

**Brockmann & Company**

# The Executive's Guide to High Definition Video Conferencing

# Executive Summary

## Key Findings

- Video conferencing is for market winners: its extensive use leads to higher business performance
- Video conferencing sessions create time: they're shorter on average than face-to-face meetings
- The critical success factors are Adoption, Accessibility and Quality
- 5 key considerations are reviewed

This paper is designed to equip an executive decision maker with the details they need to know to be able to make effective decisions about high definition (HD) video conferencing projects within the firm.

The video conferencing environment has changed a great deal in the past five years:

- HD visual and audio quality is readily available costing well under \$10,000 per endpoint.
- Multi-megabit per second Internet connections can be deployed in most locations around the world - even home offices - in 30 days or less and cost less than \$100/month.
- Sophisticated software makes initiating a video session a pleasant and trivial procedure.

New applications and new classes of users are in a position to quickly capture the benefits of HD video conferencing. Independent research involving hundreds of business users show that organizations that leverage the video conferencing experience also have higher business performance: higher revenues per employee, higher customer satisfaction and higher employee satisfaction. As well, video conferencing saves time and avoids the hassles of modern business travel.

Studies of Top Performers show that the success factors of adoption, accessibility and quality are the critical ingredients of successful video conferencing implementations. Adoption is about imbedding the service into the way employees do things. Accessibility refers to the convenience of participation. Quality is about allowing only the smallest of gaps between users expectations from their video conferencing experience, and the actual quality of the encounter with the technology. All three are interdependent and must be present to assure an effective and growing implementation.

Finally, five key considerations are discussed to determine if the proposed implementation goes far enough, thinks long-term enough, is resourced within the network to assure a high quality experience, encompasses customers and suppliers and has the measurement practices in place to assure monitoring of project success and milestones.

# Why Should We Do This?

In a recent ad hoc poll, some 40% of business users have not experienced a video conference in the past year.

Executives who have never used video conferencing are often curious about how video conferencing might impact their existing collaboration services – the face-to-face meeting, web collaboration and audio conferencing session. They often see the prospects of engaging professional business-class high definition (HD) video conferencing products and services as a daunting technical and performance exercise and perhaps a little overkill. For them, the most frequent question is ‘**Why** should we do this?’

Other executives that have used the classic implementation of standard definition video conferencing with complex session setups, unreliable equipment and poor quality images (pixilation, out-of-sync audio, blurry visuals) ask a slightly different question. They ask – ‘Why should we do **this**?’

In both cases, it is imperative to recognize that many things in the video conferencing domain have changed in the past five years. New standards and technologies, new high speed network services and new levels of user expectations have changed the quality, cost and reliability of video conferencing services.

These changes in the video conferencing market have been driven by advances in devices and networks for consumers. Consumer demand for HD TVs, tuners, projection systems, flat panel monitors, cameras in mobile phones, digital cameras and even HD video recorders have stimulated the chip industry to develop and market new multimedia ASICs and architectures which have, in turn enabled amazing software innovations.

Similarly, the consumer demand for inexpensive Megabit Internet service from their local telephone or cable company has created the widespread and inexpensive availability of IP services around the world, that are also conveniently available for business users too. These two market changes are impressive in their own right, but when coupled with the third dimension – a higher user expectation for high quality visual communications as established by users’ home entertainment experience –the key ingredients of the Perfect Storm<sup>1</sup> are present and interacting to amplify the effects of each dimension. This combination of factors create and feed the trends that show how video conferencing today is completely different than video conferencing of five years ago, and give us an insight as to how video conferencing in the future will only grow more pervasive.

## The Economics of Video Conferencing

Video conferencing is quite inexpensive compared to the cost of business travel in three major currencies – in dollars, in traveler time, and in terms of greenhouse gases as shown in figure 1. And depending on the locations involved and styles of systems implemented, impacts on the intra-company and inter-company travel spending can be dramatic.

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<sup>1</sup> Brockmann & Company, [The Perfect Storm: Why Video Conferencing Will Dominate Business Communications](#), 2007

**Figure 1 – Comparing the costs of a 1-hour face-to-face meeting 560 miles away (Boston - Philadelphia) with a 1-hour video conference.**

Feature	Currency	Fly	Video Conference
Airfare	\$	Yes	No
Drive 40 miles to airport (return)	Greenhouse gas	80 miles	No
Airport parking	\$	Yes	No
Tolls in hometown	\$	Yes	No
Rental car in destination city	\$	Yes	No
Drive 40 miles in destination city (return)	Greenhouse gas	80 miles	No
Tolls in destination city	\$	Yes	No
Parking in destination city	\$	Yes	No
Flying to/from airports (return)	\$	Yes	No
Carbon dioxide produced from air travel	Greenhouse gas	358 lbs	0 lbs
Carbon dioxide produced from driving	Greenhouse gas	150 lbs	0 lbs
<b>Total time (1.5 hour flight)</b>	<b>Time</b>	<b>7 hours</b>	<b>1 hour</b>
Expense report required	Time	0.25 hours	No

But video conferencing is not just about reduced travel and carbon dioxide avoidance. It has a big impact on business performance. In our study of 350 business users of video conferencing, the Top Performers being the largest consumers of video conferencing services compared to the Poor Performers or least frequent consumers had significantly stronger business performance:

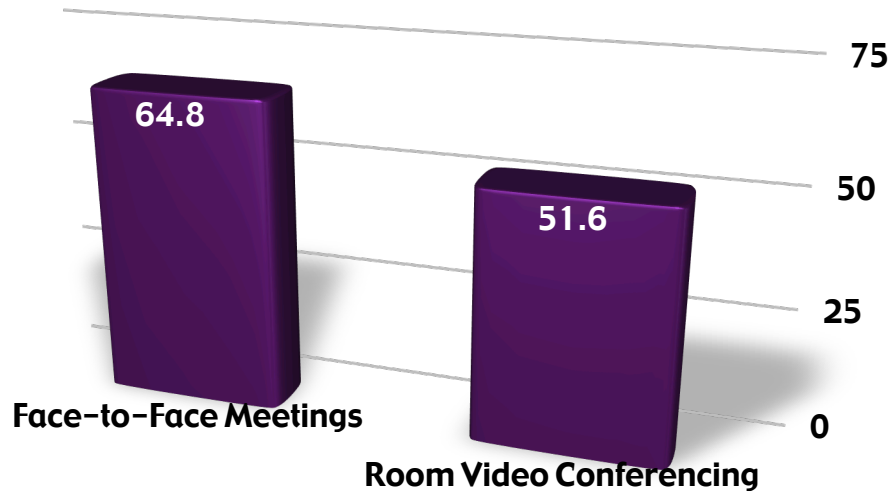
- 20% higher customer satisfaction
- 72% higher employee satisfaction
- 85% more revenue per employee
- 20% more market share

**Video conferencing is for market winners.**

More significantly than perhaps the cash costs avoided, are the hours and hours of time saved. Employee productivity is a powerful element of the business case for video conferencing. Saving 13 minutes in every video conference instead of face-to-face meeting as shown in figure 2 are helpful, but the real benefit is in avoided travel time as shown in table 1.

Saving 7 hours of travel time, as in the comparison in table 1, includes avoiding time spent arranging the travel, time spent driving to/from the airport, time spent standing in lines, airport security and otherwise not doing the things the employee is paid to do. Travel does tend to involve a lot of unproductive and avoidable employee time.

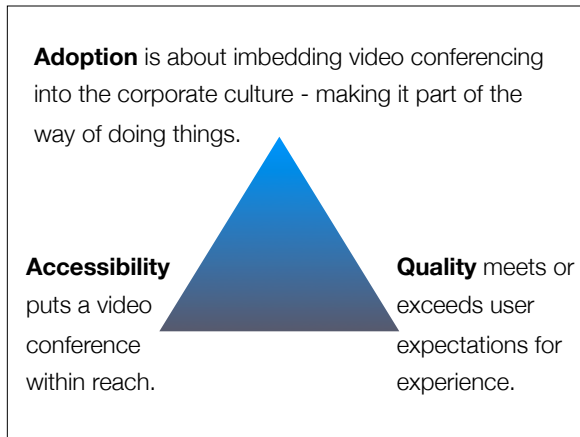
**Figure 2 – Average length in minutes of face-to-face meetings versus room video conferences.**



For organizations implementing HD video conferencing, there is often a reduced support requirement as well. Because of the complexity of the legacy ISDN systems, many enterprises had to train IT staff in the remote offices how to initiate and troubleshoot sessions requiring them to assist with session initiation.

Session initiation is greatly improved today with always-on, low power consuming monitors and simple control user interfaces and in some cases even session orchestration services can initiate the endpoints of the conference minutes before they begin so as to identify network and device issues before the meeting. This increases user confidence in the service and avoids the wasted time of trying to make overly complex legacy systems work.

# The Critical Success Factors



**Figure 3 - The critical success factors of video conferencing are interdependent.**

Three critical success factors – adoption, accessibility and quality – are the most important attributes of successful video conferencing implementations.

## **Adoption:**

Video conferencing is a culture-changing capability. HD video conferencing is a fundamentally different experience than legacy video conferencing. To have rapid acceptance throughout the organization requires one or more executive

sponsors determined to use it to help them do their jobs more effectively. Like most performance-enhancing applications, executive sponsors act as opinion leaders and are best positioned to stimulate a shift in the organization's practices. They can also provide feedback and user insights on the operational and support models used.

The initial rollout of the HD video conferencing system should mimic the executive sponsors' most frequent collaborations. For example, if it's the global sales executive, implementing a video network design that equips that executive and their regional direct reports is a good start. Scaling out from there to connect in their direct reports as their most frequent collaborations extends the network and makes the implementation more useful. In this way the value of the network can grow as more functions, more locations and more users are added.

Post-session processes such as emails and web popup surveys tied to the scheduling service can capture the value of trips avoided and deliver an important feedback channel to IT and the management team, such that the business effects of the whole implementation can be understood and experience-affecting problems quickly identified and addressed.

Other process changes such as challenging employees when they make travel reservations with automatic questions such as 'could the goals of the proposed travel be accomplished in an HD video conference?' Even setting and then measuring the company's carbon dioxide production and therefore reduction work to encourage adoption. Still other organizations publish the quarterly or half-year travel expenses tallies of the top 100 travelers by spend.

These systematic tools and reports are designed to leverage the common management premise - if you want to change behavior or some dimension of the business, measure it and report on it.

## **Accessibility:**

Investment in HD video conferencing equipment and services needs to balance convenient access to the network of HD endpoints. Too few endpoints and you run the risk of frustrating users by establishing have and have not classes of employees, over taxing a limited resource and limiting the transformation of work collaboration styles to only a subset of the workforce.

Concentrating HD video conferencing resources into a few conference rooms of the office building introduces a degree of apartness and compartmentalization, making it easier for employees to avoid the service claiming too little convenience. Shared resources also leads to the need for complex scheduling software or services as part of a session orchestration capability. Greater accessibility leads to greater usage and both deeper and more frequent collaboration.

### **Quality:**

Brockmann & Company research has shown that the general rule of poor quality assuring poor consumption holds true. For many enterprises, HD is the most readily available option in terms of getting the most out of a limited budget. HD can also be a strong fit in low capacity WANs since all but the most demanding telepresence rooms can be serviced with 1 Mbps Internet service.

Users' expectations for high quality visual experiences have changed dramatically in the past few years because the home entertainment experience has changed. The transition of the presentation system from 19" vacuum tube TVs to 50" LCD panels, the transition of the media from VHS tapes to Blu-ray DVD and the transition of audio from built-in TV speakers to the comprehensive audio experience of Dolby 7.1 technologies has conditioned users to expect more from their audio-visual experience. Falling short of users' quality expectations in today's business environment has severe operational consequences – users just won't use the service.

It is in leveraging these interdependent factors that your company can create and sustain an effective next-generation collaborative environment. And they are interdependent. Surely no executive will push to deploy a low-quality experience. And there's no point in expecting big things from HD video conferencing if the service endpoints are only available in the CEO's office and one other location. All three factors - adoption, accessibility and quality - should be recognized and planned for in order to maximize the impact of the service.

# The 5 Key Considerations

## **A Few Other Things to Think About**

When considering an HD video conferencing project for your workgroup, your department or your company, it can be helpful to review this short checklist of considerations to make sure that you and your team have laid the groundwork for the long-term success of the initiative. Different that critical success factors, key considerations review the future-proof dimensions of the initiative to assure that long-term thinking has gone into the recommendation and decision processes.

### **What kind of meeting configurations do you anticipate? Multi-location video meetings with large and small groups? Individuals in point-to-point sessions?**

The expected dynamic of what locations, what rooms and which people is helpful at building a reasonable architecture of the overall solution and can be a guide of which features of the system are most and least appropriate. Some models of some portfolios are only capable of point-to-point service. Others include multi-point bridging services in the codec enabling three or four rooms that can be networked during a session. The need for specialty, centralized devices such as Multipoint Conferencing Units (MCU) optimized for assembling endpoints into multipoint conferences may be required if the volume and scale of multi-point sessions are high.

As well, expectations and reality are different things. So, having the flexibility to plan for simple collaboration patterns and then be able to expand or adapt to more sophisticated patterns as the organization accelerates its adoption of the service, can be very practical.

### **Are you planning at-home deployments for executives with continent-wide and multi-continent responsibilities?**

Part of the downside of not being with the local operations on other continents, for example, is the time-of-day challenge. A 10 am meeting in Frankfurt takes place at 4 am in New York and 1 am in Los Angeles. If you're the global executive, getting into the office for a video conference starting at 4 am may not be particularly pleasant. Deploying a an HD video conferencing endpoint with a DSL or cable Internet circuit in the executive's home is both practical and appropriate for global executives. It makes the 4 am session more pleasant while strengthening their contact with and access to the business leaders around the world.

Similarly, to make it convenient for the European and Asian executives, it would make equal sense to deploy a unit in their homes so that they could conveniently attend a video conferencing session beginning at 3 am local time.

### **Are you planning to do video conferencing with key customers? Key suppliers?**

Most implementations are about engaging employees more effectively in collaborations. But video conferencing is proving to be a powerful method for engaging customers more effectively in collaborations.

Many businesses depend on a small number of top customers. Better than installing a 'hotline' to the customer, HD video conferencing improves the perception of your brand and boosts your perceived and actual responsiveness to customer needs. 61% of business users agreed that their perceptions of a vendor's brand would improve if they were invited to a HD video conference instead of an audio conference with them.

Of course, making sure that your implementation adheres to advanced standards like H.264, SIP, H.323 and IP make this a less troublesome process and sets the stage for inter-company video conferencing to be just as fast and convenient as an inter-company telephone call, but delivers more information faster and more directly than an audio call alone. Some HD systems can also simultaneously deliver screen sharing of presentations or software product demonstrations.

### **How is the network going to be affected?**

The HD video conferencing service may require incremental network infrastructure such as a dedicated DSL circuit for each endpoint, for example. This would be appropriate for the home implementations discussed above. That's because each session demands in the range of 1 Mbps for clear video and audio service. Building a separate HD network over the Internet using inexpensive DSL lines and a small firewall for port controls for each endpoint segregates the HD video application from other enterprise traffic.

It is not necessarily wise to assume that deploying HD video on the enterprise wide area network would be a good idea. The WAN speed and design may not facilitate quality real-time visually-intensive collaboration. That's because the typical WAN design connects large numbers of remote locations to the headquarters where the email server, and enterprise applications are located in a hub and spoke design. Oftentimes access to the Internet is provided through this central 'hub' as well.

However, since HD video conferencing is a high bandwidth collaboration application it can easily overwhelm the classic hub and spoke design. There will be needs for peers in a region to connect, or the remote offices will need to connect with HD video users outside the company. These sessions can stress the typical WAN design leading to service degradation and poor service quality for the HD video user. The service quality of the other applications can be degraded too.

Does the network operations staff have the tools to manage the application, troubleshooting and diagnosing network or endpoint issues before they fester and degrade the experience? Should a video managed service provider be considered?

### **What milestones of operational performance are being tracked? Uptime? Minutes of video? Estimated \$ of trips avoided? Greenhouse gas production avoided?**

Like any utility, being able to understand that the service is being used more often than in previous periods, that the business case for justifying the solution is proving its value and that the company is avoiding the production of greenhouse gasses is helpful in fine-tuning the implementation. Achieving milestones can also provide the evidence that more aggressive expansion will be useful in achieving corporate goals for productivity, customer responsiveness, disaster recovery and social responsibility.

# Conclusion

The HD user experience offers extraordinary visual quality and today, makes the service a powerful differentiator for visual collaborations when compared to other network-based collaboration services. The factors driving the marketplace towards this reality are now in place: low cost, high quality and high reliability equipment; fast, inexpensive and ubiquitous networks; and, high user expectations for visual collaborations all amplify the demand and value of the HD video conferencing experience. And, the pervasive integration of video conferencing into the core business processes leads to higher business performance: higher customer satisfaction, higher employee satisfaction and higher revenues per employee.

The role of the critical success factors to provide the cultural foundation that imbeds video conferencing into the corporate fabric are reviewed and discussed. Finally, five key considerations for future-proofing the implementation are discussed.

HD video conferencing is not a luxury for the competitive business. HD video conferencing is proven to be a competitive imperative for high performing companies. It is a critical resource for improving employee productivity and injects a deeper and richer culture of collaboration throughout the ecosystem. The time for HD video conferencing as a business communications platform is now.

# Appendix A: Related Research

## **The Power of Green**

[Details](#). This report reviews buyer preferences for green brands and considers the state of green in over 100 organizations from around the world. This report also showed that scoring high on the Green Quotient higher customer satisfaction, higher employee satisfaction, higher market share and more revenue per employee.

## **Telepresence by Industry 2008**

[Details](#). This report reviews the link between importance and consumption of telepresence products and services. Telepresence includes immersive, modular and HD video conferencing.

## **Video Conferencing Around the World 2008**

[Details](#). This report defines the perspective of our global business user panel and presents regional variances for discussions. In some parts of the world, for cultural, historical, telecom regulatory and economic reasons there is tremendous diversity in adoption, practice and potential. Clearly, regions do matter.

## **The Perfect Storm: Why Video Conferencing Will Dominate Business Communications**

[Details](#). Do you see what I see? Based on the study of 350 business users of video conferencing, this report sets the stage for the dominance of video conferencing as the business communications tool of choice in the coming decade.

## **MidMarket Leads Video Conferencing Adoption**

[Details](#). The MidMarket is defined as organizations with more than 100 users and less than 2,500. In this report, it is determined that the MidMarket user consumes more video conferencing than other segments. The MidMarket also uses it more to communicate and collaborate with partners and suppliers than the enterprise and small business market segments.

## **Telepresence: Seeing is Believing**

[Details](#). This report reviews the insights provided from respondents that had determined that room video conferencing was very important to their job success. Telepresence is defined as a particularly high-end bandwidth implementation of HD room video conferencing.

# About The Author



## **Peter Brockmann**

is President of Brockmann & Company, a high tech analyst and consulting company. Prior to forming Brockmann & Company, Brockmann was the Senior Vice President of Sales, Marketing and Business Development for FirstHand Technologies, an innovator in mobile VoIP software. Brockmann facilitated a rebranding, repositioning and refocusing of the company that led to a successful C round of investment by Canadian venture capitalists.

Brockmann also worked at 3Com where he was responsible for the product introduction of the 3Com Convergence Applications Suite as the Vice President, Enterprise Voice Solutions Marketing, was Vice President Marketing for bTrade and co-founder of A4 Networks Corporation, a startup focused on business-to-business process automation software.

Prior to 2001, Brockmann held various executive, product marketing, and business development positions at Nortel Networks in customer relationship management software, enterprise data products, and enterprise telephony businesses. In 1998 he served as an expert witness before the United States Department of Justice and the European Commission during inquiries into the Nortel Networks' acquisition of Bay Networks. A frequent writer and presenter on issues in communications and business technologies, Brockmann offers unique insights into how communications and computing technologies change business and change our lives.

Brockmann is a Wikipedia contributor and a regular contributor to Sales & Marketing Magazine [Soundoff](#). An accomplished pianist, Brockmann has an MBA from McMaster University in Hamilton, Canada, a Bachelor of Engineering Science from the University of Western Ontario in London, Canada, and a piano performance degree from the Western Ontario Conservatory of Music in London Canada.

## **About Brockmann & Company**

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