

Video conferencing: advantages and disadvantages



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The exponential growth in the knowledge based society triggered by the equally strong impact of information technology and its various tools have expanded the human intellectual creativity. Information technology portal has thus enabled both the analysis as well as the development of ideas and concepts between individuals with the access of a simple computer and a telephone connection. The combination of a computer, a telephone and the services of an Internet Service Provider have given birth to a number of users to accomplish targets previously deemed to be impossible. The synergy of both information technology and the people behind the computer have resulted in the accomplishment of goals, in turn providing excellent results for their respective organizations. One such area of this new mode of exchanging information amongst the various information technology portals is video-conferencing, a development which has further reduced costs and time to take decisions, meet people, interact, learn and teach even from the comfort of their living or board rooms respectively. Certainly one of the most informative modes of telecommuting, video-conferencing has emerged as a strong tool for exchanging information, imparting training, and learning/teaching varied courses in both the business and academic environments. The following paper will strive to present some of the salient aspects and characteristics of video-conferencing, its uses, advantages, disadvantages, as well as analyse it from the perspective of business organizations, with a particular focus on use of video-conferencing as a means of communication for venue providers and event management organizations.

Our present day environment is evidence of an era in which time is the essence, and in majority of instances of crucial importance. This is true for both the fiercely competitive business environment as well as the ever fast pace of the knowledge based industries. A brief overview of the developments in the last two decades would reveal that the global economy has shown a somewhat similar set of trends as was witnessed during the era of industrialization some three centuries ago. Thus, one can easily observe the gradual transition from the industrial based economies to the present day knowledge based economy. This can be evidenced in practically every sphere of life, including but not limited to businesses, private and social lives. The onset and spread of information technology and its various modes are largely responsible for this significant transition. Today, access to information is not the domain of a few groups/regions and individuals, neither can it be manipulated; instead access to information is now possible through a personal computer, a telephone connection, and services of an Internet Service Provider. This has resulted in transforming information into one of the biggest challenges, and into a fully developed knowledge based economy. Those with the latest information in their respective disciplines are assumed successful, and this is only possible through the appropriate use of the modern tools of information technology, with video-conferencing as being one such tool. Such is the gravity, and need to acquire knowledge that one has to practically stay a few steps ahead of their nearest competitor, simply to exist in the present day competitive environment. The market dynamics and realities of respective industries practically force individuals and organizations alike to stay abreast and compete in the face of the allied challenges successfully. This is only possible by accepting challenges,

however intricate and large they may be, and converting them into effective source of knowledge. Using technology as a conduit for access to this knowledge not only saves significant resources, but also the factor of time as a crucial aspect is fully exploited and saved. It is this saving of time and resources that have given rise to such tools as video-conferencing, providing an edge to the patterns of doing business and living a successful life. Though marred by a number of drawbacks and disadvantages, video-conferencing has nevertheless emerged as one of the most effective tools of communications in the present day business environment; and it is this mode of modern communication, which will comprise a larger segment of the following paper.

According to the information accessed from the web pages of [www. whatis. com](http://www.whatis.com), videoconference is a means of communication between two groups of people from separate locations. Generally, video-conference involves the use of a audio, video, and ancillary equipment enabling both the groups of people to see, hear and converse with each other from multiple locations. Emerging from the environment of a boardroom, classroom, or a manufacturing site, video-conferencing provides each party to interact with each other as if they were sitting in front of each other in the same room. The single most important advantage of video-conferencing has been the provision of or enhancement of speed for the business processes and operations, just as the use of e-mail and facsimile has speeded up access to information. Some of the major benefits derived from video-conferencing include, but are not limited to cost savings in travel, accommodation, staff time, greater and enhanced communication amongst employees at distant

locations, and between suppliers and customers. (Video Conferencing UK, 2005)

As also briefly outlined in the opening paragraphs, it is the access to information and knowledge that has enabled individuals and organizations to stay abreast of their nearest competitors, an aspect that is true for businesses and academia alike. Simply put, a business organization cannot remain competitive if it does not have access to advance information in its respective industry; similarly a teacher cannot impart education/training to its pupils if he/she remains behind the latest set of researches and information about their respective subjects. Acknowledging the fact that the present day era in fact comprises of a networked environment, the importance of video-conferencing takes on truly dynamic dimensions. This is all the more true in the face of global events which can leave a devastating effect on the local and international economy, and upon which no individual, organization or country can command any measure of control.

Examples of such global events that have shattered economies, devastated entire countryside's, and left a trail of human misery and loss of property include the tragic events of September 11, the SARS (Severe Acute Respiratory Syndrome) virus of South East Asia, the devastating tidal waves of Tsunami destroying precious life and property from Island of Maldives in South East Asia to the shores of Dar-es-Salaam in the East African country of Tanzania. It is events such as stated in the preceding lines which makes the importance of communication tool of video-conferencing ever more critical in the present day environment.

The need for information technology tools such as video-conferencing is further precipitated in view of the diverse nature of our societies across the globe, which in turn give rise to political, economic, and social risks, the threat of global diseases, terrorism including bio-terrorism either or all of which then pose a significant challenge not only to the productivity and economics of a nation, but to the individuals and organizations across the globe as well. Just as the significant nature of advances in medical research that have triggered a revolution in the treatment and care of variety of diseases, the revolution in information technology has accomplished similar results, providing and collecting crucial data and information from every corner of the globe and atmosphere for the general benefit of global populations. Information technology tools such as video-conferencing have thus made it possible for providing better productivity and enhanced performance in our organizations allowing general populations to take preventive and corrective action in the face of emergencies, crisis situations, or even using it to raise production levels and launching new and better products in the face of severe competitions. Video-conferencing thus aids in the accomplishment of performance excellence, provides for an advance information portal to thwart off threats of disease, spread of virus, the onset of incoming natural calamities including storms, cyclones such as those witnessed in the Tsunami of December of 2004. It is thus essential for practically all businesses, academic institutions, government agencies, and the general populations to develop their respective multi-cultural and technology supported communication systems so that they are better able to address either of the said contingencies, and engage and use information

technology tools including video-conferencing to accomplish the same.

(Andersen, 2004)

Though the above sections have briefly outlined the growing importance of video-conferencing as an important tool of information technology, the following review of articles are a further attempt to provide evidence to this respect. The first article is titled “ Online In the Outback: The Use of Videoconferencing by Australian Aborigines” authored by Mark Hodges and published in “ Technology Review” issue of April 1996.

Upon reading the said article by Mark Hodges, it was evident that while the use of video-conferencing still remained a remote idea and its application still under-utilized in countries such as the United States of America and other European countries, the Walpiri aborigines of Tanami region of Australia’s Northern Territory have been effectively using this technology since 1993. The exchange of information through the use of video-conferencing given the name of ‘ Tanami Network’ taking its name from the region links some four settlements of Walpiri aborigines, as well as with the major Australian cities of Sydney, Darwin, and Alice Springs.

The use of video-conferencing for these aborigines has proved to such a successful venture that the aborigines are able to communicate and gain vital information from a number of government service providers located in the said urban cities; while at the same time video-conferencing has also provided these Walpiri aborigines access to customers and business organizations for Walpiri arts and crafts, established links with other

Australian aborigines and with indigenous populations living in countries of the world.

Also used for consultations amongst the aborigine leaders to arrive at important decisions for their traditional ceremonies and community related issues, the use of video-conferencing has successfully been expanded for such applications as access to educational programmes including adult and secondary education, teacher training, legal assistance, social security, and access for remote health care.

In essence, the Tanami Network, using the video-conferencing tool of information technology has thus provided these Australian aborigines an excellent portal for enhancing their quality of family and community life. Perhaps the single most important advantage gained by the use of video-conferencing technology by the Australian aborigines has been to overcome lack of communication factor within the close circle of family and friends, which even today stands threatened by alarming influence of Australian western culture as well as the geographic isolation of these fragile aborigines across the Australian continent.

Thus, video-conferencing has been successfully used in areas of education, ceremonial functions, decision-making, and access to health care, promotion of Aborigine artifacts arts and culture, and access to businesses located in urban areas of Australia, as well as far off places such as London and the United States of America respectively. The link created by video-conferencing with the aborigines living in other parts of the world is yet another major accomplishment of this technology. The use of video-

conferencing has thus resulted in the creation of a close network with Saami of Scandinavia, the Inupiat of Alaska, the Inuit of Canada, and the Little Red Cree Nation living in the state of Alberta in Canada.

A similar video-conferencing network also in Australia provided aborigine students of New South Wales the opportunity to continue secondary education. Providing a link between 4 schools situated in remote locations, the students use the video-conferencing technology to finish the final 2 years of their education, against the option to either drop out of school, or the more expensive option of joining a boarding school located at a distance ranging from 200 to 400 kilometers. In addition to the crucial opportunity to continue education for the aborigine students, the video-conferencing technology also provides these populations with topics and subjects otherwise not available within the confines of the aborigine community. (Hodges, 1996; Fischer, 1992; Munn, 1973; Young, 1995)

The above sections have briefly provided some of the salient features and uses of video-conferencing in present day environment, as well as touched upon the subject of some of the situations where video-conferencing as a tool of information technology can save precious lives and property. The following section comprises of a brief overview of the development of video-conferencing over the last 5 years in particular, and its introduction as an important tool for exchanging information over the last few decades.

A brief on the development over the last 3 decades of information technology shows that, indeed video-conferencing emerged as one of the most viable forms of communication as compared to the standard telephone

set originally created by Graham Bell. Some of the first impressions of video-conferencing reveal that it comprises of being expensive, does not portray the images as may be required, may not work due to inadequate bandwidths or unavailability of a suitable phone connection, difficulties in establishing the ancillary equipment such as the monitors and the network of cords and wires, or as simple excuses as the way people would actually appear on a monitor screen, and the list simply may go on.

Yet, all these and other excuses are now history, as the last 5 years have witnessed a tremendous growth and development of an entirely new set of equipment together with relevant advances in telecommunication technology. This has made the use of video-conferencing mode of communication not only cost effective; but the hardware and software now in use are fairly easy to use with minimum of training required. This has fulfilled the two most important demands of the business circles across the globe; first video-conferencing has brought a significant reduction in travel expenses, and secondly, it has made communication between people scattered across continents fairly simple and within the grasp of general populations/communities.

In fact studies carried out by Wainhouse Research noted that since the onset of easy-to-use software, cost effective hardware and access to telephone lines in the last 2 years, there has been a steady growth of approximately 30 percent in annual revenues across the video-conferencing industry.

The availability of such equipment as web-camera is yet another evolution which has turned a simple desk-top computer into a ' digital-media' thus

changing the traditional video-conferencing technology into a new spectrum, and providing practically everyone with a desk-top, a telephone line, and a good Internet connection with a modern video-conferencing technology.

The last 5 years have also witnessed the introduction of Integrated Services Digital Network (ISDN) -based networks with Internet Protocol (IP) systems, even though the first still dominate majority of the videoconference industry across the globe. Studies carried out by Frost & Sullivan on the use of Internet noted that more than 95 percent of the videoconferences used the ISDN networks; the same study also noted that 20 percent of the entire video-conferencing by groups and organizations was done through the Internet Protocol, and more than 92 percent of personal video-conferencing was IP based respectively.

A brief comparison between IP based networks for video-conferencing and ISDN networking shows that IP based networking for video-conferencing is economical, provides for an exchange of information and data in a better manner, offers an easy integration option of video-conferencing and desk-top computers, and the facility of a better managed video-conferencing network. The same study also show that by next year, the differences between ISDN based network and IP-based networks for video-conferencing will be practically eliminated.

Another major development in the video-conferencing industry is the growing demand for managing video-conferencing by organizations at their own premises and using the same staff. Respective employees in the information technology departments such as storage of data and e-mail

management in addition to the responsibilities already handle this. With the new responsibilities of managing video-conferencing over traditional networking functions, this is indeed a major shift in the video-conferencing industry. The new trends of using desktop computers as hubs for video-conferencing are also a source of worry for companies and organizations engaged with or providing specific software and equipment for the video-conferencing industry. Some of the organizations worthy of mentioning involved in products and services for the video-conferencing industry include Avaya, Cisco, Microsoft, and Nortel Networks.

With the desktop computer already in use as a hub for video-conferencing, the video-conferencing industry is coming up with ever-new developments and technologies constantly in search of upgrading the quality of both audio and video images to be transmitted over the network.

Some of the modern tools introduced include the videophone, a product launched by Motorola/World Gate Communications, which transmits full-motion video images with an excellent audio levels requiring a high speed Internet connection, yet in appearance it is simply a cellular (mobile) phone.

The LCD-Integrated Display is yet another modern tool for communication. This is an advanced version and a combination of integrated video-conferencing codecs, cameras, microphones and speakers all installed within the desktop computer. Already introduced by three major manufacturers, namely Polycom, Sony and Tanberg, each of the companies have successfully launched their products featuring the said characteristics for videoconferencing. Sony's model PCS-TL50 perhaps stands out as the most

advanced version, as it can perform the double function of desktop computer display, as well as easily switched on to video-conference monitor.

Another development is the software based video-conferencing technology. Polycom's desktop model PVX is one such example of this new technology, which only requires a USB web-cam, a desktop computer, and software from either of the vendors in the video-conferencing industry. The significant feature of software-based video-conferencing is that it offers high-resolution pictures and high levels of audio. Polycom's PVX model offers a 30-frames per second picture frame, while the quality of sound is at 14kHz; making it one of best performing information technology tools in video-conferencing. (Regenold, 2005)

As also reiterated in the above sections of the paper, the information technology portal of video-conferencing has proved its worth due to its tremendous potential to reach anywhere and at any time. In addition, the physical presence is totally eliminated for imparting training, education, or merely exchanging information with employees of the same organization. An overview of the different situations and sectors where video-conferencing is widely applied includes education and professional training, though it is also used in vital meetings amongst board members of an organization situated in distant locations across the globe.

Though professional training and corporate application in business organization is said to be the most important application of video-conferencing, it is the arena of education where its application has proved most beneficial. As also described in the above case studies of Aborigines of

Australia receiving feedback and information from distant locations as far as London and the United States of America, or receiving education within the vast territories of the Australian continent, video-conferencing has truly added new dimensions in the discipline of education.

One may note that though video-conferencing in the arena of education has been in practice for a number of years, its combination with online form of education has added significant value to the discipline of education. Both these technologies of video-conferencing and Online have thus not only improved the quality of education as visual cues and body language are utilized in video-conferencing, the technological pairing of the two has allowed for the provision of education experts without the need to physically call them. Thus, both the factor of time and place have been made independent, as also bringing a significant reduction in the costs of travel that would otherwise be required to move experts from one location to another. (Reed & Woodruff, 1995; Willis, 1996)

From the above it would be evident that video-conferencing and Online mode of education when combined truly offers an excellent form of imparting education minus the numerous obstacles that may be required in the absence of both the said technology portals. However, there are numerous studies which provide significant evidence that video-conference even when combined with Online form of education has its own set of limitations, and perhaps these limitations are the reasons for the inability to make video-conferencing a virtual success.

One such limitation, and perhaps greatest obstacle is the lack of interaction amongst the participants of a conference-conference. Also termed as “talking heads”, this format of imparting education and training is observed to lose its viability in the absence of true interaction, or failure to encourage participants to actively participate in the respective education/training program. In this context, one may observe that a face-to-face presentation comprising of no less than 50-minutes is it a tiring experience for the participants, and to bear a lecture through video-conferencing is practically an impossible exercise.

As also evident through a number of studies, a one-sided lecture can only remain productive, or majority of participants remain active listeners for a maximum of 20 minutes only. After the passage of approximately 20 minutes into the one-sided lecture, an atmosphere of drowsiness can be witnessed amongst the participants. It is this fact, due to which video-conferencing even with the assistance of Online technology has not really been a favorite form of imparting education or training.

There are however two methods or solutions for addressing such dilemmas as the lack of interaction amongst the participants. First is the pedagogical approach, while the second solution is through the effective use of technological aides.

In the pedagogical approach for addressing the lack of interaction amongst the participants, there are three basic principals, which can provide avenues for active participation from the participants.

Firstpoint is breaking the ice. These are creation of an atmosphere which provides for a motivating factor, in turn pushing the participants to actively take part in the ongoing lecture while there are amidst a video-conference; this motivation and the respective atmosphere also allows for overcoming feelings of self-consciousness. This is also called breaking the ice.

Secondly, the shorter a lecture and more focused it is, the better outcome in the shape of interaction by the participants, as well as easy transfer of knowledge/training text is observed. One way to accomplish this, and make presentations short is to provide a break after every 20 minutes, and engage the participants in some form of activity.

Third point, and perhaps the most important is the officering participants to get involved in the interaction, and not to leave upon them to decide whether or not to participate. This factor is also important, as it allows for both breaking the ice, as well as breaking the same lecture or training session into a number of segments, each supported by a separate form of activity from the participants. Involving participants and engaging them for active interaction can be accomplished by involving them in debates between number of experts of the same discipline, through the adoption of role models or role-playing, putting controversial questions to the participants so that they are able to offer a variety of answers to the same question, instead of asking a question which only has one answer. This third point of involving the participants also implies that interaction amongst the participants has to pre-planned prior to the actual video-conference session, and cannot be simply pursued during the respective session or educational text. Though this form of inviting and engaging the participants is truly

effective in delivering a truly successful lecture or training program whether professional or educational, its single largest drawback lies in the fact that this can only be practiced and implemented in a live presentation or videoconference.

Addressing the dilemma or failure to actively participate in a videoconference from a technological perspective can be accomplished through the application of recorded messages, or training programmes. In this manner, the participants can gain access to the respective educational/training material at their own disposal, normally through the use of Internet. (Shearer, 2003; Kunz, 2000)

It allows for the utilization of existing and proven technologies.

There is significantly little training required.

Video-conferencing can be used in a number of settings, environments, and configurations.

It is one of the most practical tools for creating a direct liaison with both audio as well as visual linkages amongst the participants.

The operating costs are comparatively less, and this too depends on the distance and number of sites.

Taking the case of an interview of a potential candidate by a committee of officials within an organization (such as interviewing a candidate to fulfill a faculty position in an academic institution) shows that advantages of video-conferencing far outweigh the disadvantages. First of all, convenience of the

applicant is at the forefront followed by significant reduction in travel costs, time otherwise needed for the primary responsibilities. Then there is the additional advantage of videotaping the entire proceedings of the interview, for later screening, as well as for those concerned officials who may not be available for the interview.

One of the profound and proven advantages of video-conferencing has been observed in the teaching/learning environment of academic institutions. With exponential growth in the learning/teaching environment, in particular through the use of ' Online' forms of education, videoconference has provided new dimensions to the teaching and learning situations. Though there emerges the need for specific equipment and personnel for video-conferencing, the basic requirement of an Internet Service Provider, a laptop or computer and a web-camera are all that is required for video-conferencing to take place.

Video-conferencing has also found tremendous advantages amongst teachers and pupils for a one-to-one teaching format, and communication with small groups of students located in distance locations. This is particularly true since the onset of ' Internet' as a means of direct communication. The same application has also found tremendous advantages for business communications for both long distance meetings, and one-to-one contact with employees located in distance branches of the respective organization.

Though relatively less in usage, the use of ISDN conferencing is an advanced version of video-conferencing, which provides for significantly better quality

of both audio and video. The principle usage of the ISDN form of conference-conference is in the learning/ teaching environment where there exists the need to 'ask the expert'. It is this advantage of calling upon external experts in far off locations that this ISDN video-conferencing is best applied. Another advantage of this form of video-conferencing is the facility to support entire group of professionals or students and involve them in the teaching/learning environment through direct interaction.

One of the disadvantages of video-conferencing is observed in the initial establishment costs, which can be high as compared to traditional modes of meetings.

Video-conferencing is still considered an evolving technology, hence standardization and its usage is yet to be fully developed.

One of the major restraining factors and a disadvantage of video-conferencing is the inadequate infrastructure of local telephone networks, which is one of the prime requisites.

Expansion of video-conferencing facilities and locations require substantial financing, hence its utility remains limited.

The operational costs of videoconference also serve as an impediment.

Taking the same example of an interview of a candidate by a team of officials of an organization, there also exist disadvantages of video-conferencing; these can include potential technical difficulties such as problems with the software, hardware, and/or failure of the network. Though these problems could well be tested prior to the actual event, such as the <https://assignbuster.com/video-conferencing-advantages-and-disadvantages/>

interview, there is always the possibility of an unexpected technical problem to emerge either before or even during the actual video-conferencing activity.

A major impediment in video-conferencing is the lack of personal interaction, a factor that is often regarded as an important feature of any meeting, interview or feedback. A prime example of lack of personal interaction can be observed in the ever-important handshake that is considered an important aspect in the conclusion of a business meeting, or the successful completion of an interview.

Then there is the aspect of eye contact, which too remains absent during a videoconference; as eye-contact serves as an important feature for physical assessment of an individual (such as an applicant during an interview), and situations during a videoconference.

Another disadvantage observed during a videoconference is the absence of trained and support personnel, in turn creating a host of problems for participants who may be unfamiliar with the video-conferencing equipment/environment, with the result that the same videoconference would make matters worse instead of providing facility for the participants.

The disadvantages observed in the ISDN form of video-conferencing are the relative high costs incurred in the installation, rental and call charges. In addition the specific equipment for video-conferencing required for supporting ISDN too is costly. Then there is the difficult pattern of understanding data collaboration in ISDN, which is difficult to use, making it a disadvantage for video-conferencing.

Conclusion

The above paper strives to present the topic of video-conferencing in a number of perspectives, and provides evidence in respect of the popularity one of the most advanced forms of communication prevalent today in various industries. Whether it is the arena of academia, business organizations, professional trainers, to government offices, the information technology portal of video-conferencing h