TECHNOLOGY INNOVATION IN VIDEO CONFERENCING OF THE YEAR

Recipient —HUAWEI TECHNOLOGIES CO., LTD

Market Overview

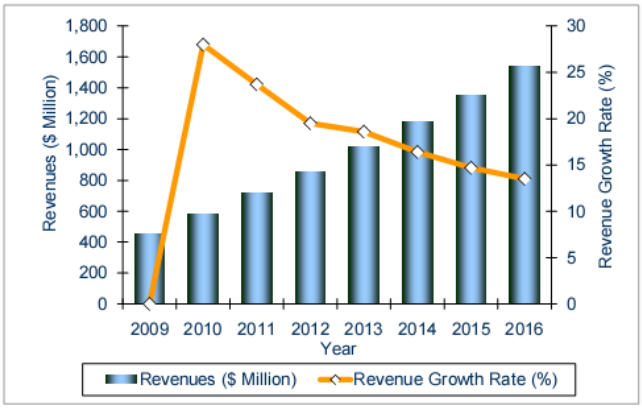
Videoconferencing is the conduct of a videoconference by a set of telecommunication technologies which allow two or more locations to interact via two-way video and audio transmissions simultaneously.

The consumerization of IT and viral growth of video in the consumer market, along with rapid adoption of social networks are changing the way people communicate. These mega trends are also bringing down the cultural barriers

that have traditionally restrained wider use of videoconferencing and are having a deep reaching positive impact on promoting video adoption. Videoconferencing infrastructure systems include the five major product categories: Videoconferencing, Gateways, Gatekeepers, Management and scheduling tools, Network Address Translation (NAT) /Firewall/ traversal solutions.

Global revenues for the videoconferencing infrastructure systems market reached $577.7 million in 2010 growing by a whopping 28.0 percent, representing the highest growth this market has seen in recent years. As users move to pervasive video to adopt videoconferencing as a key communication tool, the market is set to grow at strong pace over the next several years. The market is forecast to reach $1.53 billion by 2016 growing at a compound annual growth rate (CAGR) of 17.7 percent from 2010 to 2016.

Videoconferencing Infrastructure Systems Market: Revenue Forecasts (World), 2009-2016



Year	Revenues ($ Million)	Revenue Growth Rate (%)
2009	451.3	--
2010	577.7	28.0
2011	714.6	23.7
2012	854.0	19.5
2013	1,012.8	18.6
2014	1,178.9	16.4
2015	1,352.2	14.7
2016	1,534.8	13.5
CAGR (2010-2016): 17.7%		

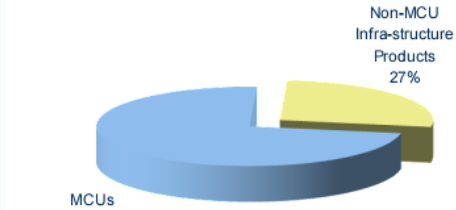
Compound Annual Growth Rate (2010-2016): 17.7%

Note: All figures are rounded; the base year is 2010. Source: Frost & Sullivan

MCUs make up a dominant portion of the overall videoconferencing infrastructure systems market contributing over 70% of the revenues in 2010.

The demand for other products such as firewall traversal and network management software will grow at faster pace over the next.

Total Market Size: $577.7 Million



Segment	2010 ($ Millions)	2009 ($ Millions)	Growth Rate (%)
MCUs	421.6	329.2	28.1
Non-MCU Infrastructure Products	156.1	122.1	27.8

Note: All figures are rounded; the base year is 2010. Source: Frost & Sullivan

Non-MCU products include Gateways, Gatekeepers, NAT/firewall traversal products, Scheduling and management software, Streaming and content management servers

The current generation of MCUs available in the market is largely based on an expensive and hardware intensive architecture that uses DSP boards to support the large amount of encode/ decode capability required to support HD videoconferencing. However, several companies such as Avistar, and Vidyo are propagating the use of cost effective software-based solutions. The market for software-based infrastructure products is expected to grow over the forecast period. Furthermore, with the anticipated adoption of mobile and desktop-based video the growth is expected to be sustained over the long term.

Video conferencing helps people to enhance meeting efficiency for its convenience, efficiency, and thus gets good commercial applications. Video conferencing technology continues to upgrade is an important driving force of its widespread popularity. It brings huge space for development for the video conferencing industry.

Scalable Video Coding (SVC) is prominently featuring in videoconferencing vendors' plans. SVC is increasingly being accepted in the market as a key

standard to enable videoconferencing that can dynamically adapt to varying network conditions such as packet loss, fluctuating network bandwidth, and network delay.

H.265 or High Efficiency Video Coding is considered a successor to H.264. Compared to H.264, H.265 is expected to have a bit rate reduction of 50% at the same perceived video quality.

The key aspects to the goals of creation of the standard revolve around simplicity of use, high coding efficiency, computational efficiency in the context of encoders and decoders, network-ready usage and a robust standard that would be efficient overall.

Videoconferencing in the cloud is a nascent market starting to evolve. New cloud services that combine hosted email, messaging, groupware, along with video and web collaboration will see greater adoption as users increasingly evaluate collaboration as part of a bigger enterprise communications purchase.

Evolving cloud-based videoconferencing services will enable end-to-end multitenant opex-based services which will fuel the demand among service providers. Cloud based services are expected to create greater penetration of Videoconferencing among SMBs.

Cloud-based videoconferencing services is an efficient, convenient, low-cost form of meeting. Video conferencing combining with cloud computing, brings the most convenient remote meeting experience.

High-definition video conferencing systems provides a more clear picture quality, better sound effects to participants and make participants communicate more effectively with high-quality experience.

A dominant number of endpoints are HD-based and also starting to increasingly being used in HD mode requiring upgrades to existing videoconferencing infrastructure products.

Telepresence has become an integral part of the wholesome "video experience" for enterprises that want to recreate the "in-person" meeting experience with life-size images of high quality, characterized by spatial audio and involving a service wrap-around.

Within telepresence, the custom and ready built solutions have steadily penetrated the global markets over the years. Although mainstream telepresence vendors focus on turnkey deployments, the potential that exists in supplying high end codecs to VARs and system integrators have also been tapped by market participants. 2010 witnessed a number of new initiatives by vendors who worked on blending the products and services into the customers' workflow, thereby dramatically easing the adoption of video.

Telepresence has created interest in HD video among SMB users who have found the costs prohibitive to deploy immersive telepresence as such. Managed services for telepresence have also gained popularity; there is a growing demand for third party providers who can seamlessly interconnect solutions from multiple vendors and provide a user-friendly offering.

Interoperability is a Core Issue. Users are increasingly demanding mixed vendor environments and looking to connect disparate solutions. The market at present

is witnessing many endpoints and infrastructure products with mixed protocols, creating interoperability issues that need to be addressed. Interoperability is key when it comes to telepresence in the enterprise. While there is considerable work that needs to be done, vendors are focusing on providing interoperability with other vendors' solutions. Service providers/carriers are introducing inter-exchange services that can connect to users on multiple networks.

Award Categories and Relevance

The video conferencing market is likely to maintain high growth rate in future three years. Frost & Sullivan research and strategic analysis of video conferencing market tracker has identified the Best Practices demonstrated by leading market participants in various categories. The research has also enabled identification of the company that has demonstrated excellence and leadership in different segments.

Award Description

- Research Methodology

In order to determine the final winner, the research team invested the end-user, enterprise and experts in the video conferencing field of research, and analyzed the final data deeply, and evaluated the major vendors. At last, we grant "Best Practice Award - TECHNOLOGY INNOVATION IN VIDEO CONFERENCING OF THE YEAR" to HUAWEI TECHNOLOGIES CO., LTD

- Measurement Criteria

We also applied a number of specific conditions to evaluate the main product suppliers in the area besides the above factors; the award-winning enterprise should have the excellent performance in the following indicators:

•Market share

•Potential of emerging markets

•SWOT analysis

•Market opportunity analysis

- Award Recipient and Justifications

Frost & Sullivan TECHNOLOGY INNOVATION IN VIDEO CONFERENCING OF THE YEAR is presented to HUAWEI TECHNOLOGIES CO., LTD., in recognition of the excellence demonstrated by the company in the area of video conferencing market. The award recognizes Huawei's long-term R&D effort and technology advantage and also acknowledges the company's consecutive efforts to improve the customer service.

Huawei is a leading global information and communications technology solutions provider. It provides competitive solutions and services to creating maximum value for telecom operators, enterprises and consumers. Huawei has established end-to-end advantages in telecom networks, devices and cloud computing.

Founded in 1987, Huawei has grown from a 5,680 USD small company to a global company with a sales volume of over 20 billion USD with business presence in over 140 countries thanks to the tireless efforts of its staff and the company's global-mindedness.

In 2010, Huawei achieved sales revenue of 185.2 billion CNY, a year-on-year increase of 24.2%. This progress was mainly driven by significant growth in our overseas markets as well as rapid and balanced development of our Telecom Networks, Devices and Global Services business segments.

Currently, Huawei has formed partnership with 45 of the world's top 50 telecom operators. As of the end of June 30, 2011, the number of Huawei employees has exceeded 120,000. Of the headcount, 44% of the employees are specialized in R&D. Huawei has joined 136 standard organizations, holding more than 180 positions， and has filed over 25,000 standards proposals in aggregate.

Huawei video conferencing solution is designed to build the effective and high-experience telepresence network with users across different regions and countries. By adopting Huawei’s video conferencing solution, users can largely reduce travel frequency and expenses, which not only saves time for them, but also contributes to the sustainability of the society and nature through energy conversation and emission reduction. The configuration is recommended to be as follows:

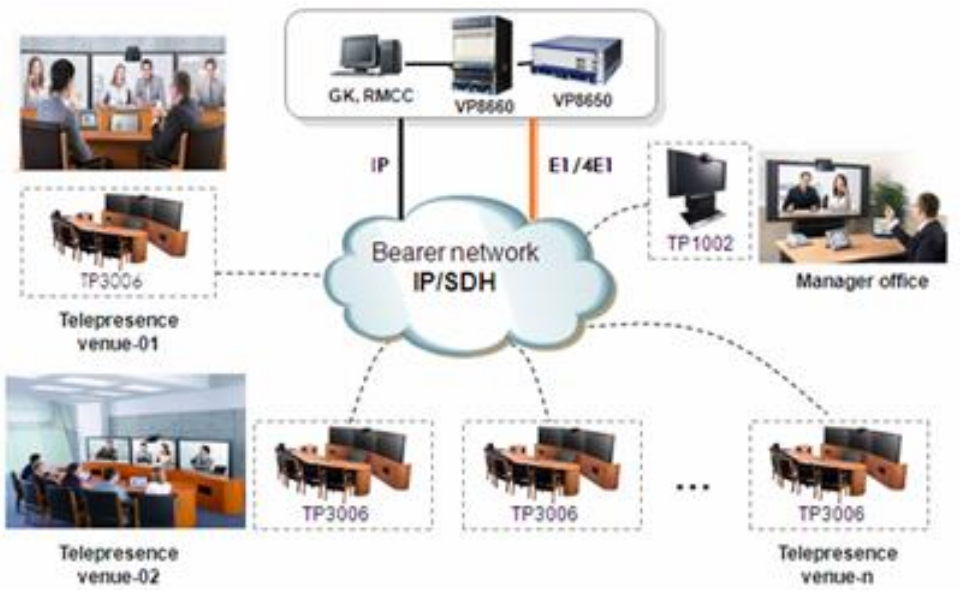
Telepresence system: The HQ (ministries and provincial HQ) as well as subordinate branches or Rep offices are recommended to equip with Huawei telepresence system. The system uses leading technologies in the industry, such as 48:9 video collection and 1080p life-size and ultimate HD. The system also offers unique features such as telepresence of life-size images with six seats, comprehensive voice/image apposition, and unified and visual touch control.

Multipoint Control Unit (MCU): The HQ (ministries and provincial HQs) are recommended to configure the capacity of their MCUs (up to 1024 sites with a single unit) based on the size of their subordinate organizations. Additionally

they are recommended to back up their MCUs in a "1 + 1" mode. Subordinate branches or Rep offices configure small and medium-sized MCUs. HQ MCUs and branch MCUs are cascaded through the IP, E1, or 4E1 network.

Business management system: Multiple features, such as resources management, meeting venue monitoring, and fault diagnosis, can be enabled through the business management unit.

The following is the network topology diagram:



Huawei's video conferencing solution owns special strengths and features:

- End- to- end 1080P@50/60 bringing the best user experience

The system offers life-size and ultimate HD, comprehensive voice/image apposition, and excellent HQ data. It can also provide hi-fi broadband voice experience with comprehensive voice/image apposition. As a result the far end can immediately identify the specific location wherever you stay in the meeting room. Interpersonal communication is no longer limited to voice and video.

Body movements, emotions, and eye communication can also be captured and conveyed through this solution. Meeting efficiency is greatly improved. Three automatically rolled displays that are specially designed can be fully integrated with the entire desktop, thus supporting automatic rollover. This not only facilitates activation when presenting HD data. Meanwhile this does not affect their normal visual communication of customers, to keep the entire desktop simple and clean.

- Standard infrastructure with outstanding interoperability

Huawei's video conferencing solution adopts the mainstream H.264 standard, yet it can also perfectly integrate with the traditional H.323 standard. Huawei's MCU is interoperable with other manufactures' MCUs, which indicates the interoperability of Huawei's telepresence system with standardized telepresence systems of other manufactures. In one video conference, Huawei's MCU supports the connections of terminals with different standards like H.320, H.323, SIP etc. Besides, the system allows integration with other applications like IMS, voice call, 3G video etc. and connection with multiple networks such as IP, E1, 4E1, and wireless.

- Easy-to-use and smart control center

The system uses the wireless touch screen and visual interface operation. Users can touch and control all the telepresence control throughout the meeting. The system is easy to use with its one touch.

- "VME+HP" driven, better with low broadband

Driven by Huawei's patented technology VME—— Video Motion Enhancement, and HP (HighProfile), the system is optimized in a number of aspects such as decrease of noise, enhancement of contrast etc. It can also save half of the previous broadband. For example, with the lowest 512K(per screen) broadband,

the 720P effect can be realized; while the 1M(per screen) broadband can realize the 1080P effect.

- Improved reliability and complete security safeguard

The system uses the multi-level reliability mechanism to improve reliability. The system layer and the central switch platform have quad backups respectively, to ensure that the video conference is perfectly secure. The support of H.235 signaling and media streaming encryption, integrated with Huawei's HD MCU and management platform, significantly safeguards a meeting and its contents.

- Perfect convergence control

The system easily manages the telepresence venue through Huawei videoconferencing console software (RMCC). The system can automatically switch between the audience venue and the broadcasting venue and always remain life-size images and the face-to-face effect. The system also helps realize control the meeting among the telepresence venue, the general HD venue, and the SD venue.

- Powerful self-adaptability

The powerful self-adaptability of Huawei’s video conferencing solution lies in three aspects: environment, network and terminal. With environment self-adaptability, the system can adjust to the appropriate brightness and contrast by itself, which can improve the effect of video conference on the basis of no extra efforts to operate the device. Network self-adaptability, focused on SEC, IRC, ROD and ARQ, enables the system to smartly adjust speed, correct errors and prevent against packet loss. And terminal self-adaptability increases the reliability of the telepresence system by adopting methods like fourfold backup etc.

Summary of Best Practice

- About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Each year, the awards Frost & Sullivan establishes are presented to the company with outstanding performance in various industries. Winners not only have strategic advantage in production innovation, but also have obtained maximum market share through effective marketing strategy in the past two or three years.

- About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation, and leadership. The company's Growth Partnership Service provides the CEO and CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages nearly 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 35 offices on 6 continents. To join our Growth Partnership, please visit http://www.frost.com.