more sophisticated IP video services. A new service offering can be as simple as high-quality video delivered to PCs or other IP devices.

Cisco’s IP video solution uses the best-in-class Cisco uBR Family of cable modem termination systems (CMTSs), a full line of IP STBs and hybrid STBs, a converged IP NGN transport network, and the software intelligence to handle traditional MPEG video in conjunction with IP video. This standards-based solution fully protects investments in DOCSIS 3.0 infrastructure and deployed STBs to provide a flexible, scalable IP video solution.

Key Products
- IP and hybrid STBs
- Cisco uBR Family CMTSs, supporting DOCSIS 1.x, 2.0, and 3.0
- Middleware support for IP services
- Cisco CRS-1 Carrier Routing System, Cisco 7600 Series and ASR Family of routers

Services Enabled
- Gaming
- Internet video
- Personal video
- XoD
Advanced Set-Top Boxes

Cisco’s range of set-top solutions includes standard-definition, digital-only interactive models that support basic tier and VoD programming. Cisco’s PowerKEY® Conditional Access System provides the content security you rely on to protect revenue and services.

At the other end of the spectrum are sophisticated next-generation HD-DVRs that can securely distribute content throughout the home. Our goal is to help you address the increasingly divergent needs of your customer base, and provide the right set of capabilities at the right price, matched to the services offered.

Many features found in the full range of STBs are also optimized to take advantage of improved network performance, 1-GHz tuning, and MPEG4 decoding, for example. By offering such a range of features, Cisco provides the flexibility to create and deploy new services.

### Key Products
- Next-generation STBs
- PowerKEY Conditional Access System

### Services Enabled
- Multi-room DVR
- Internet video
- Web 2.0
- Social networking
- Personal content
The media-aware IP NGN framework incorporates the end-to-end cable infrastructure that you need to deliver richer consumer experiences. Cisco offers industry-leading innovation across that infrastructure—providing scalable and media-aware IP-transport tools to optimize bandwidth utilization in the hybrid fiber-coaxial (HFC) infrastructure, as well as the set of DOCSIS devices that deliver IP services over that HFC infrastructure. Together, these innovations allow cable operators to converge their services on a single infrastructure—for higher service velocity, more efficient operations, and massive scale.
Cisco Cable High-Speed Data (HSD) solutions offer innovative, standards-based DOCSIS approaches to broadband service activation and support. They help cable operators introduce service bundles that reduce customer turnover and help ensure positive, consistent user experiences.

With Cisco Cable HSD solutions, you can:

- Efficiently deliver tiered and basic Internet data services, along with digital video and voice, to residential and business customers.
- Give subscribers the power to download music and video at record speeds, while significantly reducing the cost per bit with DOCSIS 3.0 channel bonding solutions.
- Deploy Embedded Multimedia Terminal Adapters (EMTAs) and earn new revenue streams through digital voice services.
- Increase bandwidth and deploy new services immediately with efficient and cost-effective migration to full DOCSIS 3.0.
- Offer subscribers 50-Mbps, 100-Mbps, or faster downstream speeds, boosting services through your existing cable plant, with the ability to add this technology on a node-by-node basis.

Key Products
- Cisco uBR Family CMTS
- Cisco RF Gateway Series edge QAMs
- IP gateways, cable modems, and EMTAs

Services Enabled
- Ultra high-speed data
- Business services
- IP video
Cisco’s media-aware transport portfolio features all of the components necessary to build a complete, end-to-end transport network solution, enabling cable operators to meet the multiservice demands of today’s cable networks. Operating a single, converged transport infrastructure helps cable operators more effectively, efficiently, and reliably deliver high-quality services for applications in:

• Voice
• Video
• High-speed data
• Mobility

Complete transport network solutions are extensively tested inside Cisco’s many laboratories, where real-world challenges can be identified and addressed prior to deployment. Media-aware features in the portfolio look inside the packets and intelligently provide the packet treatment required by the service. This results in dramatically reduced network deployment time, cost, and operational complexity—while significantly increasing network reliability and scale and helping ensure the best possible subscriber experience.
Bandwidth Optimization

Regardless of the mix of services you plan to launch for future growth, the need to extract more capacity and performance from existing hybrid fiber-coaxial (HFC) bandwidth to support emerging, next-generation services becomes a critical issue in order to remain competitive.

Cisco provides a full suite of bandwidth optimization and expansion solutions. Every cable plant is different, and the ideal solution or solutions will vary based on plants and customer needs. Cisco can help you meet your needs in the most efficient manner possible by providing a full range of solutions, including:

- Optimization or expansion of HFC capacity
- A full suite of technologies to meet varied needs, including 1-GHz upgrades, analog reclamation, switched digital video (SDV), IP video with Variable Bit Rate (VBR), Fiber Deeper, trans-rating, and wireless offerings
- Wavelength-division multiplexing (WDM) support for Fiber Deeper HFC
- High-capacity, bidirectional traffic

Key Products

- Switched digital video (QAMs, SDV servers)
- Optical nodes
- Amplifiers
- Cisco Digital Content Manager (DCM)
- Cisco GS7000 optical nodes
- Cisco Prisma D-Pon
- GainMaker amplifiers
- WiMAX

Services Enabled

- More high-definition video
- More video on demand
- Ultra high-speed data
- IP video
- TelePresence
- Wireless video
Virtualization technologies enable you to deliver consumer services regardless of the physical location of consumers and the devices they are using to receive the services.

Cisco’s virtualization technologies fit into two categories: infrastructure virtualization and service virtualization. With infrastructure virtualization, a single network infrastructure can be used across multiple cable systems in order to reduce capital and operating expenses while speeding delivery of new services. Service virtualization, meanwhile, allows you to deliver services to different device types without the need to write new applications—providing both consumer flexibility and simplifying new service offerings.
As users demand more personalization and flexibility in their viewing, an increasing amount of content is being delivered through on-demand systems. For content on demand, the Cisco Content Delivery System (CDS) delivers a variety of on-demand services, including VoD, time-shift TV, barker channels, and Internet video services.

Traditionally, each system has been deployed in its own city or metropolitan area. Large cable operators can use the Cisco CDS in conjunction with an IP NGN transport infrastructure to build a Virtualized Video Infrastructure (VVI)—a single, unified on-demand system deployed on a national or international basis to intelligently distribute on-demand content wherever it is required. Such a system allows cable operators to ingest content only once, and distribute across the entire service area; to ease management and simplify upgrades; and to handle a combination of Internet and traditional MPEG content.
Cisco’s video solutions can help you increase revenue by:

- Earning more from existing services through subscriber growth or selling more bundles
- Generating revenue through new service offerings, incremental advertising, and the upselling of anchor services
- Reducing customer turnover

In short, you must use all these strategies to maximize revenues. Cisco offers a complete line of technologies that help increase revenue and average revenue per user (ARPU) across all services for cable operators worldwide.

In this section

- Advanced Advertising
- Business Services
- TelePresence (over DOCSIS)
Advanced Advertising

Cable networks in place today are excellent platforms for monetizing the delivery of advanced advertising. Thanks to the highly addressable nature of the millions of STBs already deployed, as well as new solutions that measure the viewership's habits and facilitate targeted advertisements, there are many new revenue opportunities in advanced advertising.

Digital ad insertion gives you the ability to increase ARPU by selling spots to local advertisers. Cisco’s flexible advertising solution can help:

- Increase revenues by delivering addressable advertising for both linear and nonlinear services (including SDV and VoD)
- Help target ad-zones in specific geographic areas or use SDV to precisely target advertisements based on demographic profiles
- Give valuable insight into the viewing habits of subscribers to help customize ad offerings
- Target ads to both TVs and IP devices

Key Products

- Cisco Digital Content Manager (DCM)
- Cisco Content Delivery System (CDS)
- Set-top boxes

Services Enabled

- Addressable advertising
- Revenue sharing with content providers
- Interactive advertising
Cisco Business Solutions offer a comprehensive approach to monetizing the emerging business service opportunity by enabling a powerful suite of managed services including voice, VPNs, Metro Ethernet, VLANs, security, and other services.

We can help you transparently deliver business services over your cable infrastructure on a reliable, simple, scalable, cost-effective, and flexible high-capacity network, designed to support advanced services.

**Key Products**
- Cisco Integrated Services Routers (at the customer premises)
- Cisco Unified Communications

**Services Enabled**
- VPN
- Managed voice
- Intrusion detection
- Firewall
TelePresence (over DOCSIS)

Provide a live, face-to-face meeting experience over the network, empowering your customers to interact and collaborate like never before. All businesses strive to save money and increase productivity. Cisco TelePresence delivers a unique, “in-person” experience without the travel, saving time as well as money. Cisco TelePresence offers you another way to monetize your investment in the DOCSIS network and differentiate your business from competitors who lack the network capacity to deliver TelePresence.

Key Products

• Cisco TelePresence System 1000 and 3000
• Cisco uBR10012 CMTS with DOCSIS 3.0
• TelePresence

Services Enabled

• Addressable advertising
• Revenue sharing with content providers
• Interactive advertising
When you choose Cisco, you're choosing a proven partner capable of delivering an end-to-end, comprehensive suite of video, data and voice solutions and a path to growth and cost-efficiency. We can help you deliver services and experiences your customers want, expand your offerings, and get the most from your infrastructure.

To learn more, visit cisco.com/go/cable or contact your Cisco account manager