Has Video Calling Finally Arrived?

by Robert Rosenberg, The Insight Research Corporation

AT&T launched a commercial videophone service in 1970. It didn't catch on. Will today's video phone services fare any better?

Video telephony – video calling using a PC, an IP-based videophone or a 3G-enabled mobile phone – has emerged in the last few years as an option, if not an everyday occurrence, for consumers with high-speed broadband. Computer-based applications like Skype Video and Apple iChat have begun to push video telephony into the public consciousness. But will "normal" phone service, as provided by telephone carriers to their residential customers, ever include video?

To understand the answer to this question – which we think is "yes" – it is important to understand residential video telephony as one of a group of new IP-based services that carriers are beginning to deploy. For several years, service providers have been evolving from circuit-switched to IP-based packet-switched infrastructures. So far, they have been focusing on transport and access. Only now are enhanced services like video telephony being developed to take advantage of the new IP infrastructure.

IP service revenues make up a tiny proportion of total service provider revenues – less than 1 percent – and we expect them to remain relatively small for the next few years. But these applications are still very significant. Carriers see them as a way to begin migrating to fully-convergent IP-based networks and services. Some of them view the highly personalized services that IP enables as the ultimate "sticky" applications that will stem the tide of customer churn. Other carriers desire new, affordable service applications that will bring additional revenue streams. And all carriers are looking for new ways to enhance their service suites, which are rapidly becoming commoditized.

The New Set of IP Services

The potential number of new IP services that will provide value to businesses and consumers is as vast as the imagination – though identifying the needs of the market tends to be more difficult.

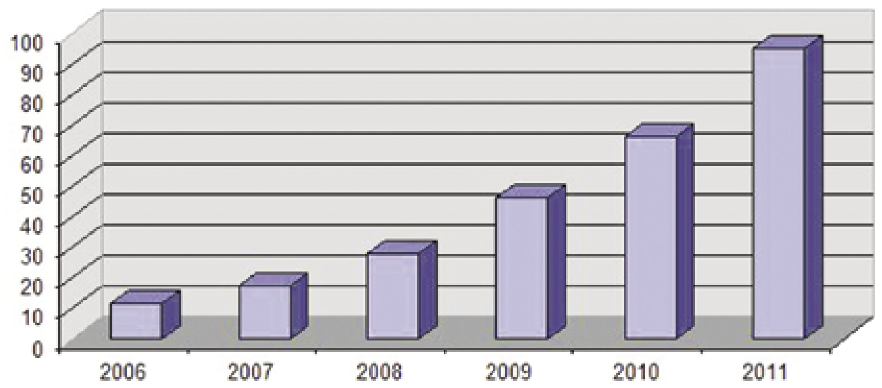
Today, the six predominant IP services hosted by service providers are:

- Residential Video Telephony, which enables video calling.
- Fixed Mobile Convergence, which lets callers use the same handset in licensed wireless public networks as well as unlicensed wireless private networks indoors.
- File Sharing Services, which involve the exchange of audio and video files.
- Streaming Services, which display live and on-demand audio and video on PCs, personal digital assistants (PDAs), or 3G-enabled mobile phones.
- Location Based Services, which target the user's physical location through global positioning or other means in order to deliver user-specific services like local advertising or restaurant search.
- Presence Based Services, which link all the users' communication modes together and show how best to reach him at any moment.

These are the IP services that will be extensively deployed over next five years, because they are already demonstrating revenue-generating potential and they are solidly backed by industry bodies and associations. These services also use open standards, offering operators flexibility in implementation without having to worry about interoperability. They may also be implemented as service enablers or components for more complex services.

Figure 1 below shows our combined forecasts for these six services.

Figure 1: Worldwide IP Services Market, 2006-2011 ($Billions)



Revenues include residential video telephony, fixed mobile convergence, file sharing/downloading services, audio/video streaming services, location-based services and presence-based services.

Worldwide, we expect the market to increase from $11.6 billion in 2006 to about $94.8 billion in 2011. This growth will far eclipse the growth of VoIP revenues, since VoIP is likely to be heavily discounted – in fact, for all intents and purposes, we believe VoIP will be given away, especially in the wireline environment. With free PC-based VoIP services offered by Skype, Yahoo!, Google, and others, as well as low unlimited fixed-line VoIP plans, basic voice has become a commodity. Service providers will focus on higher-value and higher-revenue generating IP services.

Will Users Accept Video Telephony?

From the user's point of view, telephones have changed very little over time. Although the technology in the network has been completely transformed, today's telephone interface would be instantly recognizable to anyone returning from, say, a fifty-year trip to a distant planet. The most noticeable difference would be the replacement of the rotary by push buttons.

But despite its durability, the traditional telephone interface is not well adapted for human communication. We are primarily visual, rather than auditory, creatures. Seeing people is how we understand our world. We watch other people's body language for cues in conversation – when to ask a question, when to hold back and wait.

As a communications medium, therefore, video telephony has the potential to be vastly superior to voice-only telephony. Users' anxieties about loss of privacy are likely to recede in the face of videophones' demonstrable benefits. We are confident that video telephony's impact on communications will be comparable to that of the Internet, and that it will substantively change the ways in which people interact over long distances.

Doubters point to AT&T's ill-fated Picturephone service in the 1970s as evidence that users will not accept video telephony. But what users rejected in the 1970s was the cost and cumbersomeness of the service – and the fact that they had no one to call. A communications service is of little use until there are other people to communicate with.

The Pieces of the Puzzle

In order for residential video telephony service to be widely accepted, it must be:

- Affordable for a large proportion of consumers.
- Of high enough quality that the technology does not distract from the conversation.
- As easy to use as today's telephones.
- Available to a large proportion of consumers.
- Marketed by companies that consumers know and trust – preferably, by companies they already have relationships with.

Today, consumers can find video telephony services that are affordable, high-quality, or easy to use. However, it is rare to find a service that combines all three of these qualities. And even if they identify an acceptable service, consumers may be discouraged by the fact that their friends and relatives either don't have access to the broadband speeds necessary for video telephony, or subscribe to a different and incompatible service.

But within the next two to three years, all of the necessary pieces of the puzzle will begin falling into place. Carriers are in the process of rolling out high-speed IP broadband networks, both wireline and wireless, in order to deliver video entertainment. These networks will soon be widely enough deployed that the carriers can begin selling additional services, including video telephony, on a large scale without overloading their capacity. In the end, video telephony may prove more interesting to consumers than the video entertainment that is driving the network buildout.

Mass market potential will make it economical for carriers to sell high-quality, easy-to-use video telephony services at prices that most consumers can afford. And since network standards for video telephony have been in place for years, carriers can assure their subscribers of being able to hold video conversations with friends and family who are on other carriers' networks, or who are using different types of equipment.

Wireless Carriers Will Lead the Way

Wireless carriers have been in the forefront of offering IP services, and will probably be the first to offer video telephony on a large scale. There are several reasons for this.

First, they tend to move faster than wireline providers in terms of understanding what customers want and making the investments needed to provide those services. For example, they made the leap from 2G to 3G networks in less than a decade. Second, their embrace of open standards has made interoperability issues less formidable than for their wireline counterparts. Open standards are allowing wireless subscribers to reap the benefits of rich services developed by a large number of vendors.

Wireless operators have other advantages, too. They have more experience with and greater control over the content in their networks. They also have solid billing platforms, which reassure content providers of reliable and stable revenues from content provided to wireless subscribers. Content providers are therefore more comfortable with the wireless domain.

Finally, the IP multimedia subsystem (IMS) paradigm calls for packetized services and applications to be network-agnostic. This has encouraged the introduction of sophisticated access protocols like high-speed packet data access (HSPDA) and enhanced data rates for GSM evolution (EDGE). The drive is led primarily by East Asian and European operators, with North American operators catching up.

Wireline Carriers Aren't Far Behind

But though wireline carriers may move more slowly, they face the same demand for services and essentially the same network economics faced by their wireless counterparts. They are also eager to recoup the costs of the investments they have made in their networks, and aware of the danger of allowing new competitors to gain the first-mover advantage in this market.

Wireline carriers can also expect operational and infrastructure savings from deploying video telephony and other IP-based services. Many incumbent carriers are starting by implementing IP-based services on an overlay network. This approach allows them to avoid replacing circuit-switched network elements, whose costs are sunk and whose ongoing operational expenses are minimal.

In an overlay network scenario, the packet-switched network is isolated from the circuit-switched network, and the two are connected via a gateway. Web-based applications can control the public switched telephone network through this gateway. The overlay network preserves the wireline carrier's investment while reducing risk.

Equipment is also being developed to allow wireline carriers to run IP applications directly – not only infrastructure elements like gateways and softswitches, but also IP-based application servers, which are designed to deliver actual revenue-generating services for carriers. To date, most of the appeal of softswitch architectures has been based on cost reduction, since applications that used to be run on circuit-switched networks are believed to be much less expensive to implement on IP networks.

Now, the creation of enhanced services like video telephony is becoming strategically important for many carriers. As a result, we expect to see many carriers introducing video telephony offerings, and marketing them aggressively, over the next few years. And as carriers market the services, we can expect to see consumer adoption rates starting to pick up significantly.

About the Author: Robert Rosenberg is the president of The Insight Research Corporation (www.insight-corp.com), a telecom industry research and consulting firm based in Boonton, New Jersey. In addition to examining trends in IP services, Insight's current research focus includes analysis of fixed-mobile convergence, telecommunications usage by the health care industry and wireless broadband using the TV spectrum.

Examples of Personal Video Telephony Services

Wireless Carriers

NTT DoCoMo (www.nttdocomo.com), based in Japan and the largest wireless carrier in the world, offers both domestic and international video calling on some types of mobile phones. Features of the service include a text-based message header, video voicemail, multipoint video conference calls, and the ability to transfer the video portion of the call to a personal computer.

Rogers Wireless (www.rogers.com), Canada's largest wireless carrier, introduced the first North American wireless video calling service in April. Currently, the service is available only in limited geographical areas.

AT&T Wireless (www.att.com) recently launched a "video share" service on some types of mobile phones. Less functional than a true video calling service, Video Share adds one-way, live streaming video feeds to a two-way voice conversation.

Wireline Carriers

BT (www.bt.com, formerly British Telecom) offers a video calling service. Users can either purchase BT videophones with a 3-inch video screen and high-definition audio, or use a webcam with the BT Softphone application on their computers. The service works over any broadband connection of 512 Kbps or higher, not just over BT's network.

France Telecom (www.francetelecom.com) offers the "MaLigne Visio" video telephony service, along with a videophone and modem. The videophone can also be used in voice-only mode.

Non-Carrier Videophone Services

WorldGate (www.ojophone.com) sells the Ojo Phone videophone, which attaches directly to any broadband connection. The company provides unlimited worldwide videophone service for a fixed monthly fee. Features include high-resolution video, video messaging, picture-based caller ID and picture-based contact lists.

Videophone Pro (www.videophonepro.com) sells ViewPoint videophones made by Huawei and provides videophone service in the U.S. for a fixed monthly fee. The service includes multipoint video conference calling.

Non-Carrier Video Telephony Services – Computer-Based

Apple (www.apple.com) supplies webcams and iChat AV software as standard features of its computers. iChat AV has high-resolution video and three-dimensional arrangements of images. It allows conference calling with up to 10 people selected from a "buddy list" without dialing.

Skype (www.skype.com) offers free video calling for users who have their own computers (either PC or Mac) and webcams. The company also sells webcams. Video calls are limited to two participants, and video can be turned on or off during a call.

SightSpeed (www.sightspeed.com) offers free, high-resolution video calling and video messaging on either a PC or Mac, including to people without a SightSpeed account. The premium service includes a free webcam and the ability to initiate multipoint calls (anyone can participate in one).