Open Visual Communications Consortium
A Path to Ubiquitous, Any-to-Any Video Communication

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Any Vendor. Any Network. Any Device.

Introduction

Over the last several years, great strides have been made to improve video communication capabilities in the industry. Video over IP network technology has made video easier and faster to deploy. HD quality is now commonplace in video systems and clients. Management and infrastructure solutions deployed in enterprises and organizations have enabled video networks to be established and custom dial plans implemented, enabling a rich set of visual communication experiences for users within those organizations. As a result, video adoption has increased across enterprises and organizations around the world.

However, with growth have also come challenges. Those challenges have been most keenly experienced where enterprises or organizations have desired to have video communications across organizational boundaries. With voice and Internet traffic, one does not ponder how a network is connected because "it just works" when one makes a call or accesses websites outside an end-user domain.

With video, the opposite has been true. Typically, end users only communicate via video within their own organization. When communicating with outside parties, they often have to use awkward dial strings, and /or engage in manual planning and testing over the public Internet to have a video call. Even then a successful call can only be established if the IT departments of both companies have security or firewall policies that will allow the video call to take place to parties outside their organization. The customer may choose to use a managed or hosted video service provider to help facilitate that communication; however, this only moves the problem to the service provider, which goes through a manual process to plan, test, and validate that the desired far-end parties are reachable. Both end users and service providers must deal with a wide variety of technical issues when establishing video between different organizations or different service providers. These issues include network connections, network quality of service (QoS), NAT/firewall traversal, security policies, various signaling protocols, inconsistent dial strings, security rules within

each organization impacting video, and incompatabilities between video endpoints. In addition, there are the operational considerations around coordination of the different types management and scheduling systems and processes that exist within each Service Provider . Finally, the commercial considerations of termination and settlement between service providers must also be resolved.

This combination of technical and business challenges has relegated video communication to a collection of isolated islands. It's easy to communicate within an island, but almost impossible to communicate between islands. The ability to resolve these issues and federate the islands doesn't lie within the power of any one customer, one equipment manufacturer, one service provider, or even one standards body to solve. It requires a concerted effort of the industry driven by the needs of their end users.

The Open Visual Communications Consortium (OVCC) has been formed to address these issues. The mission of the OVCC group is to establish high-quality, secure, consistent, and easy-to-use video communication between these video "islands," thereby enabling a dramatic increase in the value of video communication to end customers worldwide.

This paper describes the OVCC organization, its purpose, and how it is addressing the B2B communications challenges and enabling businesses to open the door to faster decision-making, easier, more productive collaboration with partners and customers, streamlined supply chain management, and game-changing applications in education, healthcare, government and business.

What Is the OVCC?

The OVCC organization is a collection of like-minded organizations with a common goal to enable the federation of the "video" islands by interconnection, interoperability and a common business model framework. The organization is open to service providers, technology

providers, and other organizations interested in bringing ubiquitous video to the marketplace.

The OVCC mission is to establish secure, quality-assured, and video-capable interconnections between service providers, utilizing a consistent signaling and dial plan implementation, over a highly interoperable video infrastructure, with an operational framework for coordination of scheduling and management functions to enable any-to-any video communication for end users across the world.

The consortium has now defined B2B service definitions and models that ensure a consistent baseline service experience for end users regardless of which OVCC member they choose or where they procure the service. These service models include both reserved and reservation-less experiences. Each service provider offering OVCC compatible services has the responsibility to bill its own customers for all OVCC services. Inter-Service Provider agreements are negotiated bi-laterally between the service providers to enable the exchange of traffic, with the agreements typically based on a common interconnect framework approved by the OVCC organization. Services offered by the service provider to the end user customers may include, but are not limited to, multipoint conferencing services, QoS-assured network access services, or wholesale services. The common business framework dramatically reduces the complexity of traditional reciprocal compensation agreements between providers, which have been one of the barriers to enabling true video ubiquity. This framework also enables a technical methodology, operational framework, and an inter-service provider network that can be used to simplify existing interconnects and enable rapid expansion of interconnects as more service providers join the OVCC group.

Each OVCC service provider member has the freedom to offer its own unique, value-added services on top of this baseline OVCC defined service capabilities and market and to sell this B2B video capability according to its own desires. As a result, service providers that participate in the OVCC group will be able to offer their end users high-quality, easy-to-use video communication with any other endpoint that is also connected to the OVCC, independent of which network they are on, which device they are using, and which manufacturer provides the endpoint.

OVCC Services

Participating OVCC members that have launched their OVCC-based services can now offer at least one (1) or more of the following baseline services

1. Conferencing Service including both scheduled (reserved) and reservation-less options
2. B2B Access or Trunking Service
3. OVCC-QoS-assured Network Access

In addition, OVCC members are working on the next phase of services, including enablement of B2B point-to-point calling through a global dial plan that will be used to allow end user customers to directly dial any other end user that also has a connection to an OVCC service provider.

Conferencing Service

 The Conferencing Service is a videoconference bridging service. End users who buy this service will be able to use a video conference bridge number that will enable them and their desired partners to dial into a common video bridge, much as we do with audio conferencing today. The Conferencing Service may be scheduled to ensure sufficient bridging and bandwidth exists along the path of the call, or it may be used in a reservation-less fashion. Service providers will be able to offer one or the other or both options to their customers. The buyer of the conference service would have a number and passcode given to them from the OVCC member from whom they procure the service. The owner of the conference number could then at his/her discretion provide the number and access code to both internal and external participants to join a video conference. Participants on the call will be able to connect through an OVCC-connected QoS-assured network for the highest quality experience. Internet users will also be supported on a best-effort basis.

B2B Access Service

 The B2B Access Service can best be described as a B2B trunk or connection into the OVCC community. An end user that purchases the B2B Access Service from an OVCC member will establish a connection to an OVCC provider, and receive a set of video-enabled addresses (numbers) that will be reachable across the entire OVCC community via a federated dialing plan. This service is similar to a SIP VoIP trunk that an end user might purchase to route calls outside its organization. End users or subscribing organizations would purchase this service when they have their own video infrastructure that they want to enable for B2B. Users of this service would need to either register their B2B-enabled devices directly with an OVCC MSP, or work with their OVCC MSP to configure

their infrastructure to interface to the public dial plan administered by their OVCC MSP. It is expected that this service could be procured from an OVCC MSP as a standalone capability or could be procured in conjunction with a Conferencing Service or OVCC Service Provider specific services offered in addition to these baseline services.

OVCC-QoS Assured Network Access Service

The OVCC-QoS Network Access service is offered by OVCC members with network transport capability. This service will enable connectivity via QoS-assured networks to all of the providers of the B2B Access or Conferencing services. This service can be procured from either the same OVCC member providing the B2B access or conferencing service, or from a different OVCC member providing only network services.

In time, additional services and capabilities will be featured by OVCC members, including but not limited to:

1. Point-to-point services
2. Additional endpoint types and interoperation scenarios
3. Enhanced security and privacy features

OVCC Member Profiles

There are several profiles of OVCC members that include:

1. Managed Service Provider (MSP)
2. Network Service Provider (NSP)
3. Service Providers that offer both MSP and NSP services
4. Technology Providers

The MSP is able to offer the video service elements to end customers and subscribing organizations. The MSP can offer both the Conference Service as well as the B2B Access Service as part of the baseline service. The MSP has a multipoint video platform, call control capabilities for the registration and B2B routing services. The MSP controls the B2B numbers for its customers and is responsible for routing video calls to the appropriate MSP partner when it is not the terminating OVCC member. The MSP may offer additional non-OVCC defined services such as hosted, managed, scheduled, or white glove concierge video services. Services could be offered to end customers directly, offered in a wholesale manner to other service providers with no video infrastructure, or both. These additional services are not part of the OVCC

baseline, but could be offered in addition to the Conferencing Service or B2B Access Service.

The NSP is a service provider that can provide network services to customers and other service providers. They would offer the network access connecting the customer to the MSP.

Some service providers will have both NSP and MSP business components in their makeup, in which case they may serve both roles in the OVCC organization.

Technology providers consist predominantly of manufacturers of video infrastructure, video endpoints, call control platforms, session border controllers, registry solutions, and other technology providers with solutions that help accomplish the mission of the OVCC organization.

How OVCC Members Are Addressing the "Video Island" Issue

Issue # 1: Interconnection

There are three key elements of interconnection that must be addressed to facilitate the "it just works" experience: physical connectivity, quality of service (QoS), and NAT/Firewall traversal.

The physical connection from an end user customer to an OVCC member can be established in two ways:

1. QoS assured path from an Network Service Provider to the OVCC MSP
2. Via the Internet directly to the OVCC MSP

The preferred connection from an end user customer to an OVCC MSP is via a MPLS or dedicated circuit with the ability to meet the QoS targets required by real-time bi-directional video communication. A customer may also connect via the Internet. If connecting via the Internet there would be no QoS assurance.

Quality of service is a key differentiator in the provisioning of video, especially HD video services. A QoS-assured network is one in which there is prioritization for the real-time video and audio traffic, ensuring low latency, low jitter, low packet loss over which the best video experiences can be obtained. When connecting to OVCC services, as end users or as a subscribing organization, every effort should be made to connect over a QoS-assured path. All interconnections between OVCC service provider members are done over QoS-assured

interconnections to ensure the best possible end-to-end network performance. OVCC service provider members recognize their customers' need to support users that also come in over the Internet and will support those users also. However, the OVCC members believe that their customers' experience will be dramatically enhanced through their ability to route video and audio traffic over the QoS-assured paths established between OVCC members.

NAT/Firewall traversal and session control is another key element needed to federate the "video" islands and provide a demarcation between networks. As part of the work of the OVCC organization, certification of key SBCs (Session Border Controllers) will be carried out to ensure the ability to pass video traffic through disparate networks. Each end customer can work with its selected OVCC MSP to be able to route to that MSP. For any calls that need to be routed to another MSP, the OVCC organization has defined inter-service provider requirements to ensure that the calls can be routed properly and securely to the intended destination.

Each OVCC member will have an established SBC to create a segmentation and security domain between other established OVCC members and themselves and their customer. End customers may also have their own NAT/FW traversal element in their network. Such elements will be configured and tested to ensure their ability to pass video traffic based on the interface specifications as defined by the OVCC organization.

The OVCC MSPs will interconnect through a virtual mesh network facilitated by a small number of core NSP members through which traffic to and from each MSP may be routed. Customers can utilize any NSP to establish connectivitity to the OVCC MSP of their choosing.
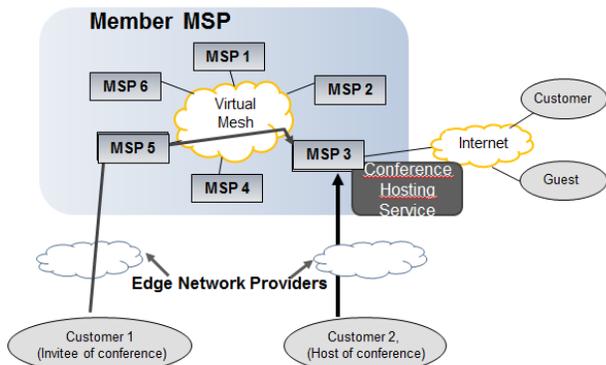
Issue #2: Signaling and Addressing

Key to providing an easy-to-use, interconnected environment for B2B video are the signaling and addressing elements. Establishing the connectivity for moving the video traffic is key, but then it must be augmented with a consistent signaling architecture and routeable dial plan.

The OVCC organization has standardized on SIP as the common signaling protocol between OVCC members. SIP has become the most prevalent session establishment protocol in the industry and standardizing on SIP will allow OVCC services to have the greatest level of interoperability with endpoints, software clients, and network devices. End users with H.323 end points will also be able to interconnect to OVCC members via their own on-premise signaling gateway or through OVCC member-provided signaling gateways, which they would offer as a service. This ability to provide interoperability between SIP and H.323 end points will further enable the OVCC members to federate the disparate "video" islands.

For the dial plan, OVCC offerings will use globally routable E164 numbers (telephone numbers or DIDs) as well as SIP URIs (identifier@companyxyz.com) as the supported identifiers. The OVCC MSPs will procure and assign the E164 numbers for routing to the conference bridges used as part of the Conferencing Service, or for individual endpoints. They may also be assigned to other video devices as part of the B2B Access Service. By assigning an E164 telephone number, an end user will be able to simply dial the number of a video conference bridge and be connected with no awkward dial strings. Users may also use a SIP URI dial string to direct calls to a specific element that is connected and routable through the OVCC member network. This scenario will likely be more common for desktop, software-based, video endpoints, but can be utilized by room and desktop systems alike. OVCC MSP members will also broadcast to each other which numbers and identifiers are reachable through them. Through this method, as more numbers join, all MSPs will know how to route the various identifiers assigned out. This is comparable to how DNS functions in the public Internet today.

Issue #3: Video Interoperability

Interoperablilty is a key issue OVCC work is addressing. There are many options for video endpoints in the marketplace: single screen and multiscreen telepresence systems, for example. There are also different vendors, audio and video codecs, resolutions, content-sharing

capabilities and software versions. There are different capabilities with various elements in the network such as the Session Border Controller or Call Control Platform. In short, there are many variables that can play havoc with a B2B call where organizations have different types and versions of video equipment.

As a result, the OVCC organization has created a certification program to certify endpoint families, core SBCs, and MCUs from leading technology providers. The certification program includes options for either a technology provider or service provider to test itself or through a selected OVCC third party to ensure interoperability for the endpoints and infrastructure deployed and supported by OVCC MSPs to ensure end-to-end high-quality video communication.

The goal of the certification program is to enable a wide variety of video endpoints and software clients to participate in calls from an end-user perspective, and to enable technology providers to achieve OVCC certification for consideration by OVCC MSPs for inclusion in their infrastructure.

Issue #4: Service Level Coordination, Consistency, and Business Issues

The OVCC organization is addressing the operational and backoffice service elements as well. High-quality video experience, especially a multi-party video event, also requires access to real-time support, usage reporting, and accurate billing.

As a result, the organization is establishing a set of service coordination capabilities. It has defined a set of baseline practices for sharing of scheduling information, troubleshooting across different OVCC members, end user networks, and devices, and reporting for both performance and billing purposes between OVCC members and between OVCC members and their respective end customers.

By addressing these specific areas, a consistent level of service can be delivered across OVCC services, while leaving room for OVCC members to differentiate themselves with their own additional and unique service capabilities.

Conclusion

In summary, the members of the OVCC organization are committed to work together to solve the challenges of B2B

video and truly enable an open visual communication experience for more users in more countries than ever before, mobilized through this single global initiative. The first OVCC compliant services were lauched in December 2012.

OVCC members are enabling the vision of B2B video communication to become a reality and are connecting the video islands in a way that "just makes it happen" for the end users. By enabling B2B video, organizations will be able realize the full potential of visual communication through expanded communication with partners and customers, streamlined supply chains, and game-changing applications in education, healthcare, government and business.

Learn More

For more information about OVCC activities or if you wish to become a member, contact help@ovcc.net.

About the Author

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