



Measuring the ROI of Enterprise Video Communications

Techniques for Helping Corporate Executives Identify
the Financial and Strategic Benefits of EVC

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Executive Summary

Video in the enterprise is expanding rapidly as companies strive to communicate effectively, seek greater efficiencies and gain unique, competitive advantage. As adoption of systems to manage Enterprise Video Communications (EVC) becomes more common, companies are expected to justify the return on investment (ROI) and easily articulate the benefits for business users and IT teams. A summary of the primary benefit areas for business users and IT organizations is summarized in the column to the right.

Reducing costs is no longer the exclusive path to ROI justification. Today, many executives see tremendous value in relying on proven EVC solutions to help their business and IT teams succeed both internally and externally, as well as positively impact revenue growth in the near and long term. By emphasizing how EVC improves the communications and learning process, this paper is designed to help companies build an ROI case that goes beyond the elementary building blocks of a basic Excel spreadsheet.

The information and data presented in this paper comes from Interactive Media Strategies' (IMS) Enterprise Web Communications Surveys completed in December 2005 that canvassed 1,202 corporate executives in an online survey to gauge their use, perception and interest in a potential deployment of online multimedia and web conferencing applications.

What is clear from the data that has been collected is that EVC solutions are no longer a "technology future" positioned as a "nice to have investment" for organizations. The business and strategic benefits of EVC are far more developed, documented, and recognized than ever before, enabling organizations across industries to build solid business cases with very strong internal rates of return.

Business User Benefits

- Improve communications and meeting effectiveness across the enterprise
- Enhance sales force/channel effectiveness and reach
- Expand access to subject matter experts (SMEs) through online learning
- Accelerate sales generated by new product launches
- Track and report audience usage patterns
- Identify and generate new revenue streams
- Reduce time and expense of physically shipping DVDs, training collateral, etc.
- Improve customer support and information delivery
- Reduce travel costs

IT Team Benefits

- Centrally manage video environment
- Reduce time spent supporting video environment per live event or video on-demand (VOD) program
- Reduce time spent setting up security roles and access rights
- Deploy EVC to replace more costly and less efficient web technologies
- Search and retrieve video quickly and efficiently
- Replace or limit high cost satellite networks
- Distribute live video to remote offices without content delivery network (CDN) infrastructure
- Reduce time spent generating audience usage reports

II



Measuring the Business Benefits

Executives today are examining how technology cannot only reduce costs, but improve overall operations, and ultimately contribute to revenue generation for their organizations. The following section outlines key business benefit areas that can be realized with the implementation of an Enterprise Video Communications system.

Improve communications and meeting effectiveness across the enterprise

Enabling business users to create, edit, and publish compelling content and reach large, dispersed audiences is of great value to organizations with multiple geographic and divisional operations. With the introduction of an EVC system, an organization can distribute access to business users desiring to create live and VOD programs and liberate the business user community from extensive, per-program intervention and support from the IT organization. The ability to increase the frequency and impact of cross-location meetings, online training programs and corporate communications events are key factors in driving the enterprise to invest in EVC solutions that are reliable, scale to many thousands of viewers simultaneously, and enable playback and archiving over time.

Large Manufacturer of Aeronautics

With more than 140,000 employees located worldwide, maintaining consistent corporate branding across the enterprise was a major challenge for this multinational aeronautics manufacturer. The amount of video content was enormous, and indexing and searching was highly problematic. After implementing the EVC solution, within the first year, non-technical users were able to streamline brand consistency and messaging across the enterprise. Business users were able to easily publish, index and search video content within the video library, which doubled in size in the first 10 months. The ease with which business users were able to publish and access video content, coupled with brand/messaging consistency benefits, returned in excess of \$1M in value to the organization annually.

Enhance sales force/channel effectiveness and reach

Many companies are reducing costs and increasing the effectiveness of their sales process by using video to quickly train and communicate to their internal and external sales channel. Video-based sales and channel training allows a fully interactive learning experience to a large and/or on-demand audience, significantly reducing the need for "fly in" training events that are very costly to produce, generate enormous travel expenses, and reduce sales force time in the field. Also, video-based training enables companies to deliver more frequent and up-to-date training to the field, increasing sales representative success rates. Additionally, video content can be delivered directly to customers, allowing them to become familiar with new products, promotions, and special incentives. The combination of sales force training and direct customer messaging allows companies to reach a pre-messaged customer with a better trained sales representative, leading to shortened sales cycles and increased closure rates.

Telecommunications Equipment Manufacturer

The American sales unit of a Japanese telecommunications equipment manufacturer uses webcasting to supplement the training and support sessions it develops for its dealer network. If dealers in aggregate access just 200 webcasts a month, the company would have to invest an estimated \$19,000 in on-the-road trainers and sales people to create a program with the marketing impact comparable to the online training sessions. The annual value of the savings generated by the training webcasts is \$228,000.



Expand access to subject matter experts (SMEs) through online learning

Companies must also consider the benefits of facilitating knowledge transfer within and across departments, as well as to external customers and partners. With the implementation of an EVC system, subject matter experts are able to communicate both via live video communications as well as through on-demand video programs more frequently without having to travel and take time away from their work. Users of the EVC system can view live webcasts from the SMEs, or can search the system to acquire critical knowledge at any point in time.

Manufacturer of Industrial Chemicals

With over 17,000 employees located worldwide, this company utilized the power of webcasts as a key forum for generating personal connections and communicating leading-edge product information directly to all of their prospects and customers. Senior executives reported that as a result of communicating via these high-profile webcasts, their ability to open doors easily with new prospects was noticeably increased, leading to significant reductions in sale cycle times.

Accelerate sales generated by new product launches

By accelerating delivery of information about new product launches across departments and to the extended sales channel, companies are able to reduce product introduction timetables and increase speed to the customer. In many vertical markets, such as the pharmaceutical or financial services industries, the ability to shorten the time to market with a new product can generate millions of dollars per week in incremental revenues.

Manufacturer of Large Medical Product

This company reduced the number of product update sales visits by more than 50% after they adopted video to deliver information to market for all new product introductions and upgrades. New purchases and renewals of products based solely on information provided in their video programs accounted for 15% of the company's revenue stream in the first year.

Track and report audience usage patterns

Being able to provide statistical data on the usage of video programs is becoming a powerful tool for business executives. Advances in EVC reporting capabilities allow companies to assess what their employees are watching, examine how long they spent doing so, determine whether or not there were any problems with the transmission, and report on actions an individual took after viewing a particular video. The ability for a department, corporate communications for example, to understand which types of content are being viewed by audiences in different parts of the organization greatly enhances their ability to fine-tune future content creation, and optimize go-forward budget allocation. In organizations with training compliance requirements, as in the higher education market for example, functionality to report on audience viewership levels is a "must have" EVC system component.

Large University with Multiple Campus Locations

This University gets partial funding from the state and must strictly comply with training requirements that are issued by the state's comptroller's office. Prior to implementing the EVC solution, the IT team spent considerable time trying to determine who had attended the training classes and completed the courses that were required by the state. Comprehensive reporting capabilities built into their EVC solution allow the IT team to easily and quickly prove training conformance to the state, allowing the University to maintain their funding on an ongoing basis.



Identify and generate new revenue streams

Through the deployment of video communications, companies have the opportunity to tap into new corporate audiences willing to pay for access to their organizational expertise. Companies with a strong track record in a specific functional discipline, such as customer support or factory operations, have the opportunity to offer fee-based training courses to outside firms interested in learning state-of-the-art techniques in selected specialties. Such fee-based training may also come into play for companies that provide certification training on behalf of partner vendors.

Major Supplier of Computer Printer Parts

This supplier decided to offer repair technicians with the opportunity to attend web-based seminars to meet their vendor certification requirements. By offering an additional way for these individuals to learn, the company was able to get more people certified without incurring additional marketing support costs and generated more than \$50,000 in new revenue, increasing the company's training revenue stream by more than 25%.

Reduce time and expense of physically shipping DVDs, training collateral, etc.

Most large organizations have shipped VHS, DVD and CD-ROM physical copies of training materials to remote offices for years. The cost of generating physical copies, the hardware required and the shipping costs can be very significant for a large multi-national organization. In addition, there is no guarantee that the collateral will reach the recipient, and no way to determine if it has been viewed. EVC solutions can eliminate such costs completely and ensure that the content has been viewed by the recipient.

Manufacturer of Industrial Chemicals

With over 12,000 employees located worldwide, this company shipped thousands of VHS tapes that contained marketing and product presentations. The time and costs incurred in physically shipping these materials were exorbitant. After implementing just two webcasts, the company was able to off-set their entire investment in an EVC solution.

Improve customer support and information delivery

By making video versions of answers to customers' "frequently asked questions" available online, companies can both provide richer, more detailed information to their clients while also reducing the amount of time customer support center representatives need to spend with customers on the telephone to troubleshoot customer problems. Benefits can be measured in the elimination of time that would otherwise require the involvement of customer service representatives.

Manufacturer of Handheld Electronic Devices

This manufacturer implemented webcasting to develop on-demand product demonstrations and customer tutorials. The company estimates that it saved \$300,000 in support costs that would have been incurred had customers called toll-free lines to obtain product information. The manufacturer also reports that customers are more satisfied because the videos are available on-demand, eliminating the need to wait on hold to talk with product representatives. The company saw an additional unexpected benefit from deploying on-demand videos by increasing online product sales from customers that had simply gone online to learn how to do something with their PDA, and ended up buying new accessories and other products.



Reduce travel costs

The reduction in travel costs has been one of the most often cited benefits for enterprise video communications solutions. Companies are reducing the amount of travel in a number of ways. One of the most common is by presenting live and on-demand video content for communications and training of employees, customers, partners and other stakeholders. The time and cost savings can be readily quantified by determining the number of onsite meetings and training sessions eliminated with the introduction of an EVC system, multiplied by event attendees and average per-trip expenses.

Manufacturer of Industrial Gases

After implementing the EVC solution, this leading manufacturer reduced their travel spending by \$1.5 million per quarter – or \$6 million per year – solely by transitioning in-person meetings and training sessions to video webcasts.

Additional business benefits

Certain benefits are difficult to quantify but are worth mentioning because of the added value that they provide to the overall business case described in this paper. Gaining a clear understanding of the points raised here can make a positive impact on the success rate of implementing a sound EVC solution across the enterprise.

- Attract and keep top talent; Capture and retain key enterprise intellectual capital near and long-term
- Reduce time and resources spent crafting comprehensive messages and assembling memorable presentations
- Eliminate redundant communications efforts, training, etc.
- Boost value of the brand and clarify communications efforts by deploying consistent marketing messages and training materials
- Interact with audiences real-time and measure level of effectiveness of messages (e.g. live polling, live Q&A sessions, etc.)
- Optimize the experience for audiences and presenters (e.g. video informs and teaches easily and quickly)
- Utilize video communications to meet compliance requirements and guidelines
- Leverage expectations and trends in the enterprise that are common in the consumer market (e.g. video interviews of leading experts, product reviews, etc.)
- Repurpose existing video assets by converting content such as training on VHS tapes to on-demand videos available online or through the company's intranet

III



Measuring the IT Benefits

IT executives responsible for configuring and managing the underlying infrastructure required to deliver enterprise video are faced with a daunting challenge – “as adoption of video escalates in my organization, how will I be able to support each event and proactively monitor the environment?” Issues with multiple publishing points, disparate delivery networks, enterprise scale, system failover, security profiles, and ease of business user creation and access services are but a few of the challenges facing IT. Large enterprises that have confronted these issues have found that installing a platform system for all video applications, content, and resources provides a high-value and high-return approach to handling the complexity and the scalability across use cases and audience size. The following are key factors in considering IT benefits derived from the use of enterprise video communications technology.

Centrally manage video environment

The ability to manage both the video assets as well as the IT video infrastructure is something that most executives agree is the primary challenge faced by organizations implementing EVC solutions. Providing templates to ensure that the branding of all video presentations is consistent can save a lot of effort and policing of rogue video creators in an organization who may go a bit off the corporate standard if they are not provided with easy-to-use templates for the creation of their programs. People interviewed at an aerospace firm described their environment as a “hodge-podge” of video content that had a different look and feel and no continuity until an EVC solution was put in place to provide standard templates for everyone to use. Additionally, management of connections between the components of video infrastructure is an important benefit area. Having one central management system that maps all of the encoding and transcoding systems, streaming servers, content distribution networks, storage utilities, editing tools, portals etc., and automates many of the tasks required to configure and trigger each component, saves significant manual effort performed by IT staff to setup and execute video events.

Large Financial Institution

By replacing satellite delivery with the implementation of an EVC solution running on its corporate network, this large financial institution was able to reach geographically distributed offices by publishing video content to more than 30 corporate portals. This company projected a savings of \$4 million over a three year period related to the IT and business user efficiencies realized from the centrally managed, IP-based EVC system.



Reduce time spent supporting video environment per live event or VOD program

Most IT executives responsible for an organization's video infrastructure will highlight the difficulties of installing and setting up each component of the video infrastructure. While certain installation steps need to be taken individually, a central management system that provides form-based utilities to connect video infrastructure components can streamline the process significantly. Form-based tools allow an IT administrator to fill out a form once for each infrastructure component. Then, the system activates the connections amongst components automatically whenever a video event is set up or a video program is published for on-demand viewing. Such form-based set up utilities can save a tremendous amount of time configuring the EVC environment initially and over time.

Large Telecommunications Company

Prior to implementing an EVC system, the IT department of this telecommunications company spent 8 hours per event to prepare for each live video webcast. Following their successful EVC deployment, the average set up and support costs for a webcast has dropped to 20 minutes. This has enabled the company to triple the number of video webcasts (e.g. 80 company-wide) that can be supported continuously. The new EVC system has dramatically increased their efficiency and ability to scale the use of video communications across the enterprise.

Reduce time spent setting up security roles and access rights

Ensuring the right audience has easy access to a video program is a significant challenge for an IT team. Significant advances in technology have provided multiple layers of security for video content. The ability to synchronize the video environment with a LDAP system for authentication ensures access to video programming is handled based on enterprise groups that have already been defined and will continue to be updated as an organization grows and changes. Additionally, video publishing systems may automatically secure the URL location of the content to prevent hackers from identifying the IP address, and integration with DRM systems has become a significant factor to raise the level of security to ensure video content is protected. A system that automates all levels of security for video content can save an IT team countless hours of work to make sure highly sensitive content is protected.

Large Technology Company

For every one of the approximately 300 live video events executed per year, the IT team for this high tech company spent 6 hours per event to ensure proper security of the content and to prevent unwanted hacker access (approximately \$270,000 in man hour costs). With more than 60,000 employees located worldwide, this company has a very large LDAP system with thousands of defined groups. Automating a connection to this system for authentication provided a robust solution to ensure that only the correct level of employee is able to view a specific video event.



Deploy EVC to replace more costly and less efficient web technologies

Online video can provide both a more engaging and more cost efficient platform for distributing messages to large audiences than traditional web conferencing solutions. Also, eliminating the cost of large teleconferences that are associated with large-group web conferencing meetings can generate substantial savings rapidly while also enabling an enhanced corporate communications experience.

Fortune 500 Office Equipment Company

This company saved more than \$500,000 per year by switching from audio and web conferencing to webcasting for meetings and presentations of 50 people or more.

Search and retrieve video quickly and efficiently

The benefit of properly indexed video content can be seen in the reduction in the amount of time it takes for an individual user to locate a particular video program. Unlike traditional search of enterprise content management systems, video content is a more complex file type with limited text to enable an effective search. With the adoption of an enterprise video communications solution, each video program is managed in a central system that provides end users with tools to easily search by keyword or browse categories in a program browser interface. The location of a specific video presentation is accessed in a matter of seconds via a familiar browser interface.

Large University

Historically, this University copied video content and physically delivered it to various locations on campus. As a result, their exposure was limited to the local area. Consequently, increasing enrollment, attracting faculty and providing a variety of options for students to learn was a major challenge. After implementing the EVC solution, the University optimized their exposure outside of the local limits and tripled its reach to out-of-state applicants.

Replace or limit high cost satellite networks

Many firms in the Fortune 500 have begun using EVC solutions to replace satellite transmission of corporate events such as CEO presentations to remote offices. A leading mutual fund company that was interviewed spent more than \$200,000 on a single training event for their brokers-in-training. Under such conditions, the returns from generating an EVC solution can accrue rapidly.

Global Accounting and Professional Services Company

With 100,000 employees located worldwide, the need to communicate to large audiences of more than 1,000 people at remote sites was a requirement. This company spent \$150,000 per month transmitting video content via satellite. After implementing a webcasting solution, this company was able to reach these audiences for \$25,000 per month and still achieve a high level of broadcast quality.



Distribute live video to remote offices without content delivery network (CDN) infrastructure

When a live video broadcast needs to be seen by all employees in an organization regardless of whether they are in a main office location or a small remote branch, the ability to effectively reach all employees regardless of network topology is essential. Typically, large organizations have a hardware-based CDN infrastructure in place for all sizeable offices, which enables live multicast video. However, the CDN infrastructure rarely extends to smaller branch offices. With technology advances in software today, live video can now be extended beyond the CDN infrastructure and automated failover systems ensure that even if a connection is lost, a new one takes over before the end user is aware that there was ever a problem. This extension of the CDN infrastructure with software eliminates the significant hardware cost of building out the CDN to reach additional office locations or paying costly monthly fees to a public CDN.

Large International Banking Institution

It costs this company \$6,000 per branch to add new physical locations to the existing CDN infrastructure to receive video transmissions. The smaller branches experience a major delay because they are forced to wait for DVD shipments to arrive (e.g. bank avoids incurring costs for smaller branches). After implementing the EVC solution, the bank is now able to reach 100% of the employees and avoid delays of transmitting time-critical video content.

Reduce time spent generating audience usage reports

Technical teams responsible for managing video communications readily recognize the benefit of being able to produce reports quickly and easily. The height of report activity typically spikes immediately following a high profile executive video event, where interest in the timely return of audience success metrics is a focus. For many organizations, this means an IT person pulling logs of several servers individually and manually compiling the data into a spreadsheet or similar report. However, with the advances in EVC technology, a central system can now consolidate the logs automatically and generate reports instantly. Additionally, many systems now provide end user access to reports so the IT team may not need to be involved in report generation. Automating the reporting process saves many hours of IT staff time as the task of manually retrieving and compiling metrics is completely eliminated.

Large Defense Contractor

With over 80,000 employees in 400 locations, this manufacturer has discovered that webcasting can play a vital role in enabling effective corporate communications programs. The corporate communications team executes more than 300 video webcasts each year. Historically, it cost the company \$130,000 to track and report viewer activity. After implementing the EVC solution, the company can easily and quickly report 'real-time', reducing costs and the on-going drain on IT resources.

IV

EVC Implementation Costs

Of course-as the saying goes, "There is no free lunch." There are, indeed, costs that are incurred with every new deployment of enterprise video communications. Typical costs that should be considered in the equation, some of which will not apply to all firms or situations, are mentioned below:

- New server hardware costs
- Other hardware (e.g. cameras, studio equipment, digital signage devices, etc.)
- Annual maintenance for hardware purchases
- Costs for network and infrastructure upgrades
- Bandwidth costs
- Costs for software licenses or subscriptions
- Costs for annual software maintenance and upgrades
- Additional server software
- Costs for consulting or professional services from vendor(s)
- Costs for third party integration and consulting charges
- Costs for time required of internal IT staff for deployment and integration
- Employee training costs

V

ROI Workbook

Justifying the time and investment that is required to deploy enterprise video communications across the enterprise is a key task during the analysis phase of most EVC projects. Today, both business and IT executives have aggressive objectives that they are required to meet within set timeframes and allocated budgets.

While the benefits addressed in this paper are useful for business and IT executives in gaining clarity on why it makes sense to deploy EVC solutions, there is a great need for these individuals to arm themselves with tangible financial measures of the ROI benefits that result from the implementation of enterprise video.

Interactive Media Strategies has worked in partnership with Media Publisher to develop a tailored model that is designed to help executives identify and measure the likely financial benefits of enterprise video deployment and compare them with the upfront and on-going costs associated with the implementation of the technology.

Calculating the potential ROI of an enterprise video deployment is a fairly straight-forward process with this model. Executives are presented with a series of questions (in a ROI interview that lasts 10 to 15 minutes) on their anticipated spending and application uses for enterprise video. The ROI interview also collects information on current corporate practices for investing in and using other network-based communications technologies.

The information is then used to calculate a cash-flow analysis that demonstrates the total estimated financial benefit likely to accrue from the implementation of enterprise video technology and calculates the amount of time a company will need to break-even on their investment in enterprise video capabilities.

The ROI Workbook is based on the latest benefit information and benchmarks available in the EVC market. Though not every benefit will apply to every company, there is a great volume of market data and tangible benefit information to support virtually any organization attempting to justify an EVC investment. You are now ready to build your ROI model and enjoy the benefits of an Enterprise Video Communications platform!

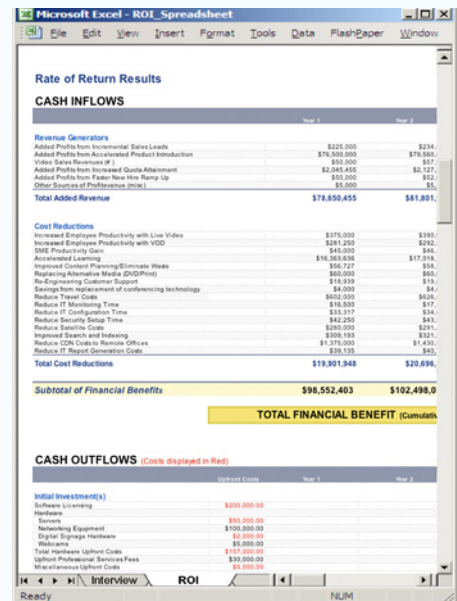
For additional support completing the ROI Workbook, the following contacts are available to assist you:

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ROI Interview Screen



Rate of Return Results

VII

Addendum

Customer Case Study: Fortune 50 Financial Institution

This case study is based on a large Fortune 50 multi-national financial institution with approximately 23,000 employees in offices distributed across North America, Europe and the Middle East. For years, the company has used video to communicate important information to employees. They conduct live video executive communications sessions once per week. The company also offers a variety of employee training programs to support ongoing learning on company HR policies, new product introductions and technical briefings.

Prior to EVC adoption, the company's video communications were comprised of satellite broadcast to larger facilities; VHS, DVD and CD duplication for distribution to smaller offices; and a significant outlay for trainer and executive travel. Programs for small numbers of employees were conducted at headquarters, but in response to feedback from employees and a desire to reduce travel, the company wanted to push content out into the field in a more timely manner without accruing additional distribution charges. Small offices had historically been unable to participate in live events via satellite. Thus, the company was forced to rely on duplicated content. This resulted in delayed timeliness of delivery of communications. Another limitation was that communications and training program managers lacked the ability to track program usage and to adapt their future programs to best meet the needs of target audiences. The two primary costs involved in the broadcast itself were the daily truck rental rate and the cost of satellite band space. Since each broadcast must also be recorded, duplicated and distributed, additional costs for editing, duplication and mailing copies to smaller offices and to employees who missed the live session needed to be factored in. The cost breakdown is shown in Table 1. In addition to executive live broadcasts, the company also distributes pre-recorded training content, with associated duplication and distribution costs. Editing costs, including insertion of slides into the video timeline, play a significant role in the cost, yielding a per-program cost of \$4,050 as seen in Table 2. Per year, the company produces 200 training modules at an anticipated annual total cost of \$810,000.

The company expected to ramp up live events by 10% within a year to 55 events. This incremental cost would exceed \$361,000. The number would increase to 115 live events by year three, at an approximate total variable cost of \$750,000 annually. The number of training modules was expected to expand by 25% or 50 modules more per year. By the end of year three, the expectation was that 300 pre-recorded modules will be produced annually at a cost of \$1.2 million. Totaled together, the total cost of ownership (TCO) for the original video delivery model would have exceeded \$1.15 million for the first year and approximately \$4.7 million over a three-year period, not including travel expenses.

**Table 1:
Live Satellite Solution Cost
Breakdown**

Event prep time (personnel)	\$72
Coordinate setup (per event)	\$36
Compose and issue broadcast invitation	\$10
Presentation (uplink cost 1 hour via Ku band and truck roll - assumes 20% discount)	\$2,720
Presentations support (engineer)	\$72
Polling post-event (polling software)	\$16
Duplicate event (outsourced - one per 50 employees)	\$3,500
Sending event materials (personnel costs)	\$145
Cost Per Live Event	\$6,571

**Table 2:
Pre-Recorded Per Program Cost
Breakdown**

Pre-creation phases of process	\$20
Creation/editing (three 20-min modules)	\$346
Web page creation (if applicable)	\$12
Compose/issue email with library update	\$5
Bundle other supporting materials	\$12
Program review/approval process	\$8
Duplicate event (outsourced - one per 50 employees)	\$3,500
Sending event materials (personnel costs)	\$145
Cost Per Live Event	\$4,048

A New EVC System

IT began its quest for the optimal EVC system that could be delivered as an in-house solution on the corporate network. A team assembled the following list of functional requirements.

- Ability to control multiple encoders and multiple bitrates
- Ability to synchronize content: graphics, slides, videos prior to or during an event, without requiring a lot of post-event work
- Customizable interfaces allowing easy look and feel changes
- Web search allowing users to find content via keyword
- Asset management for video content upload and storage
- Reporting tools to provide information on viewer activity
- Content distribution automation tools allowing creation of delivery groupings and business rules so that content could be automatically populated to groups of offices, “embargo” and “kill” options that allowed content to be moved during non-peak traffic hours, and automatic deletion capability
- Login controls and password protection at multiple levels

Total acquisition costs were determined to be \$911,418, including purchase of all EVC software, database, hardware located at headquarters, as well as CDN hardware and software for all other offices and first year maintenance fees.

EVC Usage Costs

IT management also wanted assurance that individual lines of business would bear the brunt of system operation costs, and that any costs for ongoing IT resources be known up front. Based upon customer experience, Media Publisher provided expected usage costs and more importantly, usage cost savings, explaining that Media Publisher software was specifically designed for operation by non-technical personnel such as office administrators, rather than requiring a programmer or network engineer to perform these duties, and further noting areas where Media Publisher software eliminated the need for manual intervention to complete tasks. Estimated per-event costs are presented in Table 3.

**Table 3:
EVC per Event Costs**

Live Video Webcast		
Webcast set up	Office Admin	\$2
Lobby configuration	Office Admin	\$6
Compose and issue webcast invitation	Office Admin	\$2
Bundle support materials for access during/after event	Office Admin	\$8
Slide synchronization	Office Admin	\$24
Simultaneous encoder control	Network Eng	\$5
Configure polls	Office Admin	\$8
Archiving of live event	Office Admin	\$8
Cost per event		\$63
Pre-Recorded Content		
Pre-creation phases of process (content gathering)	Office Admin	\$20
Program creation and editing (3 20-minute modules)	Graphic Arts	\$346
Web page creation	Graphic Arts	\$12
Compose and issue webcast invitation	Office Admin	\$2
Bundle support materials for access with program	Office Admin	\$8
Program review/approval process	Office Admin	\$8
Upload content	Office Admin	\$4
CDN Step 1= FTP files to each remote server	Inclusive	\$0
CDN Step 2= create URLs for each file, each data rate	Inclusive	\$0
CDN Step 3= build web pages accordingly	Inclusive	\$0
CDN Step 4= purge after desired timeframe	Inclusive	\$0
Cost per event		\$400

Comparing the EVC estimated per-event costs to the original systems' usage costs and applying these costs against anticipated content growth patterns along with EVC acquisition costs and three-years of maintenance, management arrived at the TCO comparison shown in Table 4.

Table 4:
Cost of Ownership Comparison

	EVC System	Original System
Acquisition Costs	\$911,418	\$0
Maintenance costs (2nd & 3rd yr)	\$233,535	\$0
Cost of Usage Year 1		
Cost/live event	\$63	\$6,571
# of live events	55	55
Cost/VOD event	\$400	\$4,048
# of VOD events	200	200
cost of usage subtotal	\$83,755	\$1,171,005
Cost of Usage Year 2		
cost/live event	\$63	\$6,571
# of live events	85	85
cost/VOD event	\$400	\$4,048
# of VOD events	250	250
cost of usage subtotal	\$105,355	\$1,570,535
Cost of Usage Year 3		
cost/live event	\$63	\$6,571
# of live events	115	115
cost/VOD event	\$400	\$4,048
# of VOD events	300	300
cost of usage subtotal	\$127,245	\$1,970,065
Cost of Usage (Years 1,2,3)	\$316,355	\$4,711,605
Total Cost of Ownership Savings		\$1,462,008

Total Cost of Ownership Comparison Conclusion

The conclusion was clear. The EVC solution provided a dramatically lower TCO over the three year period than the original communication methods. Corporate demand for video solutions is real. Fortunately, alternatives such as EVC meet the enterprise needs and criteria, and offer a compelling argument for implementing turn-key EVC solutions.

Customer Case Study: Large Telecommunications Company

For some companies, the biggest challenge in distributing online video to employees is never seen on-screen. That has been the experience of this major telecommunications services company that produces more than 75 online events incorporating video every year. For this firm, which regularly draws an average of 1,000 viewers to a single live video webcast, one of the huge hidden costs came from the upfront work required to set up the network systems needed to distribute a video webcast. For a live video webcast originating from a location other than its flagship broadcast studio, it would require eight hours of work by two webcasting experts in the company's IT department to make sure that the proper settings for encoding and distributing video content from a remote location were properly put into place in advance of an online executive presentation.

This company, which historically developed most of its video webcasting technologies in-house, discovered a way to dramatically cut its investment in time and resources devoted to webcasting by turning to technology developed by an outside vendor. The company deployed technology developed by Media Publisher to provide centralized management of the company's live video webcasting and growing library of video on-demand content, as well as the part of its data network being used increasingly to deliver video content to employees' desktops.

Using the Media Publisher EVC platform, the company has been able to dramatically reduce the amount of time spent provisioning remote locations for distribution of video content. A task that once took eight hours to accomplish now can be completed in a matter of 15 minutes. The company uses Media Publisher to provision network settings for up to 10 of its remote studios across the U.S. The task can be complex if done manually because the company has 150 offices across the U.S. that are multicast enabled and capable of receiving the company's regular video events. Now, the company can have a local media crew produce a video event originating from any of its 10 remote locations and have an infrastructure in place that makes it possible for these regional video professionals to encode and package video for online distribution without having extensive training in web distribution technologies.

An overview of the cost savings, mainly in the technical webcast team and networking areas, realized by this telecommunications company is detailed in the following table.

Cost Savings Analysis

Role	Work Performed for Live Video Webcast Event	Hours spent prior to EVC	Hours Post-EVC	Cost Savings Per Event
Executive Speaker / Presenter	Defines requirements for event Attends some planning meetings Obtains budget Edits presentation slides and speaker notes	5	3	\$398
Event Producer	Responsible for overall planning of the event Attends all planning meetings Confirms speakers and tech staff participation Writes copy for web pages May advance slides for speaker during the event Write polling questions to be used for the event	6.5	5.5	\$85
Technical Assistant (Administrative)	Sends invite to intended audience Tracks registration numbers and actual attendance numbers for reporting Proofing of slides and web pages	3	2	\$43
Technical Webcast Team	Performs network setup of studio facility or conference room Writes code for web registration pages Coordinates with Network Mgr for bandwidth needs and setup Establishes URL Does HTML for web pages Encode secondary media ahead of time Set up servers: IP address, playlists, pub points, multicast Set up encoder and AV Monitors infrastructure and troubleshoots Edit and trim resulting video archive for VOD publishing Update web pages post-event Publish VOD to CDN	16	1	\$1275
Network Team	Coordinate bandwidth needs from multiple groups to ensure health of the network Set up and maintain multicast network	5	1	\$341
Total Cost Savings Per Event:				\$2,142
Minimum # Events Per Year = 75 Total Annual Savings 1st Year:				\$160,650

The decision to adopt the Media Publisher EVC solution for this company has resulted in considerable savings, and has provided a true enterprise platform that can scale video distribution internationally with virtually unlimited capacity.

VII

Appendix A

Short Primer on Financial Metrics Used by CFOs

Many firms today require that a range of financial metrics be considered before making large technology investments. This is fast becoming the case with streaming media solutions and enterprise video communications, which are increasingly implemented as enterprise-wide deployments

Components of a Financial Analysis

There are many different components that make up a proper and effective analysis of the financial impact of making a technology investment. We provide an overview of some of the most pertinent and useful aspects of evaluating the costs and benefits derived from an investment in enterprise video communications and streaming media solutions.

First, a company must take a hard and comprehensive look at the costs associated with an investment, taking care to look beyond the obvious upfront costs involved in purchasing a particular type of solution.

The additional costs for new hardware such as servers or desktop upgrades, network enhancements, and professional services and consulting costs must also be factored in. Furthermore, a full view of the on-going and recurring costs involved, typically for a period of three years, should be included in the financial assessment.

Four of the most common metrics include ROI, DCF, IRR, and payback period. Each provides a somewhat different assessment of the potential value of an investment. These metrics are discussed in detail below, including their method of calculation, where they should be used as well as their inherent limitations.

Return on Investment (ROI)

One often used metric for the evaluation of technology investments is the return on investment (ROI). The total ROI is calculated by taking the Net Cash Flow of the accumulated net benefits (the total benefits less initial and ongoing costs) over a certain time period, divided by the total costs:

$$\text{ROI} = (\text{Total Benefits} - \text{Total Costs}) / \text{Total Costs.}$$

It should be well understood that an ROI is discussed as a percentage, not as a number of months or years required for payback. ROI should generally be presented in terms of the period covered by the analysis, such as an investment's "3-year ROI being X%."

As a simple example, an investment in an enterprise video communications technology that requires a \$250,000 initial investment, plus 20% annual maintenance fees (\$50,000) for three years, and generates net positive cash flows of \$100,000, \$300,000, and \$500,000 over three years, would be calculated as follows:

$$\begin{aligned} &(\text{Total Benefits} - \text{Total Costs}) / \text{Total Costs} = \text{ROI} \\ &(\$900,000 - \$400,000) / \$400,000 = 125\% \text{ 3-Year ROI} \end{aligned}$$

Although ROI is an often used metric in determining the financial impact of a particular technology investment, most financial managers also examine other metrics for investments in technologies that are going to yield benefits for three, five or even ten years. Other metrics can be used that take the time value of money into account, unlike ROI calculations.

Discounted Cash Flow (DCF)

For applications where the expected life of the technology, and the costs and financial benefits will occur over several years, CFOs of many firms want to examine discounted cash flow (DCF) calculations. Discounted cash flow is calculated by using an appropriate discount rate or a firm's cost of capital, to determine the net present value (NPV) of future cash flows resulting from a particular investment. A dollar saved three years from now is worth less than a dollar saved today. So if a company is in a high growth industry, they may require a far greater return on their invested capital than firms in slow growth sectors and the calculations behind discounted cash flow allow them to account for that factor.

Each company may have its own hurdle rate or cost of capital that it uses for DCF calculations, and this typically varies by industry type and size of company. A range of 5%

to 20% is likely to cover most of the companies that use such required rates of return for new technology investments.

In our \$250,000 initial investment example that also requires annual fees of \$50,000 were to yield net positive cash flows of \$100,000, \$300,000, and \$500,000 over three years, respectively, the DCF using a company's hypothetical discount rate of 20% would be about \$581,000.

Discounted cash flow is a calculation that generates a dollar value and not percentage return such as ROI does. Therefore it is quantifying the amount of return that may be generated, which is an important metric when deciding whether to deploy any new technology. Even if a new software solution would generate a very high ROI but would like generate only a small discounted cash flow, many CFO's may decide against deploying the solution and look elsewhere for an investment that could yield a far larger positive cash flow to the bottom line.

IRR

The internal rate of return (IRR) is defined as the discount rate that results in a net present value (NPV) of zero for a series of future cash flows. It is viewed as a "hurdle" rate of return by many firms that may mean an investment with an estimated IRR that is less than the desired rate of return or less than the firm's cost of capital may not get the green light. It is a calculation often used for capital budgeting purposes. It's the breakeven point at which the value of cash outflows equals the value of cash inflows.

IRR is useful in evaluating technology or investments where the costs and benefits are generally achieved over the course of many years and where there are both cash outflows (upfront investments) and cash inflows (returns). As mentioned before, whereas ROI does not take into account the time value of money, IRR examines the timing of the inflows and outflows to provide an assessment of the return generated if benefits are achieved earlier or later in the life cycle of the investment. If all the positive returns don't come until five years out, the IRR of that investment will be far lower than if the same returns were to be obtained in year two for example.

The IRR for the hypothetical investment we have presented in this report (\$250,000 in up front costs, and net positive cash flows of \$100,000, \$300,000, and \$500,000 during the first three years, is 41%, far lower than the simple ROI result of 125% because of the delayed benefits. This helps to

show why savvy CFOs look to more than a single financial metric when evaluating technology investments. ROI shows an overall return an investment can generate; DCF reflects the magnitude of the return in dollar terms, and IRR reveals the impact that the timing of the cash flows will have on the value of the investment. There is one additional metric often used for quick evaluation of an investment, the payback period.

Payback Period

The payback period of an investment is used by financial executive and business managers to determine the amount of time needed for an investment to generate cash flows to recover its initial costs. Some companies consider recurring costs as well as up-front costs when determining payback periods, but for the purposes of this report, just initial costs are used. The general formula to be used when calculating the potential payback period of an investment is shown below, using discounted net cash flow

Payback Period = (Initial Investment)/ Average DCF obtained

Payback Period = (\$250,000)/(\$581,000) = .7 years

Since the average discounted cash flow is used in this calculation, the payback period is similar to an ROI calculation in that it does not take into full account the effects of the timing of cash flows. Therefore, it is recommended that financial executives consider the full complement of financial metrics available to them when evaluating the merits of a particular investment.



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