

# *Understanding and Deploying a Conferencing VNOC*

# Understanding and Deploying a Conferencing VNOc

---

June 2008



## Table of Contents

<b>INTRODUCTION .....</b>	<b>1</b>
<b>WHAT IS A VNOC? .....</b>	<b>1</b>
<b>SERVICES PROVIDED BY A TYPICAL VNOC .....</b>	<b>2</b>
<b>VNOC IMPLEMENTATION OPTIONS .....</b>	<b>4</b>
<b>ACTIVATING A VNOC – THE BUILD VS. BUY DILEMMA .....</b>	<b>5</b>
<b>AN EXAMPLE OF A VIDEO MANAGED SERVICES / VNOC OFFERING.....</b>	<b>7</b>
<b>HOW TO SELECT AN OUTSOURCED VNOC PROVIDER.....</b>	<b>10</b>
<b>CONCLUSION .....</b>	<b>10</b>
<b>ABOUT WAINHOUSE RESEARCH.....</b>	<b>11</b>
<b>ABOUT THE AUTHOR(S) .....</b>	<b>11</b>
<b>ABOUT YORK TELECOM CORPORATION (YTC) .....</b>	<b>11</b>

## List of Figures

Figure 1: Comparison of the Issues Managed by VNOCs and NOCs .....	2
Figure 2: Comparison of In-Sourced vs. Outsourced VNOCs.....	6
Figure 3: York Telecom - VNOC Service Architecture .....	8
Figure 4: York Telecom's VNOC Team.....	9

## Introduction

Visual communications and videoconferencing are entering the mainstream as companies seek more cost-effective, efficient ways to conduct business. As a result, interest in centralized management capabilities and outsourced managed service offerings has increased dramatically in recent years. This white paper describes the key features and capabilities of a video network operations center (VNOC) and provides insight into ways in which a VNOC can be deployed.

## What is a VNOC?

A VNOC is a special form of NOC (network operations center) that is focused on monitoring and managing a visual collaboration / videoconferencing environment. From a top-level perspective, a NOC and a VNOC share the same basic functional requirements:

- Real-time monitoring of a production environment
- Initial problem discovery
- Documenting and tracking all operational aspects of a customer environment
- Basic troubleshooting (and if possible trouble resolution)
- Coordination and management of other resources – both internal and external
- Escalation of problems to other parties, as required

NOCs and VNOCs are staffed by specially trained and experienced personnel that utilize various forms of technology to perform their assigned duties. The primary differences between a NOC and a VNOC relate to the type and reach of problems they tackle, and the urgency with which the support staff must act.

**Reach** - As shown below, network issues (which fall within the domain of the NOC) have the potential to impact large numbers of users and locations. For example, the loss of network connectivity between two main offices could impact thousands of information workers across the enterprise simultaneously. On the other hand, a videoconferencing related issue (within the domain of the VNOC) is likely to impact a much smaller segment of the user base, such as those in a particular video session or about to participate in a future meeting.

***Videoconferencing-related issues tend to impact a relatively limited number of people in an extremely stressful and significant way.***

**Level of Impact** – The majority of enterprise networks today are designed with built-in redundancy and automatic (and immediate) failover. In the event of a network failure (e.g. a down link, excessive packet loss, etc.), traffic will be re-directed along an alternate network path; a process which may impact network throughput and overall performance, but will maintain overall accessibility and functionality. In fact, in many cases, the impacted users are not even aware that a network issue is happening. Although catastrophic network outages are not unheard of, the impact of most network issues on an enterprise's user base is quite limited.

Although many videoconferencing environments include redundant elements (e.g. video bridges, gatekeepers, management systems, etc.), the degree of redundancy and failover is typically below that of an enterprise data network. As a result, when videoconferencing-related issues arise, they are immediately apparent to many (if not all) of the meeting participants and the ability to communicate is compromised. The fact that video sessions often include high-profile users, often in different time zones, discussing critical topics makes matters even worse.

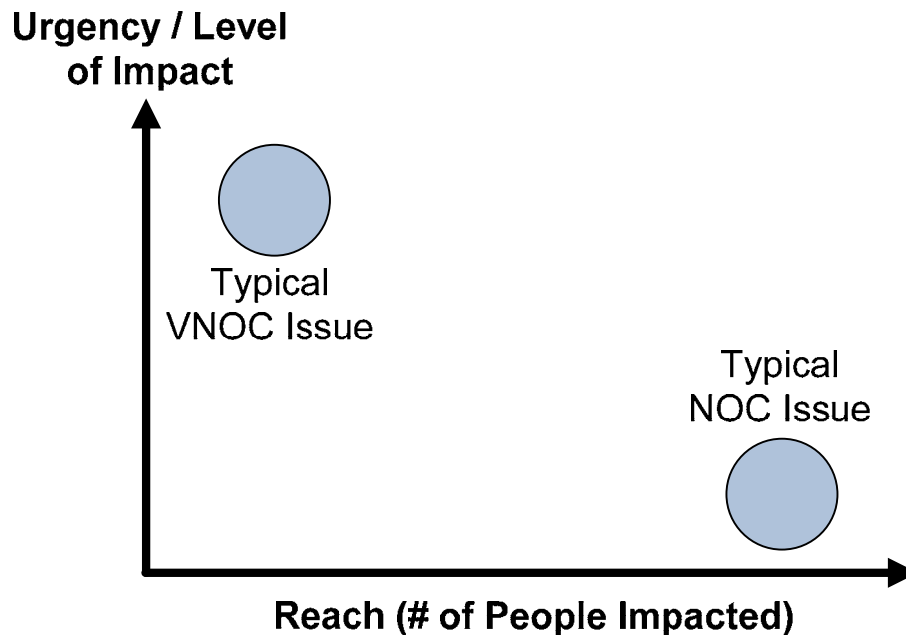


Figure 1: Comparison of the Issues Managed by VNOCs and NOCs

## Services Provided by a Typical VNOC

WR believes that a typical VNOC should include the following basic capabilities.

**Help Desk** – The help desk is perhaps the most important element of the VNOC since the help desk acts as the center-point for almost all VNOC activities. The help desk is responsible for receiving inbound support requests and resolving any open issues. Some VNOC help desks are staffed by tier-1 support staff responsible for basic troubleshooting only. In this situation, the help desk staff is focused on categorizing the problem quickly, much like the triage function performed in many hospital emergency rooms, so that any required additional support resources can be dispatched quickly. Other VNOC help desks are staffed by tier 2 or tier 3 support staff with the training and experience necessary to perform advanced troubleshooting as required. Many help desks provide varying levels of support at different times of the day. For example, the help desk might be staffed by senior technicians / engineers during local business hours and entry-level technicians and support staff during off-hours and weekends. Staggered staffing programs of this type are an effective way to cut support costs without decreasing the support offered during peak hours.

**Pro-Active Device / Environment Monitoring** – Like the help desk, providing pro-active monitoring is a key part of the enterprise VNOC. In most cases, pro-active monitoring requires the use of one or more centralized management systems such as Polycom’s ReadManager or GMS systems, Tandberg’s TMS, WideArea Systems’ VCWizard (recently acquired from MagicSoft), Crestron’s Roomview, or AMX’s Meeting Manager. These software systems continuously monitor the availability and state-of-readiness of the various devices in the visual collaboration / videoconferencing environment. Should the management system discover a problem, it will automatically notify and/or dispatch the appropriate support resources. Depending upon the environment or process in use, the notification could involve one or more of the following:

- a) Display text describing the issue on the “problem” page of the management user interface
- b) Create a trouble ticket within the management system
- c) Create a trouble ticket within a 3<sup>rd</sup> party trouble tracking system (e.g. Remedy) in use within the enterprise
- d) Send an email or text message / IM to the support resources designated as responsible for the locations / devices experiencing the problem. In some cases this may include the enterprise-wide IT help desk, one or more internal resources, or even an external vendor charged with supporting the video environment.

Some advanced management systems also support “follow-the-sun” support processes. Ideally, the combination of a) pro-active problem discovery, b) immediate notifications and trouble-tracking, and c) the ability to leverage globally deployed support resources will allow an organization to resolve most issues long before they impact the user community.

**Device Management** – The VNOC is responsible for remotely managing the videoconferencing systems (endpoints) and infrastructure devices (video bridges, MCUs, gateways, gatekeepers, etc.) installed throughout the videoconferencing environment. This includes maintaining an up-to-date list of all deployed systems, managing, tracking, and performing global software upgrades, defining and storing system configuration information, performing system testing as required, and resolving any and all technology issues. In many cases, the VNOC also manages other devices supporting the meeting environment including audio-visual equipment and streaming encoders and servers.

**Conference Scheduling** – Although the degree of involvement varies from one enterprise to the next (and often from one user to the next), the burden of scheduling videoconferencing meetings almost always falls to the VNOC. In some organizations, the VNOC includes a team of dedicated (or shared) reservationists taking meeting requests by phone, email, fax, etc. In other organizations, end-users schedule their own meetings (either directly into the videoconferencing management system or via Outlook / Lotus Notes) and the VNOC team reviews the reservations and provides support as required. Depending upon the systems in use within the enterprise, the VNOC staff may also be responsible for transferring the meeting details from a non-video aware scheduling application into the videoconferencing management system.

**Conference Management** – The VNOC is often involved in the real-time coordination, monitoring, and management of conferences (both ad-hoc and scheduled) in progress. Typical services provided include providing meet and greet services, adding (or removing) video sites on the fly, changing on-screen layouts (from full screen to quad-screen for example), and extending conferences beyond the scheduled end time. If an outsourced VNOC / managed service is used, the level of conference management provided depends upon the contractual arrangement and service level agreement.

**Problem Management / Troubleshooting / Tracking** – The VNOC manages and contributes to the problem resolution and troubleshooting efforts for a high percentage of videoconferencing-related issues. In some cases this means the VNOC team is working to resolve a problem impacting a current session, while in other cases the efforts are applied toward fixing a problem BEFORE the users are impacted or even aware that an issue exists. The VNOC may also coordinate (or even manage on behalf of the client) the efforts of other resources to expedite problem resolution. For example, a typical troubleshooting session may include a combination of VNOC staff, network management staff, external vendors / service providers, and local IT support resources.

## **VNOC Implementation Options**

Functionality aside, the manner in which a VNOC is implemented may vary as follows:

### Centralized vs. Distributed VNOC

VNOC services do NOT need to be provided from a single, centralized location. In fact, there are numerous advantages (e.g. redundancy for disaster recovery, support for multiple languages, an understanding of local cultures, etc.) to a distributed, multi-location VNOC architecture. For example, an organization's conference scheduling and management services may be provided regionally; a distributed architecture that provides both 24 / 7 coverage and the redundancy a global organization requires.

### Dedicated vs. Shared Resources

VNOC staff can include both dedicated and shared resources. For example, a VNOC support team may include the enterprise-wide IT help desk responsible for receiving the trouble calls / requests, and the dedicated VNOC help desk staff responsible for problem troubleshooting and resolution, and local support resources responsible for providing in-room support as required.

### Accessibility

A VNOC should be easily accessible and available to both conferencing users and internal support staff.

There is no set rule defining the hours of operation required for a typical VNOC. However, WR believes that a VNOC should, at a bare minimum, be appropriately staffed during the extended business hour periods in the locations being supported. Ideally, a VNOC would be staffed 24 hours a day, 365 days a year for customers requiring round-the-clock coverage. In WR's experience, this is a common expectation of many large enterprises.

In addition, VNOCs should be able to receive support requests and other communications in a variety of ways including phone, email, fax, and the enterprise trouble tracking system.

## Activating a VNOC – The Build vs. Buy Dilemma

Enterprises seeking to implement a VNOC have two basic options; build their own VNOC or leverage the VNOC capabilities / offering of a video managed service provider (MSP).

### Option 1 - The “Build Your Own” Option

Enterprises looking to build their own VNOC will need to:

- 1) Buy and install a scheduling / management system
- 2) Configure all videoconferencing devices (endpoints, infrastructure elements, etc.) to communicate with the scheduling / management system
- 3) Dedicate the appropriate internal resources for the video help desk and scheduling service
- 4) Define and implement the appropriate support processes and procedures
- 5) Provide the VNOC staff with initial and ongoing training

The advantages of creating an internal VNOC include:

- Maximum security
  - o Meeting coordination is handled by internal staff only
  - o All devices (and communication between devices) remains behind the firewall
- Total control of all aspects of the environment
- No loss of accountability
- Little or no dependency on external vendors
- Potential OPEX cost savings (cost for internal resources is generally less than that for externals)

Disadvantages include:

- Need for operational investments (OPEX) related to the cost of finding, hiring, and training VNOC staff (and staffing a help desk 24 / 7, covering for people during vacation / sick time, etc.)
- Need for capital investments (CAPEX) related to management system purchases / upgrades
- Potential deployment delays (equipment purchase and installation, staff training, etc.)
- Enterprise carries the burden of the entire videoconferencing environment on its shoulders; a function which is typically not core to the organization.

In effect, creating an internal VNOC means that the enterprise will need to become a videoconferencing managed service provider focused on supporting a single customer.

## Option 2 – Activate a Managed Service Provider

Many enterprises choose to outsource the management of their videoconferencing environment to an external managed service provider's VNOC.

The advantages of using an external VNOC include:

- Fast activation – often within a few days / weeks
- Limited (if any) internal resource requirements
- Immediate access to skilled, experienced resources
- Access to best practice / benchmark information
- Decreased CAPEX cost (leveraging the managed service provider's equipment)
- Some degree of obsolescence protection
- Possible SLA guarantees

The disadvantages include:

- Increased OPEX cost related to the use of the service provider's staff
- Potential information security issues since meeting information is shared with externals
- Potential network security issues related to allowing the external vendor's people and systems to access internally deployed devices
- Potential loss of flexibility and control because the service provider's systems must be configured to support all of its clients
- Potential loss of accountability

The chart below highlights some of the differences between these two options:

<b>Requirement / Priority</b>	<b>In-sourced VNOC</b>	<b>Outsourced VNOC</b>
Accountability and Control	X	
Security and Confidentiality	X	
Minimum Support Burden on Internal Staff		X
Access to Industry Experts and Best Practices		X
Minimal CAPEX Cost		X
Limited FTE Requirement (leveraging service provider staff)		X
Obsolescence Protection		X
Fast Activation		X
Flexibility / Ability to Customize Systems	X	

**Figure 2: Comparison of In-Sourced vs. Outsourced VNOCs**

## **An Example of a Video Managed Services / VNOC Offering**

This section provides information about the services included within the VNOC / video managed services offering from the sponsor of this white paper, York Telecom Corporation (YTC). YTC's offering includes elements typical of many similar offerings (e.g. help desk, scheduling service, meeting management, video bridging services, etc.), and a few power features (e.g. secure web-based information portal, meeting recording and streaming services, support for multi-codec / telepresence sessions, etc.) available from only a handful of providers today.

**Information Portal** – YTC's offering includes BIS (Business Information System), the company's web-based information portal that provides customers with access to the following items:

- System deployment details (equipment lists, serial #s, software versions, warranty status, etc.)
- Procurement information and status information on projects currently in progress
- Current work-orders and remediation efforts
- Real-time (or near-real-time) system readiness / status information
- An integrated trouble ticket system including the ability to create / submit new tickets and review problem status information
- An integrated reporting engine that allows users to create a variety of reports including up-to-date system usage and trouble ticket information
- Detailed information about the service level agreement (SLA) and whether the service level provided is in compliance with the SLA

Information portals are not typically required for internal VNOCs because the enterprise has direct access to the monitoring and management engine and the status information that the engine provides. However, when an outsourced VNOC / video managed service offering is in use, WR believes an information portal, like YTC's BIS, is a key part of keeping the customer informed and up-to-date at all times.

**Help Desk** – VNOC / managed services customers gain access to YTC's 24 / 7 / 365, multi-lingual videoconferencing help desk that is staffed at all times by experienced and certified video engineers and not by an answering service. YTC maintains that staffing the help desk with fully qualified (albeit more expensive) people is a key part of resolving technical issues quickly and without impacting the user community. Note that the YTC help desk can be customer branded (operators will recite a pre-defined script) such that it appears to be a part of the enterprise's internal help desk.

**Device Monitoring and Management** – YTC's VNOC provides 24 / 7 / 365 pro-active device monitoring and management services for its customers. Depending upon the situation, this may involve the use of a management system (e.g. Tandberg's TMS) that is installed on the customer's premise (or in York's data center / hosting facility), dedicated to that particular client, and remotely managed by YTC. Alternatively, if YTC is given the appropriate level of access to the client's data network, pro-active device monitoring and management can be provided without the need for a dedicated management system and thus at a lower cost to the client. When a problem is discovered, the actions taken by YTC's VNOC are based on the client's chosen service level. When only basic service has been requested, YTC will notify the client and let the client resolve the issue himself. A more typical situation, however, is that YTC not only discovers the issue, but also is charged with troubleshooting and resolving the problem on the client's behalf.

**Scheduling Service** – YTC’s VNOc provides clients with access to a 24 / 7 / 365 scheduling service. Meeting requests can be made a variety of ways including via telephone, web, email, and fax. In many cases, clients are able to use their existing groupware client (Outlook, Notes, etc.) to schedule (or at least submit requests for) their video meetings. In addition, clients are able to schedule room-only (local / non-VC) meetings, on-site support staff, audio-visual support services, catering, and other ancillary support services such as meeting recording and streaming. Access to the YTC scheduling system requires a user login and password that is either maintained in a user-list within YTC’s management system (BIS) or provided via integration with the client’s directory system (e.g. LDAP / Active Directory).

**Call Launching / Meeting Management** - Once a session has been scheduled (or an ad-hoc meeting request has been made to the VNOc / scheduling service), the management system automatically launches the video call. Upon request, the VNOc team can also provide advanced meeting support including meet-and-greet services to welcome attendees to the session, live operator support and monitoring, Q&A management, and more. Although this concierge service involves additional costs, such a service is well suited for VIP users (with exceptionally high support expectations) and high-profile sessions and events.

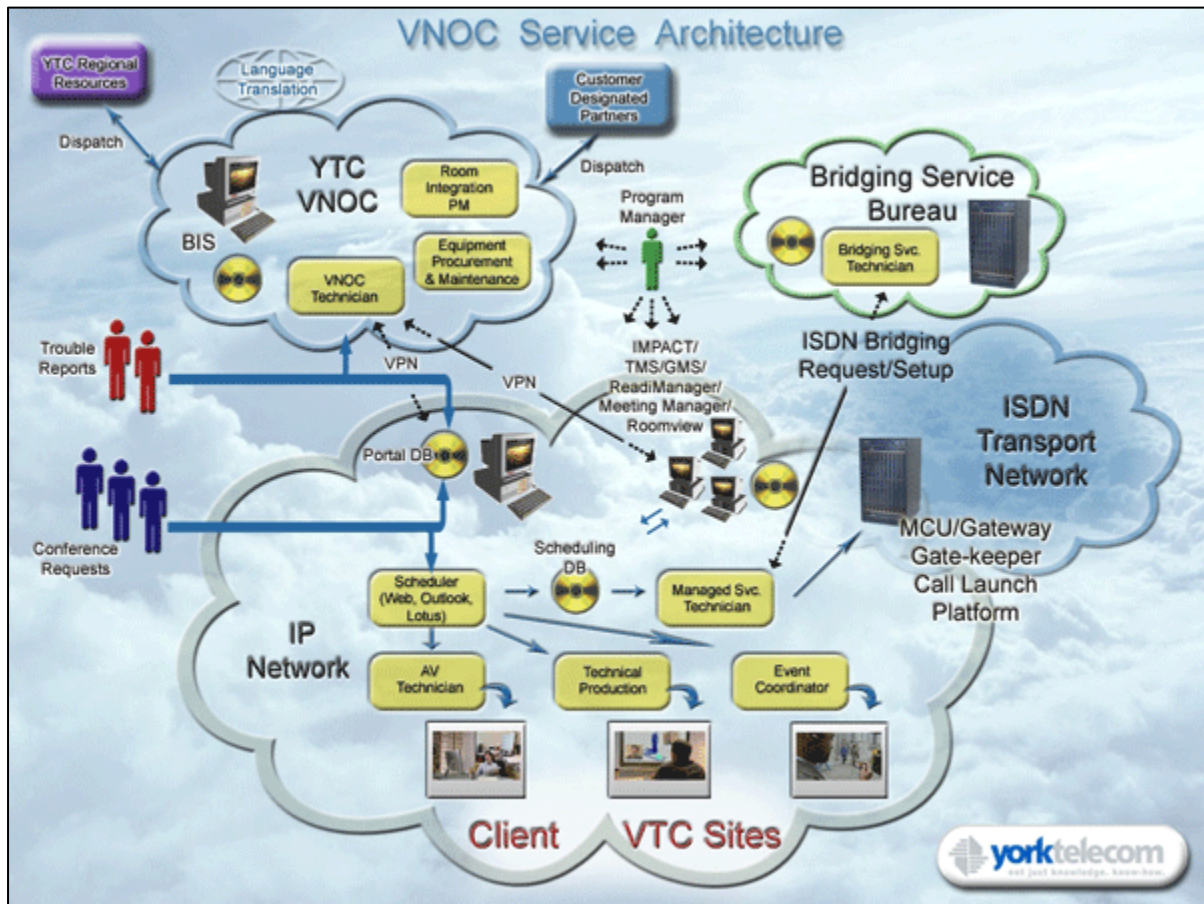
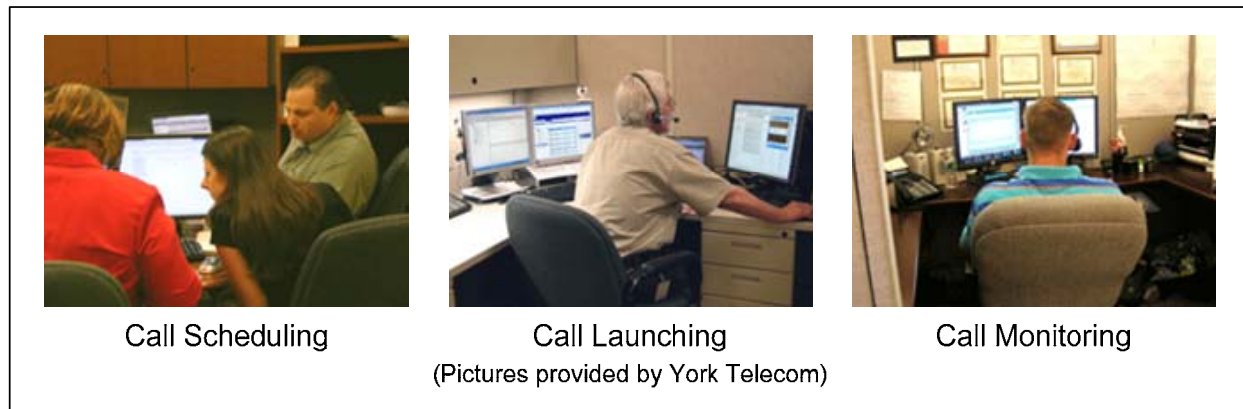


Figure 3: York Telecom - VNOc Service Architecture

YTC's offering also includes support for telepresence systems and sessions including call launching (a task complicated by the use of multiple codecs for many telepresence sessions), on-screen layout management, and a turnkey concierge service. These sessions can be hosted on YTC's or the client's video bridge.

**Video Bridging Services** – YTC's managed service / VNOc offering allows customers to host multipoint video meetings on their own video bridge or on YTC's video bridges. Depending upon the situation and the client's preference, client-owned bridges can either be hosted within the client's premise / behind their firewall or within YTC's data centers.



**Figure 4: York Telecom's VNOc Team**

**Coordination of Additional Resources** – In addition to managing their own resources, YTC's VNOc staff can also manage other resources and service providers on the client's behalf. For example, clients can leverage YTC's 24 / 7 / 365 help desk by making YTC the Agent of Record for the network links hosting the videoconferencing traffic. This allows YTC to interface directly with the network service provider without having to reach out to the client and request approval to troubleshoot / resolve the problem.

Additional features of YTC's managed service offering include:

- Redundant VNOc locations hosted in professional network data centers
- Help desk branding / personalized greeting on a per-client basis
- Support for multi-vendor deployments
- Network monitoring services (depends upon network in use)
- Optional audio-visual design, integration and support services

## How to Select an Outsourced VNOC Provider

Based on years of helping large and small enterprises select the appropriate videoconferencing managed service provider, WR offers the following tips:

- 1) Select a field-proven offering and check at least three client references. You do NOT want your organization to be the inaugural customer for a new service offering.
- 2) Consider only offerings that can be customized to suit your needs (you shouldn't pay for things you don't need / want / can't use)
- 3) Seek service providers that follow a data-center mentality (physical and data security, hosting in professional data centers, redundancy, enterprise-level databases like Oracle / SQL, etc.)
- 4) Study the service provider's meeting support process and procedure documents to ensure that their methods are compatible with the expectations of your users
- 5) Study the service provider's service level agreement (SLA) carefully BEFORE you sign, and make sure that all parties are in agreement about what happens if the terms of the SLA are not met.
- 6) Attempt to identify the level of automation in use by the service provider. For example, some VNOC's manually launch video meetings from the video bridge or web interface of the client's video systems. Although functional, this is an expensive, error-prone call launching method.
- 7) Make sure the contract has clearly defined reasons and procedures for termination.
- 8) Require the MSP to designate an account manager with the authority to make decisions.
- 9) Establish clear procedures between the internal visual collaboration / videoconferencing staff and the MSP staff.

## Conclusion

The enterprise video network operations center (VNOC) is a key part of managing a global videoconferencing environment. Like a network operations center (NOC), VNOCs are responsible for supporting a variety of user requests and technical issues. However, the fact that videoconferencing is a real-time communication technology means that most issues must be resolved immediately.

Readers should note that the success of a VNOC depends upon a variety of factors including the knowledge and experience of the VNOC staff, the processes and procedures they follow, and the functionality (and level of integration with other systems) of the videoconferencing management system.

VNOCs can be deployed internally (using internal resources) or outsourced to videoconferencing managed service providers (MSPs). In addition, VNOCs can include dedicated and/or shared support staff working in a single location or distributed around the world.

Organizations seeking to improve the performance and reliability of their global videoconferencing environment should consider the deployment of a videoconferencing network operations center.

## **About Wainhouse Research**

Wainhouse Research ([www.wainhouse.com](http://www.wainhouse.com)) is an independent market research firm that focuses on critical issues in rich media communications and conferencing. The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings. Wainhouse Research publishes Conferencing Markets & Strategies, a three-volume study that details the current market trends and major vendor strategies in the multimedia networking infrastructure, endpoints, and services markets, as well as a variety of segment reports, the free newsletter The Wainhouse Research Bulletin, and the PLATINUM ([www.wrplatinum.com](http://www.wrplatinum.com)) content website.

### ***About the Author(s)***

Ira M. Weinstein is a Senior Analyst and Partner at Wainhouse Research, and a 16-year veteran of the conferencing, collaboration and audio-visual industries. Prior to joining Wainhouse Research, Ira was the VP of Marketing and Business Development at IVCi, managed a technology consulting company, and ran the global conferencing department for a Fortune 50 investment bank. Ira's current focus includes IP video conferencing, network service providers, global management systems, scheduling and automation platforms, ROI and technology justification programs, and audio-visual integration. Mr. Weinstein holds a B.S. in Engineering from Lehigh University and can be reached at [iweinstein@wainhouse.com](mailto:iweinstein@wainhouse.com).

## **About York Telecom Corporation (YTC)**

(Copy provided by York Telecom)

York Telecom has 24-years of experience providing state-of-the-art audio and visual collaboration solutions to major government, education and commercial clients. Offering turn-key and totally-managed solutions, York Telecom has a proven track record of success in providing technology and services including total managed conferencing services, consultation, custom video room engineering, video distribution, distance learning, television broadcast facilities, streaming media, life cycle video production, 24 x 7 maintenance and help desk support and providing a full range of audio visual communications support in a global environment.

Since its inception, York Telecom has designed, built and currently maintains more than 6000 video facilities worldwide and has over 1500 sites under managed services via our Telepresence Certified VNOC. Our 24 years of lessons learned supporting mission critical visual collaboration systems within the Federal and commercial marketplace have been incorporated into best business practices at the core of our engineering and operational excellence as a full services visual communications provider.

To learn more about York Telecom, visit [www.yorktel.com](http://www.yorktel.com) or email [info@yorktel.com](mailto:info@yorktel.com).