White Paper Series: Harnessing Business Video for Business Transformation
3rd in the 4-Part Series

Business Video: Deliver the Desired Results with Implement and Operate Services

What You Will Learn

Despite the most meticulous planning, unforeseen issues can arise during implementation and ongoing operations of business video. This white paper, the third in a four-part series, provides guidance for IT teams preparing to implement business video solutions:

- Being prepared for the unexpected helps you deliver the promised results for a highly visible project.
- Maintaining spare parts is not enough to ensure high availability, because many issues arise from configuration errors.
- Evaluating whether the IT team has the necessary people, tools, and processes will help you decide whether to implement business video internally or engage a partner.

Implementation: Create a Positive First Impression of Business Video

The most important step you can take to accomplish a smooth implementation of business video is to thoroughly plan the business case, the solution, and the medianet, which is the underlying network that is optimized to deliver an excellent business video experience. Even with thorough planning, however, snafus can arise that you will need to quickly troubleshoot and remediate to create a positive first impression.

Following are implementation considerations for different types of business video and examples of issues that your IT team or a service partner might need to resolve. Some IT organizations have the internal expertise to address these issues in a timely fashion, while others might conclude that engaging an experienced services partner is a prudent precaution to help make sure the investment in business video delivers the expected business value. These examples are not intended to be comprehensive, but rather to provide a glimpse into potential surprises.

Telepresence

The telepresence experience results from intricate interactions between large plasma displays, network devices, the unified communications system used for call setup, and even environmental conditions in the rooms. The end goal for implementation is to confirm that all components are interacting properly so that participants can see and be seen, hear and be heard, and be comfortable without it being too hot for the equipment.

Following are some considerations for IT professionals deciding whether to implement telepresence technology themselves or engage an experienced partner:

- **Installing the display:** Two people can install a small office telepresence system in a few hours. However, the sheer weight and size of larger systems make it wise to work with professionals who have the proper training and tools to avoid injuries to people or damage to the equipment.

- **Configuring network switches:** The in-person telepresence experience requires that network latency, jitter, and packet be within the allowed range. If the image or audio quality is not lifelike, either a partner or an internal resource will need to quickly determine the cause, often an incorrectly configured switch somewhere in the network.
- **Lighting and acoustics:** During implementation, measure environmental conditions and make any necessary adjustments needed for an optimal user experience. Ideally, the room should have less than 44 decibels of ambient noise and at least 4100 kelvins of light. Services partners have the tools to take these measurements and the expertise to make adjustments.

Desktop videoconferencing systems can tolerate more ambient noise and lighting imperfections than telepresence systems. A partner can advise whether the conditions in your room need to be adjusted.

Digital Signage

> "No matter how thorough the planning, when we arrive on site, we expect the unexpected."
> **– Jonathan Chang, Network Consulting Engineer, Cisco Services**

Connecting the digital signs to the network is quite simple. However, other errors can prevent the signs from displaying content correctly. Common implementation issues that partners see include:

- Network configuration errors, especially incorrect quality-of-service (QoS) configuration.
- Software issues, including variations in browsers.
- Incorrect cable choice.
- Failure to open the correct firewall ports and assign the correct IP addresses to the digital media players attached to the signage.
- Improper settings in the digital media manager, digital media player, codec, or even the display itself. Even a seemingly minor deviation from specifications can cause unsatisfactory results. As an example, Cisco® Services was called to help a customer whose digital signage did not begin playing audio until 10 seconds after the video began. The engineer correctly suspected a codec issue and quickly remediated the issue by selecting a different transcoding option.
- Low-bandwidth areas of which you were not previously aware, resulting in unacceptable video quality. This surprise during implementation does not necessarily require an expensive and time-consuming network upgrade. Often a services partner can advise you how to modify the content to conform to network limitations rather than taking the more drastic approach of modifying the network.

After the displays are connected, then what? Determine whether your IT department has the resources to train personnel how to create content, create playlists, create attractive formatting and effects, and push content to digital media players for local storage, if needed. Designers might want to know, for example, how to combine images, Flash animation, video, RSS feeds, and JavaScript on the same screen and how to loop content. The IT team, in turn, might want to know how to use the same displays for live broadcasts and recorded presentations, at different times. A partner can provide hands-on training to both stakeholder groups. If you have not already created a content strategy, do so at this stage so that the digital signs go live with valuable content. Getting good use from digital signage from day one brings positive attention to IT from executives and other employees.

Where Is the Content? Partner Recommends Best Practices for Content Design

A company design team was confounded when a full-screen looping animation did not display correctly on digital signage. The designers had spent considerable time coding in JavaScript, but nothing appeared on the signage other than one line of text.

Digital signage experts from Cisco Services quickly identified the issues. First, JavaScript does not work well with the browser embedded in the digital signage solution, and secondly, the designers had written the code to fade between full-screen animations from 0 to 100 percent. A Cisco Services engineer recreated the animation in Adobe Flash, fading from 20 to 80 percent, and the content went live the very next day, The fade looked the same to the human eye, but the change relieved the digital media processors powering the displays.

Cisco Services also helped a customer who discovered during implementation that 1080p video would not play well over a 128-Kbps network segment. The engineer showed the customer how to push video to the Flash memory on the digital media processors instead of streaming it over the network.

In both cases, working with an experienced partner during implementation helped to ensure that surprises did not cause missed launch dates or affect the first impression of IT's business video solution.

Video-Sharing Portals

Most implementation issues with video-sharing portals result from inappropriate transcoding settings. Too low a resolution degrades the user experience. Conversely, a resolution that exceeds the device's display capabilities wastes bandwidth, potentially degrading performance of all applications on the network, not just video. One company that engaged a partner had unwittingly selected the transcoding option for the largest telepresence displays, consuming 16 Mbps of bandwidth rather than the 760 Kbps required for outstanding resolution on a desktop video portal.

A partner can also advise about workflow, policies, and a phased deployment process for video-sharing portals. An example is a healthcare provider concerned about the effects of a video-sharing portal on network performance. The services partner recommended first deploying the portal to 50 IT people, next to 50 doctors, and finally to all tens of thousands of users. The partner's engineer worked on the customer premises to validate that QoS was set up properly and to test the system. The implementation services proved very valuable when the engineer discovered an incorrect multicast setting on a network device that the customer had been unable to test earlier and fixed it well in advance of a scheduled companywide broadcast.

Industry-Specific Solutions

Some partners have experience implementing business video solutions used for industry-specific applications, such as troubleshooting manufacturing issues on the assembly line or delivering telemedicine to rural areas. When implementing telepresence in healthcare settings, for example, an experienced partner can recommend how to adapt the technology to the established workflow rather than requiring doctors and nurses to adapt their workflow to the technology. At a California hospital, Cisco Services implemented HealthPresence pods, consisting of a customized table with Cisco TelePresence™ display with mounting arms, drawers, and shelves for equipment. Another clinic in the Midwest did not want to use the tables, so Cisco Services invited doctors to use the system and indicate where they wanted their equipment components to be located.

Media Transformation

The Cisco Media Experience Engine transcodes video to optimize it for different viewing devices, such as digital signage, a video portal, or a smartphone, for example. During implementation, the IT group or a partner will need to discover optimal transcoding settings.

One of the largest printers in the western hemisphere engaged Cisco Services for implementation services to learn how to broadcast live video to tens of thousands of employees in all offices. The printer needed to limit this live video stream to 350 Kbps within its network. The services team configured the customer's Cisco Media Experience Engine profiles to transcode an incompatible high-quality multicast video to a compatible Windows Media video unicast and then broadcast it back out as a live multicast through the video-sharing portal. The engineer also tested live streams to discover optimum video format.

Operations Services: Protecting the Investment

After the video solution is successfully launched, a new challenge begins. Now the IT team needs to make sure that the business video solution continues to deliver an excellent user experience and can be managed efficiently. Simply maintaining equipment spares is not enough, because issues often result from configuration errors, not equipment malfunction.

Some IT departments have the skilled resources to provide operations services internally from the outset. Others prefer to rely on a trusted partner so that IT teams can focus on solutions development. Still others take a middle path, engaging a partner to augment the internal team or using partner services temporarily until the internal team develops necessary skills.

No matter who delivers operations services and whether the business video systems are monitored locally or over the network, the goal of operations services is to detect and remediate issues before they affect the user experience. If part of the network goes down outside of business hours, for example, a services partner that provides monitoring 24 hours a day, 7 days a week will receive an alert and can begin investigating immediately, with the goal of making sure that the video solution is operating when employees return to work the following morning.

To determine if your IT team is prepared to provide ongoing operational support, assess your people, processes, and tools:

- **People:** To support telepresence systems, for example, IT personnel need to understand jitter, latency, packet loss, and interfaces with the call-processing platform. Troubleshooting requires in-depth knowledge of telepresence units as well as codecs. You might also want resources to provide a concierge service for telepresence participants, for instance, if a participant cannot connect because the meeting organizer forgot to schedule that room.
- **Tools for live monitoring and polling of endpoints:** Just because a device responds to an SNMP ping does not mean that users are experiencing lifelike telepresence with ultra-high video and audio quality. The IT team or a partner also needs tools to measure latency, jitter, and packet loss and sensors to detect server overheating and fan malfunctions.
- **Process:** IT teams that decide to support business video solutions internally need to establish processes for case management. For example, Cisco Remote Management Services periodically sends updates to the designated contact person, such as, “The carrier is working on a downed line” or “The connection has been restored, and we are now testing.”

Value of Outsourced Operations Services: Procter & Gamble

Procter & Gamble has 80 Cisco TelePresence rooms and outsources ongoing operational support to free up the internal IT team to focus on strategic projects. Cisco Remote Management Services constantly monitors metrics from sessions to validate that the user experience is excellent. Although Cisco TelePresence System Manager automatically reports the number of hours a room is scheduled, P&G also wanted to track the number of hours the room is actually used. The services team fulfills the requirement by generating a report directly from the codec and informing the company when rooms are approaching 85 to 90 percent utilization.

Some of the benefits of working with a partner for operational support of business video solutions include:

- Operating system updates. Working with a partner is particularly useful for determining which operating system features are useful. Each release of Cisco IOS® Software might provide more than 1000 new features in a few dozen categories, such as security, throughput, and compatibility. Many IT teams do not have the resources to research which OS updates might be valuable in the environment. A services organization can recommend features that provide value in your environment, such as a feature that can increase throughput in your environment by 15 percent.
- Timely delivery of replacement hardware.

- Online technical resources and collaborative wikis that can help you resolve many issues internally, sometimes in less time than it takes to contact a partner.
- Access to a technical assistance center supporting phone, web, or email interactions.

Conclusion

Video is a highly visible service that can showcase the value of IT for business transformation. The way that video solutions are implemented, however, can affect first impressions. Even with the best planning, unexpected issues occur during implementation and are likely to arise sometime during the life of the solution. Working with a services partner helps to ensure an excellent user experience, provides a source of advice about updates, and frees up IT staff to focus on core activities.

For More Information

To find out more about business video services from Cisco Advanced Services, visit www.cisco.com/go/services/businessvideo.

To read the other white papers in the "Harnessing Business Video for Business Transformation Series," visit www.cisco.com/go/services/businessvideo/whitepapers.

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