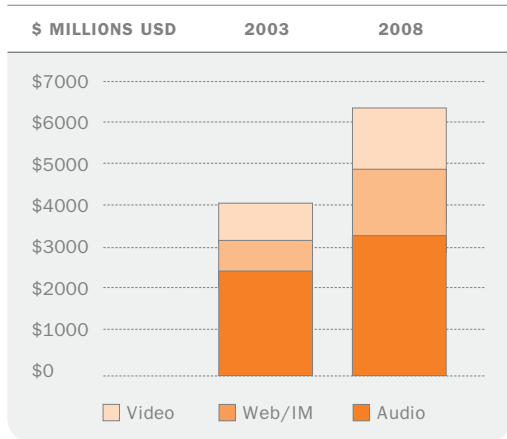


## Video Communications Industry Backgrounder

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### Rich Media Conferencing - WW Market

Wainhouse forecasts



### The Collaboration Universe *Products and services for audio, video and web collaboration as well as enterprise and consumer videoconferencing.*

PRODUCTS	COLLABORATION AND NETWORK SERVICES
Mobile Devices	3G Wireless
Streaming	Streaming & Webcasting
Audio Conferencing	Audio Bridging
Web Conferencing	Web Conferencing
Infrastructure	Bridges and Gateways, Gatekeepers & Proxies, Directory/Directory Services, NAT-Firewall Traversal
Group Video	Managed Video Services
Personal Video	
Consumer Video	IP Video/Chat Services

Network Services

Video-based elements

### What are the major videoconferencing market segments today?

Videoconferencing is part of a \$4-5 billion dollar real-time collaboration market that includes audio, video, and web conferencing products and services.

The videoconferencing **PRODUCTS** market includes:

**Group (sometimes called room) videoconferencing endpoints.** These are high-quality systems designed to be used in shared environments such as meeting rooms, boardrooms, and auditoriums.

**Desktop or personal videoconferencing systems.** With cameras and microphones designed for personal or single-person use, this product segment includes videophones, executive systems, and PC-based solutions optimized for the office and cubicle work environment.

**Video infrastructure:** Includes multipoint control units (MCUs), also known as bridges, that enable more than two participants to be in a single videoconference; gateways that connect users on different networks (typically IP and ISDN as well as PSTN), gatekeepers that provide sophisticated user and bandwidth management functions as well as directory services; and NAT-firewall traversal solutions that enable audio and video calls to connect across different networks and user domains. Many of these infrastructure products are available to end users on a “pay-as-you-go” basis by conferencing service providers.

### How are group videoconferencing systems and desktop videoconferencing systems the same and how are they different?

Both group and personal videoconferencing systems deliver audio and video signals between conferencing participants. Group systems use the best available pan-tilt-zoom cameras and microphone pods as well as a variety of speakers and displays, including projectors and large flat panels to provide the best possible conferencing experience. Group systems are often designed into custom room environments by A/V specialists with expertise in sound, lighting, and multimedia control systems.



TANDBERG 8000 MXP  
(group system)



TANDBERG 1000 MXP  
(personal system)

Personal videoconferencing systems are designed to work within an office environment and fit the enterprise desktop budget. Hence, speakers, microphones, and cameras are designed for “up-close” use and to enable privacy when needed. Personal video systems are evolving into personal rich media collaboration solutions with data sharing and instant messaging. These are becoming available as 1) stand-alone collaboration portals, 2) enhancements to the enterprise telephony infrastructure, and 3) features embedded within mainstream enterprise software applications and personal productivity tools. All three of these venues promise to make visual communications a part of the natural work environment.

Personal videoconferencing systems are also available for the consumer market. While inexpensive videophones are being touted by consumer services and by several Internet service providers, the most popular consumer videoconferencing products are based on PC-based webcams and software. With consumer videoconferencing technology, however, there is often significant reduction in quality, reliability, and functionality compared with business-quality solutions.

### **What are the major business trends that are encouraging customers to deploy these solutions?**

Enterprises today are increasingly aware that they need to compete on a worldwide basis, to strengthen corporate partnerships, and to improve productivity for all employees while maintaining tight cost controls. These are the primary driving forces for the deployment of videoconferencing and collaboration tools.

Videoconferencing and other rich media applications speed the communications process and enable enterprises to make better decisions in less time. Savvy businesses understand that collaboration solutions can improve their competitive position by enabling dispersed teams to work together more efficiently, by providing a richer and more intimate communications environment for customers, partners, and prospects, and by making training and e-learning more convenient, effective, and less costly.

**Outsourcing:** One trend that is increasingly in the limelight is outsourcing, particularly to specialized services in China and India; videoconferencing improves communications between teaming partners and helps make such business arrangements less costly and more productive.

**Teleworking:** Another trend is the use of teleworkers, enabling companies to save on real estate costs while employees save on commuting time and expenses while enjoying a “lifestyle” experience. Visual communications between office staff and home-based or remote-based employees helps develop a feeling of “connectedness.”

### **What are the major technology trends changing the videoconferencing industry?**

**IP Networks:** The video world is in the midst of a massive migration from circuit-switched ISDN transmission to packet-switched IP networks. IP promises lower costs, easier management, remote monitoring and control, higher bandwidth calls enabling higher quality audio and video, and integration into the corporate information technology mainstream.

**Video Compression:** Room video systems continue to improve in a continuous fashion along several fronts, including price, performance, and feature richness. New video compression schemes such as H.264 provide a 30-50% improvement in quality and enable TV quality video on inexpensive networks.

**Firewall Traversal:** A new recommendation approved by the ITU dubbed H.460 promises to make IP connectivity between different companies and different network providers easy and standardized. H.460 overcomes NAT and firewall issues that prevent many voice and video calls from connecting over IP networks; H.460 will break down one of the last remaining barriers to ubiquitous video calling.

# Question & Answer



TANDBERG 1500MXP

**Data Collaboration:** Now adopted by virtually all videoconferencing manufacturers, H.239 has standardized the way data sharing takes place over videoconferences, making it simple for users to see the presenter (people) and the presentation (data) at the same time. Having a collaboration session via an H.239 videoconference enables distributed teams to share PC-based documents while also enjoying visual communications.

**Video Integration:** Desktop or personal conferencing is undergoing a rapid transition as new systems come to market that enable video to be integrated into the enterprise workflow. Vendors such as TANDBERG are working with partners such as Microsoft and Cisco to provide personal video that works within the enterprise desktop environment and/or integrates to the enterprise telephone system. Desktop video is moving from being a stand-alone application to being a feature added on to PBX-based voice calls, instant messaging systems, and even front-line software applications like CRM and ERP. By bringing video into the enterprise workflow, integrated solutions promise to make video for the information worker more natural and easier-to-use.

**Wideband Audio:** Wideband audio accompanying videoconferencing provides rich sounds that go far beyond what is possible on the standard telephone network. Videoconferencing systems now support AAC, the same algorithm used in MP3 music players, greatly increasing speaker intelligibility and reducing “meeting fatigue.”

**Streaming:** Streaming and archiving functionality provide the ability to create, record and distribute video content easily, allowing users access to the content they need at a time most convenient for them.

## TANDBERG’s Three World Trends Impacting Adoption of Visual Communication

**1. Rise of global collaboration** - Teamwork has never been more important or challenging - leading to development and integration of workflow software. To be accepted by users, disparate applications are now required to have simplified form factors and user interfaces. Common standards ensure applications work together and give rise to multiple forms of collaboration.

TANDBERG’s integrations with Microsoft, Cisco and IBM applications and emphasis on standards are key to ensuring video fits into any collaborative workflow.

**2. Outsourcing and offshoring** - Competitive companies are moving their resources closer to the customer. That means an increase in distributed offices and more telecommuters. Any work that can be digitized can be sourced globally to the cheapest, smartest, or most efficient provider. Video helps companies build trust, ensure quality, and maintain company culture among a disbursed workforce.

TANDBERG’s firewall traversal solution and 3G video gateway help organizations of all kinds meet the challenges of a diverse, mobile workforce.

**3. In-forming** - Immediate and complete information access is no longer an advantage – it is a requirement. Net-gen users have an expectation that information and resources will be available to them when and where they need them.

TANDBERG’s streaming and archiving solution allows users to create and view content from anywhere, on their own schedule. With video, an ad-hoc meeting with a team member can be launched at any time.



TANDBERG is the first provider to bring 3G devices into a full, end-to-end video solution.

**3G:** Next generation wireless networks hold promise for video applications that require mobility, such as emergency response, site inspection, or staff who are often on the road, allowing users of 3G phones to connect in point-to-point or multipoint video calls.

**High Definition Video:** Videoconferencing systems supporting high definition (HD) and enhanced image resolutions are already on the horizon, promising even clearer and more detailed video.



TANDBERG Intern MXP



TANDBERG Utility MXP

## What are the major trends in videoconferencing applications?

Videoconferencing has long served as a general purpose or horizontal meeting tool. Hence, videoconferencing is used by a wide range of industries and government agencies today for business meetings. Videoconferencing has also been an important component of distance learning with K-12 and higher education institutions, enabling students to benefit from remote instructors and shared access to experts and specialized programs. In the past few years, videoconferencing has also moved into many interesting small and large niche areas such as:

**First responders:** Mobile and ruggedized video systems enable police, fire, and medical emergency crews to relay vital information in real time.

**Telemedicine:** Doctors can consult with specialists such as surgeons and cancer care physicians to speed decision making. Patients unable to attend remote clinics, too sick to travel, or under long term care can visit with nurses and doctors from the comfort of their homes

**Manufacturing:** Mobile videoconferencing systems enable remote experts to diagnose problems on the factory floor quickly and more accurately

**Banking and financial services:** Video enabled kiosks enable customers to talk to financial specialists about retirement plans, mortgages, education loans, etc. while banking institutions can leverage specialists across multiple regions and large geographies.

**Telejustice:** Videoconferencing is used in many different parts of the legal systems, enabling arraignments of dangerous prisoners without the risk and expense of moving them into the courtroom; allowing judges to preside over distant courtrooms, and enabling deposition of distant witnesses and experts.

**Cultural integration:** With the raft of mergers and acquisitions taking place, savvy acquiring companies are using videoconferencing to help integrate acquired personnel and acquired teams into the new culture and environment. Systems are often deployed in hallways and cafeterias to encourage employees to have “water cooler” type chat sessions with their new colleagues, rather than just through formal, scheduled video meetings.

**Telecommuters and teleworkers:** Video-enabled communications enables telecommuters and other remote workers to be more connected with their managers and to feel less removed from the center of activity.

## How do customers get a return on their conferencing and collaboration investments?

The payback from videoconferencing comes in a variety of ways, some easily measured, some not-so-easily quantified. These include:

- Reduction in travel expenses
- Reduction in employee time away from the office
- Faster product development cycles and shorter time-to-market
- Better hiring decisions from wider and deeper recruiting
- Improved work/life balance and hence higher employee retention
- Higher employee satisfaction from faster decision making
- Ability to use experts or employees in remote locations more easily
- Opportunity to expand services to a wider customer base
- Improved ability to foster partnerships
- Increased security
- Increased corporate contributions to environmental protection due to lower hydrocarbon emissions, reduced fuel consumption, and less traffic congestion

The secret to attaining the paybacks listed above lies in driving adoption of videoconferencing and collaboration technologies, making sure employees know how to use the tools available, and encouraging workers to use them as much as possible.