Business challenges and opportunities with telepresence

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The impact of telepresence

Telepresence has transformed global business. It has not displaced other technologies or rendered them obsolete – actually the opposite is true as we will see – but it has changed the way business people think about what network-based communications can do for them and their companies.

Telepresence has made business processes and business transactions and business relationships visible in a way that no communications technology has done to date.

Yet telepresence is by no means fully developed or deployed, but it is already powering global business operations and the uptake is dramatic.

It is capable of continuous development, but not in isolation. It is at the apex of unified communications and collaborative working, so its development will coincide and actually depend on development of UC. While today most RoI on implementation of telepresence is based on cost savings, such as travel, the real impact will be in the way your organisation works, collaborates, speed of its decision making and effectiveness. Some companies already know this and have extended the business case for telepresence beyond travel costs.

Telepresence also will extend your reach outside of your own organization to your business partners and your customers. Based on your business need or opportunity, you should be implementing telepresence throughout your organisation. You can do it, within an integrated UC programme, however this can also be a starting point. You must do it, because the single biggest requirement of your colleagues and employees today is for collaboration in the workplace – and by that I mean they don't want to compete with their team, they want to collaborate. Collaborative working technologies will provide the platform for them to do it and for you to profit.

This whitepaper will examine the technology trends and resulting benefits of telepresence, including the intersection of telepresence and collaboration, and practical advice on the implementation of it within your organization, including guidance on its typical usage and potential for returns to your business.
Three waves of telepresence

Specialist (niche) Wave

Telepresence started as a specialist communications technology. The first room-based, life-size HD video conferencing suites – what has come rather unfortunately to be called immersive telepresence – were built by people with an interest in video technology and who took television studios or multimedia lecture halls as their models of inspiration.

In this phase, vendors were specialists. The proof point of the technology was the quality of the video picture, and the assurance of a face to face meeting that obeys the rules of human interaction; where the non-verbal response is often more important than what’s spoken.

Telepresence was a niche technology with limited deployments. That’s not to say those deployments were not productive; the companies that financed the start-ups in some cases had good use for closed rooms where they could get executives and legal support together to discuss deal making in front of each other. They were doing what they already did, but they could do it more easily and more often.

In this Specialist phase, entry costs are high because you pretty much have to build and operate your own solution. For that you get a high-end application that a few people can use, and in which they are confined because there’s no interworking with companies outside the organization even if they have telepresence, because they have built their own systems and they don’t work with yours. It is worse than that because your telepresence solution is not integrated...
with IP based applications to enhance the working experience or make connections outside the telepresence system – IP services like collaboration, IP call management or directory services.

The First Wave

Things have gotten better after the Specialist wave of telepresence, where we see the first evidence of wider deployment for companies that are not either vendors or investors in the technology. The early adopters here are systems integrators, global financial institutions with networks and worldwide IT systems and personnel.

The market is now being driven along, especially by the big iron network equipment vendors that see an opportunity to exploit existing videoconferencing product or global IP service solutions. Ironically, corporate users are still cut adrift from their own premise-based IP services in their telepresence rooms. They are offered some managed services to make up for that, such as concierge contact support.

Importantly, vendors are making a commercial business case for telepresence that can help justify installation costs, some at hundreds of thousands of dollars for a single site. Travel cost reduction is often the first thing people associate with a business case for telepresence, but even in early days that wasn’t the whole story. Companies were seeing productivity gains in sharing work across departments and specialist business units in a global or distributed organization - which might have its product design team in one city in one region, its materials procurement and production units in another region and its marketing machine in a third region. Speed of decision making and business velocity has been in our opinion at least as important an incentive to corporate adoption.

That’s not to say Travel & Entertainment savings aren’t worth having. Ovum’s multi-national company advisory clients have disclosed T&E budgets are in their sights and they have been looking for up to 50% global reductions in the past year. But that payoff would not have been enough by itself to persuade companies to invest in telepresence, and certainly not without many economies tipping into recession and making travel and business meetings yet more expensive.

The Green agenda is a factor in the market in this phase but is perhaps not producing the expected lift-off effect. And although almost all systems are based on industry standards such as video codecs and SIP transport, such developments as inter-operability between systems are just emerging.

In this phase we see the first signs of interest from telecoms operators who have the network bandwidth and service management to roll out telepresence and Value-Added Resellers or Systems Integrators who can provide these systems deployed into a corporate network with other communications applications (such as VOIP).

The deployment of systems were very much a turnkey offering, and still expensive, constituting all hardware, software and even mandating furniture in some cases, to
equip an entire room and ensure the telepresence experience is maximized for the users. This resulted in the market reach being limited, generally, to larger companies or organizations where the RoI justified the high cost - mass deployment was still being hindered.

So all in all, the decision in favour of telepresence as an additional investment and the case for finding new budget for telepresence, is not an obvious one. Those that have implemented telepresence are still at limited deployment, with typically a half dozen designated key sites, and the biggest commercial deployments topping out at 20-25 sites.

**The second wave for telepresence**

The Second wave, the one we are in today, is already much bigger than the first one. In Ovum surveys (see Figure 1), about 20% of organizations are installing telepresence, and 45% say the odds are they will implement in the next two years.

Telepresence was one of the star turns of 2008. Some service providers say they expect standards-based HD video to be the driver of managed videoconferencing contracts business, generating as much as five times the revenue from telepresence (according to one).

The lines between the two are indeed blurring, especially as equipment vendors now introduce smaller-format ‘cost-effective’ versions of telepresence. Telepresence in any case is the pull factor for HD video demand, and some service providers say that telepresence sales account for as much as 80% of new videoconferencing systems orders.

The evolution of telepresence offers the opportunity for marrying telepresence with collaboration (and unified communications applications in general), video surveillance, digital media encoders and video telephony technologies to foster a video-centric portfolio including conferencing, security, digital media service and unified communications.

Further telepresence is evolving as a business application service in at least three ways:

- **Realtime managed service:** as a realtime enterprise application for collaborative working with a desktop/telepresence interface, exploiting session initiation protocol (SIP)-enabled infrastructure to integrate their telepresence and UC estates. This integration of collaboration and desktop sharing directly into the telepresence session, along with developments in interoperability drastically enhances the user experience and benefit and extends the reach of telepresence/collaboration beyond the boardrooms equipped with this technology, to individual desktop users, independent of location. In fact envision this extending to mobile devices as well.

- **Evolution to software only offer:** Expect a gradual evolution of the communications offer toward a software-based delivery method. Just as service providers have exploited middleware in the service creation platforms
at the heart of their next gen networks, so they are able to use software to orchestrate services for end users, through session control and security management. We have seen this for voice, which is now an enabling application for enterprise tools, and we will see this extended to business video.

- Interoperability: In a hardware environment, interoperability was a key obstacle, especially for companies with existing estates. A software-led approach frees the service provider and end user from that constraint; now the service evolution is directed toward the addition of new capabilities, instead of reverse-engineering the legacy systems.

User experience and business case

Including telepresence in your UC integration plans

At the beginning of 2009, Ovum research showed that telepresence was already deployed by more than 20% of multinationals surveyed as part of their rollout of UC applications on converged networks.

One year later, our latest research (Q4 2009) shows that number has more than doubled to 44% (Figure 1)
Within two years, as much as two-thirds of multi-national companies will have deployed telepresence. However, the profile of telepresence is changing rapidly and there is scope for many of these eventual deployments to be in non-immersive HD video - or more explicitly, extending from telepresence/collaboration environments to be inclusive of single PC-desktop users.

**Telepresence makes a unique investment case**

Telepresence is outstanding as the technology from which users expected to derive the biggest savings in their opex budgets. However, such is the RoI case around telepresence that many users equate accelerating planned investments with accelerated savings.

Figure 2 shows how telepresence is uniquely positioned among network technologies considered for potential savings.
This chart maps MNCs’ declared cost management strategies at the beginning of 2009, in terms of how important the companies consider these to cost reduction and how easy they would be to implement. So, for example, while cutting large capital projects is relatively easy to do and would produce a significant saving, offloading mobile managed services is both difficult (because few service providers can help) and is not going to save much money, while mobile costs remain high overall.

Ovum also wanted to know if users were thinking differently about the effectiveness of cost-reduction programmes or cost-saving technology projects. In this respect, users could not make up their minds about telepresence; they divided roughly equally between those that were delaying telepresence (a big-ticket item) and those that were advancing projects in order to more quickly realise savings from travel expense reduction.

The message for unified communications at first glance looks less promising, but in fact a reason for the low positioning of UC integration is that companies are
already committed to their long-term rollouts and would not expect to make savings – hence the high percentage registering no change in plans.

That’s confirmed by our latest research on UC integration (Figure 3) which shows MNCs moving decisively from the pilot phase for UC applications – typically on a selective basis i.e. in one corner of the organization – to much more extensive commercial deployments.

Figure 3: UC integration projects move from pilots to company-wide implementation

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<th>Have you initiated or planned any projects involving integration of your IPT platforms with your software collaboration platforms?</th>
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<tr>
<td>2008</td>
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<td>Full integration*</td>
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<td>No plans</td>
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*common directory and presence

Source: Ovum/EVUA

This survey covered 21 global MNCs, but the message is clear for all business users because our research shows that MNCs, medium-large enterprises and smaller businesses alike share the same concerns over implementation of UC-understanding and measuring benefits, identifying appropriate technologies that meet a business requirement, applying a convincing business case, and getting support from the main supplier-and the progress chart shows those concerns have mostly been allayed.
Getting early payback through chargeouts

Several case studies demonstrate that corporate users can make significant savings through telepresence, especially in terms of travel costs. TeliaSonera provides the following example:

- 464 meetings
- 3 saved trips (Helsinki-Stockholm-Helsinki) per meeting
- cost of one trip: approx €400
- number of saved trips: 1,392

Total saved travelling cost: €556,800 (does not include cost from offices to airports).

- However, the fact is that telepresence costs are high; we have seen operating costs of up to $110,000 per month per corporate customer, based on service charges of $5,000 per working day inclusive of bandwidth. Many users are therefore looking to deploy and manage telepresence as an internal system on their network. Having a deployable solution that optimizes bandwidth utilization and is cost effective to deploy can significantly change the cost model and thereby the realized returns to an organization. Mitel's Telecollaboration solution, for example, is optimized for this model.

RoI tools in telepresence

The operator value solution is a model for RoI tools. Service providers that don’t already offer similar tools are likely to follow the example, especially if it can be integrated with new versions of corporate user portals.

We also expect to see the RoI tool evolve in real time, with vendors and service providers developing features that enable the user to estimate the cost of a planned telepresence videoconferencing session against the cost of time and travel for a direct meeting. Time-related costs can include speed of decision-making.

For example, American Express has launched a pilot for a virtual meetings solution called eXpert. This will act as an aggregator of public telepresence facilities and private business networks already in use. It will also help businesses decide whether a particular meeting would be best held online or by physically travelling to the site.

The user experience – an example

Telepresence is like being there - it has the biggest Wow factor of any communications technology of the past 20 years, and that includes the iPhone.

But the hardware-driven approach has many handicaps.
Here’s what the members of the technology lead team at one global professional services company found when they were sent out to get the company a telepresence system.

As part of a network transformation programme, this global professional services company opted for:

- converged voice and data networks
- IP telephony
- LAN refresh/enablement
- Unified communications (mailboxes/mobility/seamlessness) and collaboration (telepresence)
- telecoms expense management (TEM) operating systems
- telecoms performance management

So the first thing to note is that telepresence is a component of this company’s UC project based on IP. It is integral to UC integration. From the start, telepresence is planned for within an overall integration programme. Second, collaboration is an essential part of the UC programme. And third, cost measurement and monitoring are required from the beginning.

Within the overall network UC project, telepresence sites were identified and first deployment was started within 8 weeks. The company now has telepresence in nine sites worldwide. The CFO has his own single-screen installation, an increasingly common solution.

The company is already located on an MPLS network provided by two global operators - a dual supplier approach. In fact, both service providers are determined not to be the failover element so their respective network platforms are well provisioned to support telepresence in global operations.

Rooms have their own mailboxes so meetings can be scheduled in Outlook Calendar. XML configuration helps push meeting schedules to room phones, and meeting setup is done in seconds.

A reduction in business travel is the key driver for the telepresence investment. Even a small saving in this company's travel budget would pay for the telepresence systems installed, but the company had also factored:

- CxO wear and tear
- increased collaboration (not competition)
- improved work/life balance
- appeal to ready adopters (motivation)

The company set up its own pre meeting validation process, which in some respects has been superseded by service provider management tools. This
solution set prioritization targets, managed schedule conflicts, calculated travel costs avoided, and applied costs back to the scheduled meeting.

**Some comments from the team**

Don't believe the hype about eye contact - on this measure, performance is variable on the hardware-driven systems; it is not quite there in the biggest player version. For most users, this is a small negative in an overwhelmingly positive experience.

Is it designed for a purpose-built room? Or does it come supplied with one? Either way, you will need dedicated facility. It is a key point, and the real estate cost does not appear in the price list for telepresence systems from any vendor.

Single screen option? You won't need a room, but you still need to buy a maple effect table to match the one in the tri-screen telepresence suite at the other end of the corporate network. This sounds trivial, but it is really important in the user experience.

Codecs - three per screen required for the vendor-driven systems, for video, compression and multiplexing. You need to accommodate these in a single data stream in your network. In addition, call management, vendor multipoint solutions and vendor-vendor applications integration (e.g. Cisco-Microsoft), all factors will multiply in a system with say 36 single screens alongside a half-dozen tri-screen sites. Your IT management skills will be tested.

These comments are typical of experiences in usage of these systems today. Mitel has addressed these issues in their offering by,

- optimizing camera positioning for gaze angles and provisioning a camera per screen ensuring you are always looking at the person you are speaking to
- their application is designed to work from conference rooms to individual office suites, where furniture is not prescribed, but guidelines are provided on recommended positioning of equipment and distances to furniture, etc.
- codecs are designed to utilize low bandwidth and be network impairment tolerant, thereby not requiring dedicated corporate network resources.

**Lessons learned**

Pre-qualification of facilities is essential – if you are going for the full immersive solution. Some vendor solutions only provide documentation in feet/inches when the facilities data is metric. Room remediation may not be to vendor spec. You would be advised to do a room readiness assessment to ensure lighting and other engineering features support the vendor system.

Procurement can be challenging, however this situation has improved in the last year. Work with your solution provider and vendor, on procurement, installation
and network provisioning, especially if you are equipping across wide geographies or internationally. Shipping costs on top of your CPE purchase costs can be a surprise in some geographies. [not with a software only solution and hardware procured locally - can we make this point?].

You can rely on MPLS to take the strain of telepresence, and a good service providers' CoS parameters can be forgiving. Software-based services will drive down the minimum bandwidth requirement for HD quality - but dedicated network connectivity will NOT be needed in most sites [one of the fundamental premises of our solution].

The reward case is compelling. Cost reductions and productivity gains (collaborative working) are realised in 9/10 cases. Mitel is differentiated in this last point with collaboration being integral to the telepresence system, in fact chosen to be branded as a Telecollaboration solution.

Conclusions

There will be more waves in telepresence; a third certainly, and perhaps a fourth or fifth. The third wave will see telepresence extend to smaller enterprises and the fourth will offer Ubiquity! (ubiquitousness if we have to use that word...)

Until now the market has been addressed by mainly five immersive telepresence solutions from Cisco (CTS 3000 etc), H-P Halo, Polycom (RPX etc), Tandberg (T3 etc) and Teliris, and how they are being delivered by telcos. The lines are certainly blurring as other vendors like Lifesize Communications bring in HD solutions that don't use the whole wraparound room experience but still give full-size face-to-face meeting experience.

Now, as more agile vendors, like Mitel provide, integrated collaboration, optimize bandwidth and move telepresence off the hardware platform and into a software environment, all the while preserving and enhancing the high quality telepresence experience for users, there will be even better scope for SMEs to adopt solutions that suits them.

We expect that more medium and large enterprises will have immersive telepresence suites, but that small SMEs will not - but will have HD interoperability to connect outside of their site to clients, partners and the like. Telco and vendor channels will help with that missing piece of IT integration.

The key barriers to adoption of telepresence are changing from the hardware-driven environment that constrained our PS global company above.

- The business case is sound, however it is important and not always easy to evaluate payback time – evaluate your vendor costs, network and facilities costs. Recognize that software based controls and measurement will help
- The cost of network bandwidth is a major factor in the business case – compare your vendor implementations and optimize your soft network environment for HD video and UC applications
• Ability to interwork between different equipment vendors – an obvious strategy is to take your solution off the network layer and into a soft service environment

• Look for the capability to hold sessions between different companies –

Finally, there is a big decision to be made about which types of supplier organizations use for their telepresence/video project consulting, design and implementation, and which are proving their competencies and suitability - from technical capabilities to understanding of their business requirement i.e. equipment vendor, Reseller/VAR, Local/national integrator, Global SI, or Telecoms provider. Regulations, project management, planning permissions etc are all complicated when you get to installing TP from Dallas to London to Rio de Janeiro. Look for procurement options such as managed services to spread costs, capital outlay and risk.
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