Point of View

Internet Video: New Revenue Opportunity for Telecommunications and Cable Providers

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Cisco's Internet Business Solutions Group (IBSG) has undertaken engagements with major service providers (SPs) worldwide to explore new ways to create profitable revenue from the glut of Internet video traffic currently flooding their networks. This is one of two new Point of View papers in which we discuss a "two-sided business model" to help service providers derive new video revenue from both consumers and business customers. This paper focuses on how service providers can increase revenues from both sides by improving the quality of video delivery. As Internet video becomes mainstream, we believe there will be incremental opportunities for service providers offering services such as precision advertising, multiscreen content delivery, and so forth. The analysis and quantification of those latest services is the subject of a complementary Cisco IBSG Point of View paper titled "Exploring Two-Sided Business Models for Service Providers: Creating Profitability Through Innovation."

Executive Summary

Internet-based video consumption is booming all over the world, but most telecommunications operators[1] are not benefiting from it. They must sustain the infrastructure costs needed to support this fast-growing traffic, but they have not been able to create associated incremental revenues. Service providers are trying to find ways to turn this potential threat into an opportunity by generating new, profitable revenue streams from the rise of Internet video.

Cisco IBSG suggests that service providers have the opportunity to turn Internet video costs into profits, initially through a two-sided business model that offers:

1. High-quality content delivery services to content providers
2. A "TV-ready broadband" service for consumers that delivers Internet video with quality equivalent to that of traditional television

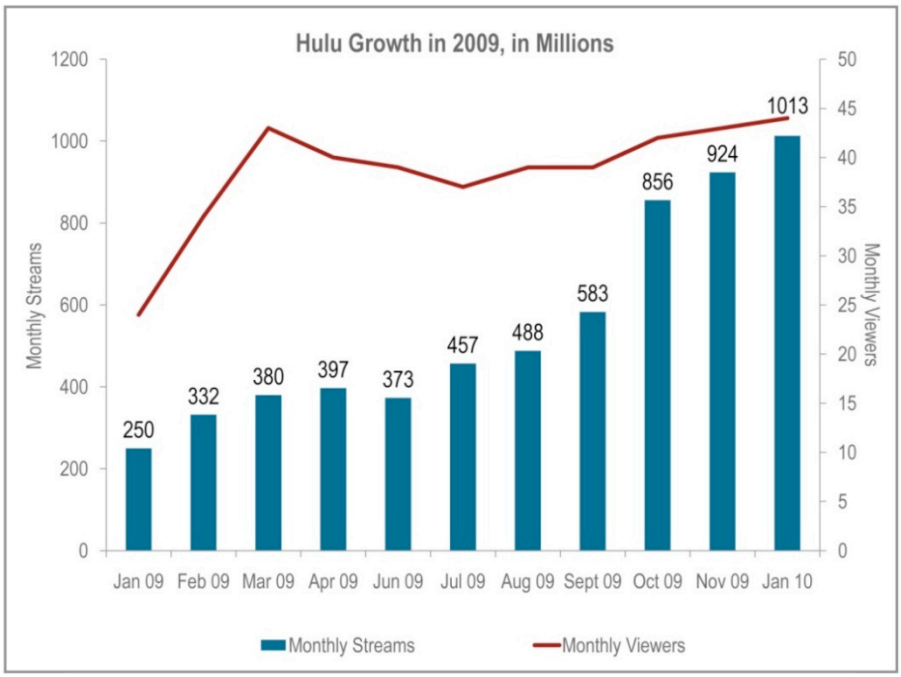
Cisco IBSG analysis shows that access-based telecommunications operators[2] can develop a highly profitable business by offering these two services together, with expected earnings before interest, taxes, depreciation, and amortization (EBITDA) margins above 70 percent. Today, Internet video accounts for less than 2 percent of the total time Americans spend watching video. But with more sophisticated video services coming from the Internet, and with Internet-connected TVs, the time consumers spend watching Internet video could rise significantly—potentially reaching 50 percent of their overall video viewing time in 10 to 15 years.[3] Now is the time for service providers to begin realizing the opportunity of Internet video.

Fast Growth in Internet Video Is a Challenge for Service Providers

During the booming Internet video[4] growth of the last few years, important Internet players such as Google, Netflix, and Amazon have developed substantial Internet video businesses. Some traditional media companies and broadcasters, such as Hulu and the BBC, have also

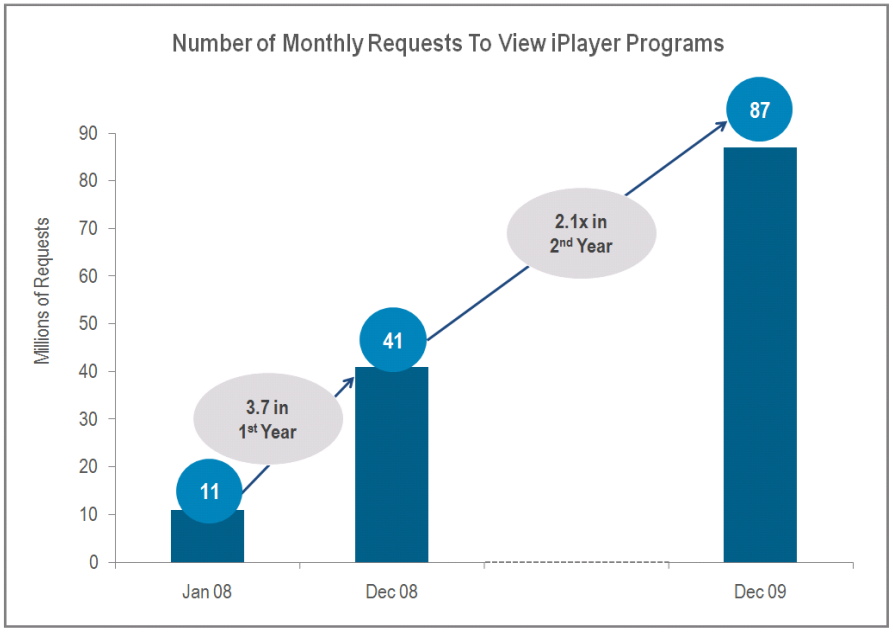
built successful Internet video businesses, reaching audiences as large as a million viewers—audiences that start to become comparable to those of traditional television (see Figures 1 and 2).

Figure 1. Hulu's Growth Has Been Substantial in Both Number of Viewers and Video Streams



Source: comScore, February 2010

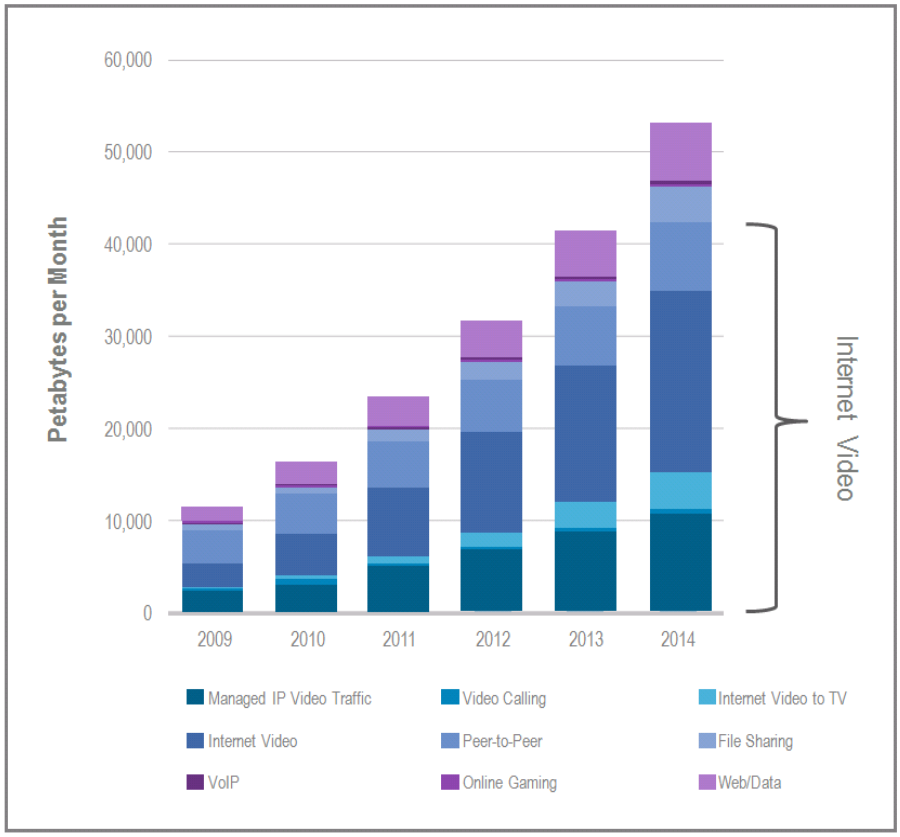
Figure 2. BBC iPlayer: Monthly Requests in the U.K. Grew Eightfold in First Two Years of Service



Source: Cisco IBSG analysis of data from BBC press releases, January 2008 - January 2010

The initial success of these services is, in our opinion, an indication of the growth Internet video will enjoy once it is easily available on mainstream TV sets. By the beginning of 2010, there were clear indications that Internet-based video services are becoming increasingly accessible from mainstream TVs via products from companies such as Apple, Cisco, Google, LG, Microsoft, Nintendo, Samsung, Sony, and others. Cisco estimates that by 2014, video will represent 80 percent of consumer Internet traffic (see Figure 3).

Figure 3. Video Will Drive 80 Percent of Consumer Internet Traffic by 2014



Source: Cisco Visual Networking Index, 2010

Many telecommunications executives see the rise of Internet video as a nightmare for their businesses. They used to manage companies that could bill for every minute of voice transported, every bit of data carried, and every TV channel delivered. Now they are managing companies that transport more and more Internet traffic without any associated incremental revenues. At current traffic growth rates, service provider executives fear their companies will reach zero profitability from Internet access, as marginal revenues approach marginal costs per unit of traffic transported. Additionally, service providers are threatened by the potential of service substitution, where their established, revenue-generating TV services might be partially substituted by Internet over-the-top (OTT) providers for content that can be consumed on-demand by end customers. For this reason, operators in some countries are imposing traffic caps on their customers to avoid the negative impact of the added transport costs on their bottom line.

All operators are trying to figure out new ways to generate profitable revenues from the rise of Internet video—thereby turning this threat into an opportunity.

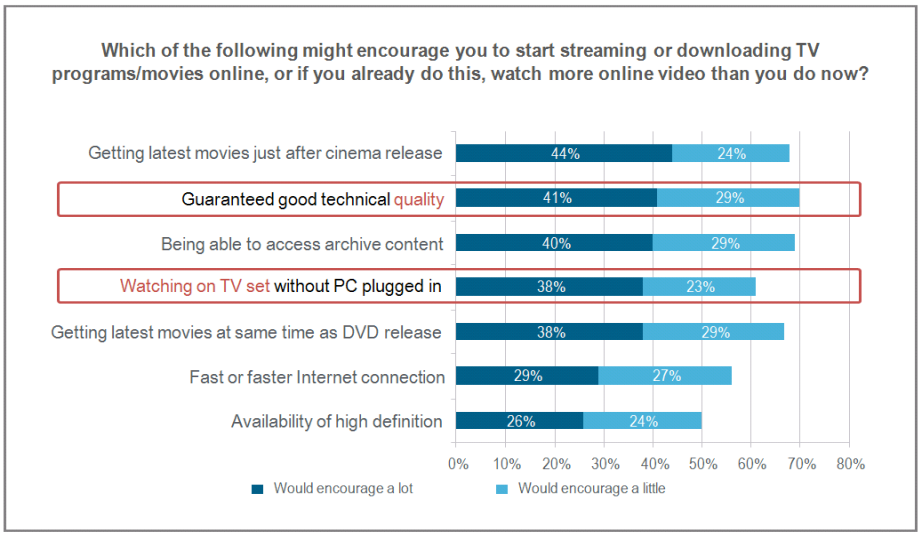
Cisco IBSG believes that telecommunications operators and content providers should start working together to develop two-sided business models that bring content-based services to consumers via the Internet infrastructure. This is starting to happen in the United Kingdom—for example, with the Canvas consortium, created by content providers and broadcasters BBC, ITV, Channel 4, and Five, and by service providers BT, Arqiva, and TalkTalk.

Turning the Internet Video Threat into a Revenue Opportunity

Cisco IBSG has worked with a number of service providers to develop long-term strategies to capture the opportunities created by two fundamental market trends:

1. **Content providers are willing to pay for quality delivery of their content to consumers over the Internet.** Actually, they are already doing so by buying content delivery services from traditional content delivery network (CDN) providers such as Akamai, Limelight Networks, and Level 3 Communications. In the difficult economic environment of 2009, a company like Akamai, for example, experienced substantial revenue growth of 9 percent year over year, with normalized net income representing 36 percent of its revenues.[5]
2. **End users are willing to watch even more video content coming from the Internet,** as the growth of Internet video services shows, **and are probably willing to pay for watching it on their TVs**. Research studies show that consumers would start or increase viewing online TV programs and movies if they could (1) have guaranteed good technical quality and (2) watch content on their TVs without having to connect a PC (see Figure 4).

Figure 4. Users Want Internet Video Delivered with Good Quality Directly to Their TVs



Source: Olswang Convergence Consumer Survey, November 2008

Moreover, a 2008 Cisco IBSG "Connected Life Market Watch" study surveyed thousands of broadband consumers in North America, Europe, and Asia, asking how much consumers

would pay for a service enabling them to view content on multiple devices, anywhere, anytime. Forty-two percent of the people surveyed would be willing to pay about US$5 for the service; even at $10 per month, 25 percent of respondents said they would be willing to pay. While the service analyzed in the survey is not exactly "bringing Internet video to TV," it is still an indication of consumer willingness to associate a dollar value to a service that would allow them to watch Internet video content on their TVs in full "broadcast-like" quality. The 2010 Cisco IBSG Connected Life Market Watch study in the United Kingdom confirmed this: 45 percent of surveyed U.K. broadband subscribers have either strong or significant interest in Internet video to TV.

Telecommunications operators have an opportunity to ride these two market trends by offering a two-pronged approach to improved quality in content delivery:

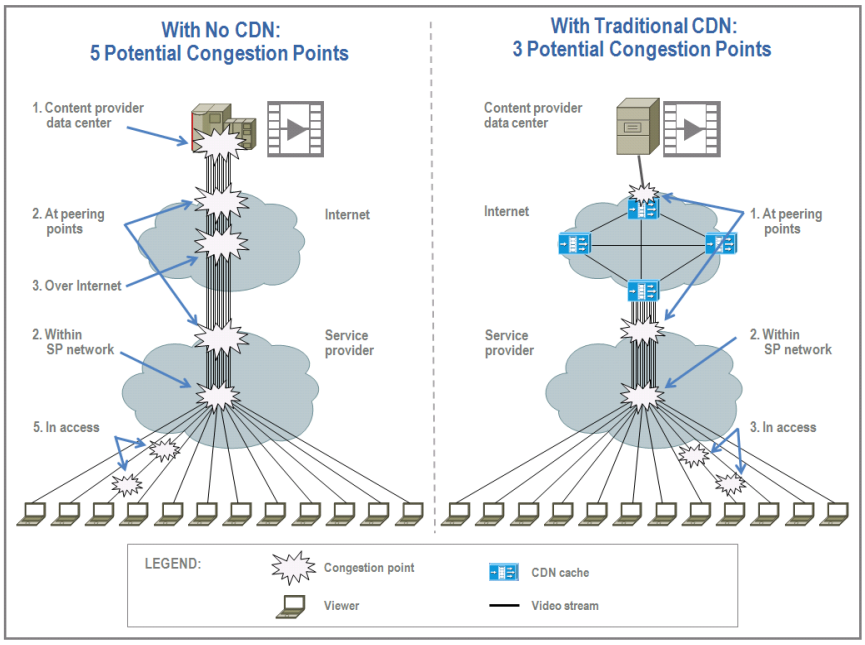
- Step 1: **Content delivery services** to content providers
- Step 2: **"TV-ready broadband"** to consumers

We will now take a closer look at both of these options, demonstrating that they can provide the best opportunity for new revenues when used together.

Step 1: Introduce Content Delivery Services on the SP Footprint

From the content provider's standpoint, CDN improves the quality of content delivery by bypassing congestion points between the emission point (usually the content provider's data center) and the receiving point (the final viewer). Traditional CDN services allow content providers to bypass Internet congestion points, but do not allow them to bypass potential congestion points within the service provider network[6] that provide Internet access to consumers, as schematically shown on the right side of Figure 5.

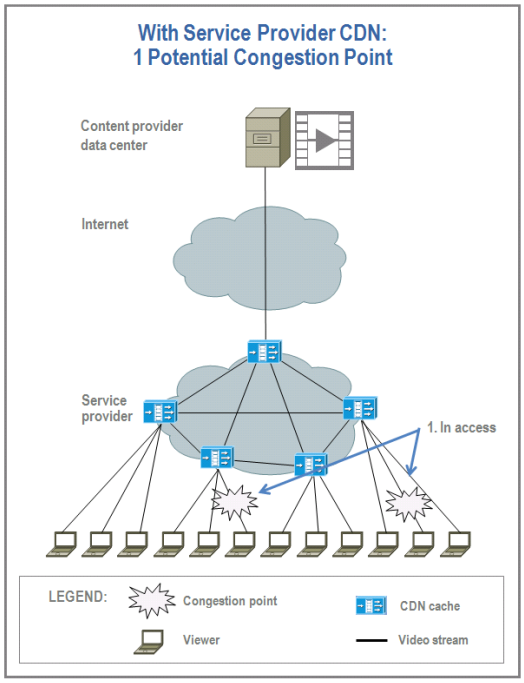
Figure 5. Traditional CDN (Right) Provides Advantages over Content Without CDN (Left) by Bypassing Internet Congestion Points, but Not Those Within the SP Network



Source: Cisco IBSG, 2010

Content delivery services from telecommunications operators have one important, sustainable strategic advantage over the same services offered by traditional CDN providers: they are delivered by CDN caches placed much closer to the final viewer, thus reducing the probability of having congestion issues over the delivery path, as schematically shown in Figure 6.

Figure 6. SP-Delivered CDN Improves Internet Delivery by Locating Content Caches Closer to the End User than Traditional CDN



Source: Cisco IBSG, 2010

With potentially hundreds of thousands, or even millions, of video streams being delivered simultaneously in one region or country, having content caches closer to the final viewer is a strategic advantage over established, traditional CDN providers. While operators may have only a national or regional footprint as compared to the global footprint of traditional CDN providers, typically this will not be a strategic disadvantage because most video content is specific to a particular country or language. For example, 100 percent of the video streams on both BBC iPlayer and Hulu are delivered to their target geographies—the United Kingdom and the United States, respectively—because of both language and rights issues. In Europe, most broadcasters experimenting with Internet video (through catch-up TV and start-over services) are focusing on their own target geography. Over time, telecommunications operators can develop partnerships to interconnect their content delivery services, offering a broader footprint if needed.

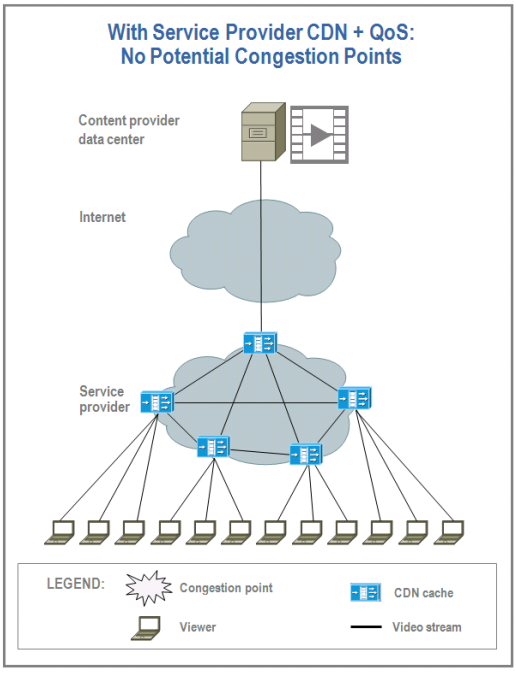
Step 2: Enable QoS in Access, and Market It as "TV-Ready Broadband"

The second fundamental step operators should take is to enable quality of service (QoS) in access and market it as "TV-ready broadband": a broadband line that guarantees a predefined quality for the delivery of content between the operator's content delivery caches and customer viewing devices (TVs, computers, game consoles, set-top boxes, etc.).[7] The

actual result of "TV-ready broadband" is to give the end customer a "TV-like viewing experience" when watching videos coming from the Internet: full-screen, crystal-clear, high-quality videos shown on their TVs, with no interruptions for rebuffering or other technical reasons.

Service providers are in the unique position of being able to address all potential Internet congestion points in the delivery of video content over the Internet, bringing them from 5 to zero, as shown in Figures 5, 6, and 7.

Figure 7. Quality of Service in Access, Added to SP-Provided CDN, Eliminates All Potential Congestion Points



Source: Cisco IBSG, 2010

Two-Sided Business Model Delivers Maximum Opportunity

We propose a two-sided business model where operators serve two different customer types and two different customer needs with two different services. Content delivery services help content providers scale the distribution of their content, while "TV-ready broadband" helps final consumers watch video content coming from the Internet in full quality.

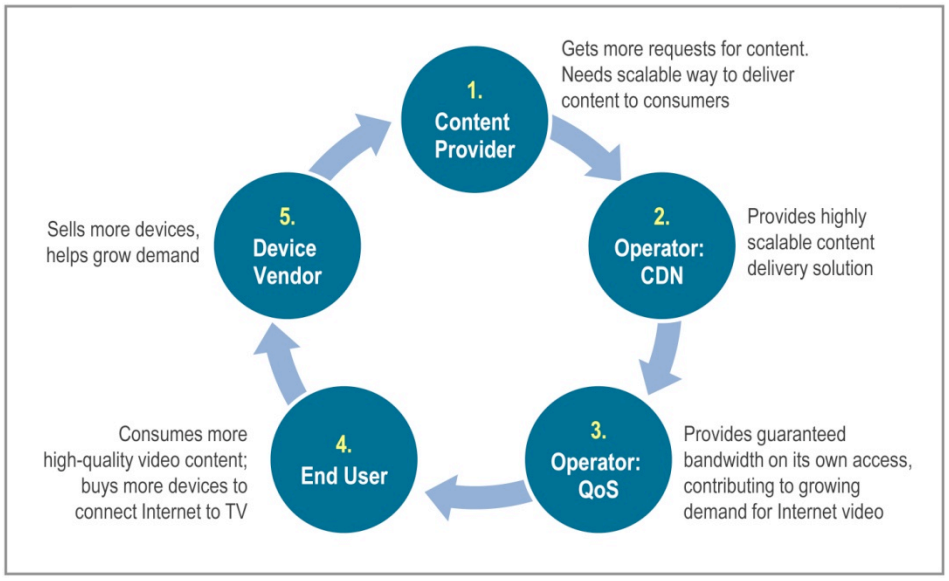
Service providers should offer content delivery services with a set of features comparable to those of established CDN providers. These should include origin storage, transcoding and transrating, security tools, policing tools, and customer analytics, in addition to the actual content delivery service. Pricing for all those services should be aligned with actual practices in the industry.[8] In addition, SPs could complement their CDN services with geo-location information, especially when integrated with mobile broadband access.

Guaranteed bandwidth—QoS between content caches and end customers—should be embedded into higher-speed broadband lines and then marketed as "TV-ready broadband." The business rationale behind this recommendation comes from Cisco IBSG's

experience that higher-speed broadband customers are, in most countries, a small minority of total broadband customers, paying an average premium 30 percent greater than that of entry-level broadband customers. The majority of consumers do not buy higher-speed broadband lines because they consider lower-speed broadband sufficient for their Internet needs. Promoting higher-speed broadband lines as "TV-ready broadband" will give consumers one important reason for migrating their lower-speed broadband lines to higher-speed (or, in case they do not have broadband already, for adopting it directly at higher speed), thus increasing operator average revenue per user (ARPU) substantially.

By combining content delivery services and guaranteed access bandwidth (QoS) for "TV-ready broadband," operators can become ideal enablement partners for both content providers and vendors of Internet-attached video devices. These service providers are well-positioned to orchestrate development of the nascent Internet-video-to-TV market via co-marketing campaigns and co-promotions of products and services (see Figure 8).

Figure 8. The Virtuous Circle of Content Distribution Plus Guaranteed Bandwidth in Access



Source: Cisco IBSG, 2010

Business Case for Incremental Revenues

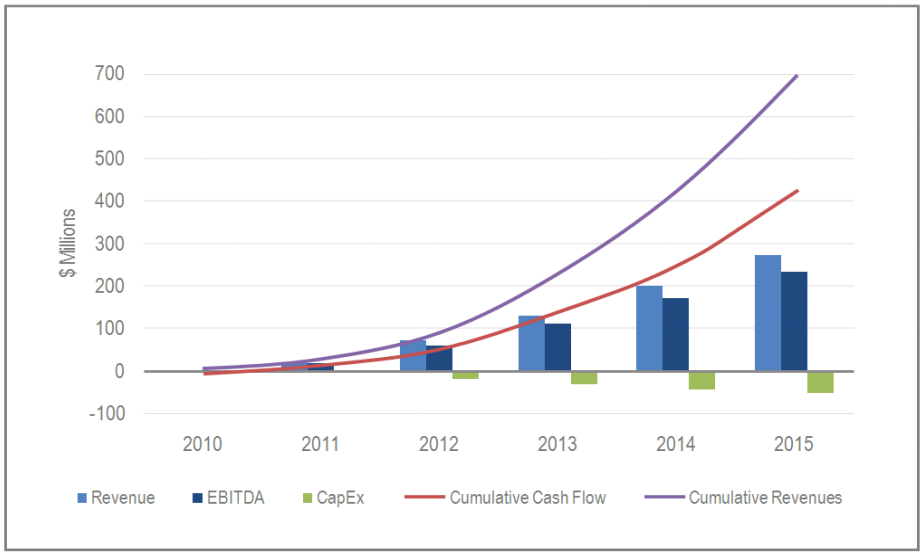
Cisco IBSG's Service Provider Practice has been working with multiple clients to analyze the potential of the proposed two-sided business model. From this work with customers, we conservatively estimate that operators can achieve the following results in a five-year time frame:

1. **Capture 20 percent to 30 percent market share for Internet video content delivery services** in their specific target market. This share target was considered realistic by multiple service providers, as operators launching the service now will have to gain share from established content delivery providers.
2. **Convert one-third of broadband customers to "TV-ready broadband."** Most forecasts show that about two-thirds of the broadband population in Western

countries will have their TVs connected to the Internet by 2015. IBSG's own Connected Life Market Watch studies from 2008 and 2010 (cited above) indicate that between 25 percent and 45 percent of broadband subscribers have an interest in watching Internet video on TV, based on various pricing schemes. Our recommendation to embed "TV-ready broadband" functionality into higher-speed broadband lines assumes that this service would have the same price premium as higher-speed broadband lines versus the lowest-speed broadband lines: about 30 percent in the average Western country (approximately $7 per month).[9] The important benefit to service providers would be to accelerate the migration of their broadband customers toward higher-speed broadband lines.

Our work with service providers shows that a hypothetical wireline operator[10] with 10 million broadband customers in a highly developed telecommunications country could convert more than 30 percent of those customers to "TV-ready broadband," generating cumulative revenues of about $700 million in the 2010-2015 time frame, starting from zero revenues in 2010 (see Figure 9).

Figure 9. Business Case Financials for Two-Sided Business Model



Source: Cisco IBSG, 2010

About $420 million of those cumulative revenues would be generated by the "TV-enabled broadband" migration, while the remaining $280 million would result from the content delivery service itself.

The level of investment (CapEx) required to develop this business would be between 15 percent and 30 percent of total cumulative revenues generated, depending on the transport capacity already available to the service provider in its network, with marginal up-front investment needed to start the business. Operating costs (OpEx) would be less than 20 percent of revenues for an established operator with sales, marketing, and administrative processes already in place.

Cisco IBSG's client work shows that infrastructure-based telecommunications operators (incumbent operators, cable operators, alternative operators with owned or unbundled access infrastructure) could generate EBITDA margins of more than 70 percent by offering content delivery services combined with "TV-ready broadband." This excellent profitability margin results from developing an incremental business that runs atop existing infrastructure, with operations in place.

In addition to their strong current revenue and profit potential, we believe that content delivery plus "TV-ready broadband" provide a strong platform for future innovative applications that service providers can offer within the two-sided business model.

Access-infrastructure-based operators could also play an important role in further developing the Internet video market by wholesaling content delivery and "TV-ready broadband" services to alternative operators who lack the capability and scale to deploy these services on their own.

Our work with clients shows that the wholesale opportunity, adjusted for common wholesale volume discounting, has revenue and profitability patterns similar to those presented for the retail business.

Conclusions

Internet video is the future of the Internet. Within five years, 80 percent of Internet traffic will be video-based. Telecommunications and cable operators should act now to become the enabling platform for delivering TV-quality video streams from the Internet to consumers, regardless of whether they watch it on their computers, on their TVs, or on their mobile devices.

Content delivery services, combined with QoS on the access line, are the two building blocks that, if implemented properly, will enable operators to develop a sustainable, profitable, and differentiated business for themselves, while driving development of the Internet video delivery industry. With their own content delivery infrastructure in place, operators will be in position to explore and develop new services based on this infrastructure.

Operators should position themselves as the enablement platform for this nascent market. They should collaborate with media companies, broadcasters, independent content producers, and TV/CPE manufacturers to build value for end customers—and a profitable new revenue stream for themselves.

For more information about service provider opportunities in Internet video, please contact:

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Endnotes

1. In this paper, we use the terms "telecommunications operator" or "service provider" to mean any provider of Internet access service, whether a traditional telecommunications operator or a cable operator.
2. With the term "access-based telecommunications operators," we mean any service provider able to control its access infrastructure, either because it owns it (incumbent operators, cable operators, challengers with alternative access network infrastructure, etc.) or because it uses its access infrastructure under a ULL (unbundling of the local loop) agreement.
3. Cisco IBSG analysis of Nielsen report, February 2009.
4. Internet video: user-generated or professionally produced video content, delivered to end customers via the Internet, and watched via Internet-attached devices such as computers, TVs, phones, music players, or game devices.
5. Akamai Annual Report, 2009.
6. The exception to this occurs when the service provider allows a traditional CDN provider to install its content caches into its network. In that case, the service provider should contract a form of compensation from the CDN provider.
7. Some operators will need to upgrade their access network to be able to deliver "TV-ready broadband."
8. As of the end of 2009, the pure delivery part of content delivery services is priced between $0.03/GB and $0.30/GB, based on actual total monthly volumes.
9. This price is in line with the price ranges tested in the Connected Life Market Watch study of 2008.
10. Either cable or incumbent telecommunications operator.

More Information

Cisco Internet Business Solutions Group (IBSG), the company's global consultancy, helps CXOs from the world's largest public and private organizations solve critical business challenges. By connecting strategy, process, and technology, Cisco IBSG industry experts enable customers to turn visionary ideas into value.

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