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A PCCW GLOBAL REPORT

High-Definition Video Calling: Driving the Next Evolution in Video Communications

"The video conferencing market is growing and is showing itself to be a valuable traffic driver for the carrier industry. The next evolution in video is delivering point-to-point HD video calling from network-to-network and this means partnering, interconnecting, and working together as an industry to define a future that is rich in service with a foundation in quality"

Marc Halbfinger,
CEO at PCCW Global

Switched point-to-point HD video calling can give enterprises a rich video experience that is as easy as picking up the phone

Enterprise uptake in video conferencing and telepresence-type services shows there is an appetite for video, and it is up to the carrier community to take the next step and make high-definition (HD) video calling as easy as picking up the phone. Enterprises and end users have seen the benefits of video to increase productivity and enhance collaboration, and are ready to adopt point-to-point HD video services. It is just a matter of coming together as an industry to make these services a reality.

Video has long been tipped as the traffic driver of the future but it is still in its infancy in terms of network-to-network interconnection and overall services offered to enterprises. Already Over-the-Top (OTT) players have been able to deliver point-to-point video services to consumers and that has had an impact on both business and culture. Carriers should take note and explore ways to collaborate with OTT players to help serve the growing demand for HD services with managed class of service and guaranteed quality of service from endpoint-to-endpoint.

There is an opportunity to evolve and expand video services that are being offered to enterprises and use a carrier's infrastructure advantage to deliver secure, QoS-assured HD video calling to enterprises and other end users. Carriers' point-to-point expertise and the interconnection experience they have already built in their voice businesses can be translated into success in video. While the voice business may be challenging, HD video calling offers new opportunities to help enterprise customers connect to one another as long as carriers are collectively ready to drive this next evolution in video.

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From "Meet-Me" to "Call Me"

Research firm Infonetics has cited advances in and proliferation of technology (eg high-definition video, bandwidth), demographic and communication trends and specific use cases in video conferencing and telepresence-type services as driving growth in the enterprise video market. The company also saw a 47% increase in endpoint shipments in 2012 with forecasts showing sustained growth in the market and an overall positive view from the enterprise community.

Adding to this positive outlook on video within the enterprise has been an increase in collaboration amongst carriers leveraging network-to-network conferencing through interconnection agreements and business relationships.

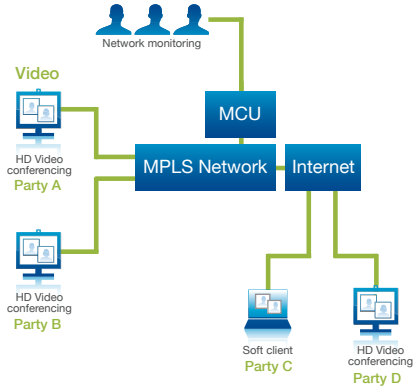
HD Video conferencing has begun to move away from the “enterprise as an island” approach with greater interoperability and interconnectivity increasing quality of experience for end users and enhancing the services being delivered. The next step for enterprise video is to make HD video calling between carriers possible while facilitating their enterprise users to move away from closed-user-group-only applications.

What is switched HD video calling? Just as in the voice world, this is the difference between picking up the phone to call someone directly and dialing into a conference bridge. So far, the telecom industry has been able to establish video conferencing as a viable way for enterprises to collaborate. The next step is to deliver seamless calling that does not require a bridge or a preset time to meet. This means an enterprise customer in the UK dialing a number to speak to someone directly in Hong Kong all on video with no bridge or shared dial-in details while assuring nevertheless that quality of service is maintained for the call.

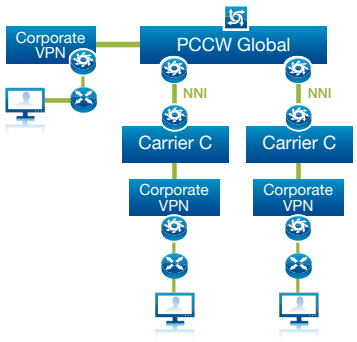
Jordick Wong, Senior Vice President, Product and Vendor Management at PCCW Global, says: “HD video calling is about delivering the same customer experience with video that carriers have already been delivering on the PSTN. If you want to initiate a video call you just dial a number like you would to connect a voice call. The service provider can route the call for the customer and the customer can immediately connect to the receiver.”

What this means is taking a market today focused on using video as a kind of meeting room and enabling it to be a direct communication between two parties, a caller and a receiver. This is a familiar model from the voice market for both the enterprise and carrier but one that changes the potential of video in an organization.

Web Conferencing



Switched Point-to-Point HD Video Calling



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Balancing the Benefits

What makes switched HD video calling exciting is that there is a balance between enterprise benefits and a healthy reward for a carrier's business. Service providers have traditionally focused on selling enterprise video based on cost-savings but with HD video calling the business case is about more than just driving down costs.

From the enterprise perspective, all of the positives of cost-cutting and savings on travel budgets are present but the real driver is an increase in real-time productivity. While cost-savings are good, increases in productivity is something that permeates the enterprise and increases opportunities for growth instead of a one-off reduction in travel budget, for example. This is an important distinction for enterprises and one that makes switched HD video calling attractive.

On the carrier side, it gives enterprise customers the tools they need to be more productive and importantly take a model that has worked in the voice business and generate new revenue with it. Point-to-point HD video calling is almost like an extension of voice but with greater capacity demands and the potential to be a new driver for international traffic.

"HD video calling is really about taking the expertise carriers have in voice trading and applying this to trading video minutes. This is in our DNA. We know it. HD video calling will require large amounts of managed capacity so it will help carriers to monetize the investments that have been put into their networks and monetize it on a per minute basis," says Wong.

HD video calling can be charged for based on a usage model rather than a flat rate as many video conferencing services are. While there hasn't been a standardized approach defined yet, a carrier could charge on a "calling party pays" model, as has been the case in the voice market.

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Making It a Reality

If this is an opportunity, how are we going to make it a reality? For video calling to become as easy as making a voice call today there needs to be a critical mass of enterprise users and uptake in interconnection between carriers. It took more than 50 years for voice calling to mature to where it is today but with HD video calling the relationships, technology and the business model already exist and can be used to drive adoption.

Creating critical mass is a challenge but HD video calling benefits from several communications trends in the enterprise that are already shaping the market. Three points will be key to this growth: a low total cost of endpoint ownership, mobility and bring-your-own-device (BYOD), and quality of experience. Growth in enterprise video relies on the growth of the number of endpoints with video capability within the enterprise.

Low total cost of endpoint ownership means greater numbers of users accessing endpoints that have a low cost of installation and operation with a decreased need for video conference rooms. The proliferation of video-ready smart devices amongst employees with higher capacity mobile networks adds to the opportunity for HD video calling with an increasing number of smart devices and bandwidth ready to deliver video.

Importantly, we need to take advantage of these trends, which are already occurring in the enterprise market. Carrier interconnection is critical to growth in point-to-point HD video calling as otherwise it will be hard to sell a service if there is no one to call.

There is a degree of interconnection in the video conferencing and telepresence markets but true carrier interconnection will be the lifeblood of HD video calling. Enterprise users are ready with affordable endpoints, it is now up to the carrier community to interconnect and ensure that these end users can call whomever they want. That means building on the relationships established in the voice market and ensuring that an enterprise user can video call a contact from network-to-network.

To make point-to-point video calling a reality, carriers will need to work together to create a standardized approach managing point-to-point traffic. Routing and addressing are still the primary challenges with the ultimate goal of ensuring an HD video call between carriers terminates at its destination. The lack of global addressing means the user doesn't get the same experience that powers a phone call today. They still have to go to a "meet-me" bridge and hold a conference.

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Across the industry a solution is being developed where the familiar E164 numbers are used in video calling. Video endpoints will register on a switch then the carrier/service provider will have the numbers for the endpoints that are on its switch. When one party calls another party then the network will know how to route the call. In terms of how to identify the different endpoints and service providers to send the call to, the idea is to dial a number that includes the service provider ID, thanks to a prefix, and the endpoint's ID, such as an E164.

In the future, other solutions relying on SIP identifiers, domain names and ENUM registries will provide other types of routing and addressing solutions with more flexibility and more user features. These solutions will come with challenges that will need to be overcome jointly as an interconnected industry. Carriers need to start seizing the HD video calling opportunity, and solutions like prefixing are solutions that have been used in the voice industry for a long time and could be a first stepping-stone for the HD video calling market.

There is an argument for using the receivers IP address to route a point-to-point video call. The challenges in using IP addressing to identify a video endpoint are around IPv4 exhaustion and IPv6 addresses being too long for the user to memorize. H.323 protocol was also not designed with security in mind. The most viable scheme appears to be using SIP interconnection between carriers and E164 numbers with a video prefix for users.

The Industry and IPX

This is one way to accelerate the adoption of point-to-point HD video calling. Another driver is the eventual standardization of IPX facilitating interconnection and ensuring quality of service. IPX has reached a level of acceptance that can have an impact on the development of HD video calling.

The i3 Forum, an industry body devoted to a unified effort to expedite global QoS IP-based traffic implementation, has established a working group looking at issues related to the interconnection and interoperability of high-definition video communications over IPX.

As the i3 Forum defines it, IPX is designed and operated to support high-quality IP-based services with guaranteed service assurance across the whole IPX domain. Both aspects are critical to HD video calling and make IPX a positive force in making HD voice calling across carriers a reality.

"IPX is one of the paths forward in terms of transitioning to IP, not the only solution, but very interesting for the delivery of guaranteed high-quality services," says Philippe Millet, chairman of the i3 Forum. "HD video calling shows the positive side of the coin for transitioning to IP. It doesn't have to be a defensive move. It is about delivering cost savings but also about driving new revenue through offering new services. HD video calling is an opportunity as big as what voice has been and it can work in the same way. The carrier community just has to do it together, not alone."

HD video calling can be an ecosystem over IPX and a firm definition of IPX will only help with interconnection and the delivery of standardized quality of service across networks. The IPX will eventually interconnect mobile and fixed operators that are moving their services over IP. The fast pace deployment of LTE and IMS networks will make this a reality very quickly.

In addition to the i3 Forum, numerous industry bodies are working on frameworks and standards for the adoption of HD video calling. The GSMA as well as the Open Visual Communications Consortium (OVCC) have HD video calling on their agendas and are helping to shape an industry environment that is ready to deliver these services.

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A Wholesale Video Future

"Uptake in HD video calling is only constrained by the number of partners willing to tap the opportunity," says Marc Halbfinger, CEO at PCCW Global. "Wholesale telecoms means interconnecting with partners. Switched HD video calling is an extension of that. Together we can deliver new point-to-point services and in turn create a market for bilateral agreements around HD video. We know the model works and HD video calling can deliver new variable revenue around fixed investments."

When critical mass is achieved with a significant amount of traffic flowing between carriers, bilateral video minutes trading can take place. This, again, would play to carrier strengths and furthers the need for interconnection. A world can emerge where voice and video are traded alongside each other and a familiar wholesale model emerges for HD video calling.

"Carriers have this opportunity because it requires managed networks," says Halbfinger. "They can offer the ability for users to engage in video communications with guaranteed quality, privacy and security. This is all the more pertinent as carriers make the transition to IPX and have access to a multiservice networks that offer a cost-efficient way to add new revenue."

The next steps for the carrier community is to recognize the opportunity and work with each other to develop HD video calling services together. Just as in the voice market, no one carrier has yet been able to stand alone.

"We envision a market where enterprise users are able to increase productivity and expand the human potential of their organizations with point-to-point HD video calling. Carriers can make this a reality and need to do it before an alternative emerges. The carrier community has an advantage in security and quality. We just need to deliver it with a cohesive offering," says Halbfinger.

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PCCW Global

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To learn more about PCCW Global and its Point-to-Point Video Calling service, please contact your local account manager or email John Wat, VP, VAS Product Management at PCCW Global - johnwat@pccw.com