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Methods and Systems for Mobile Telepresence: Today's workforce demanding mobility and flexibility

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Technologies that support collaboration between users at different locations are growing in demand. There has been a surge in the interest for videoconferencing, ranging from desktop to telepresence to mobile videoconferencing. As mobility continues to become the norm in everyday life and business alike, end users are looking to extend their enterprise communication experiences to mobile devices. Faster, smarter, and more capable smart phones and the emergence of collaboration-ready enterprise tablets is fueling the interest in mobile videoconferencing. While mainstream adoption is still a few years away, the demand drivers are all aligned for the market to pick up pace.

The workforce of today is demanding mobility and flexibility, forever changing the face of enterprise communications. There are an estimated 1 billion mobile workers today and a large number of them are savvy users bringing their knowledge of consumer mobile technologies into the enterprise world and expecting to be armed with the right tools that make them more productive and connected. At the enterprise level, the iPhone 4 is starting to see increasing adoption. Of particular interest is the iPhone 4's Facetime feature and the ability to make video calls. Also, the Apple iPad has become a runaway success, and the market saw a proliferation of tablets, which has emerged as a new form factor for mobile collaboration. It is not hard to fathom that over the next 5 to 7 years, mobile devices of all kinds will become the de facto communication platform for both consumers and business users.

There has been a growing need for conferencing and collaboration tools for productivity enhancements, cost cutting, and to communicate with geographically dispersed workers. Users now want to extend the desktop and room based videoconferencing experience to their mobile devices. Over time lower price points for smart phones and enterprise tablets will prompt adoption of mobile video and telepresence. In addition, lower costs for service plans in the future due to increased competition amongst carriers are expected to extend the reach of mobile video and telepresence. Today, the main use cases for mobile videoconferencing in the enterprise remain remote employee interaction – for the mobile workforce or for employees who need a visual collaboration feature to ensure the "personal touch" during the call. Mobile videoconferencing offers an extension of traditional room-based and desktop based videoconferencing and leverages existing videoconferencing investments by extending the reach to the mobile user. The market for such technology is nascent; however mobile video—transmission of SD images over mobile networks and devices—is a market that is evolving and growing with the ever increasing use of tablets and smart phones.

By definition, telepresence is a technology that leverages a purpose-built, enclosed meeting environment, in addition to life-size and high quality images and superior audio quality. In practice, the high quality images and superior audio quality can be transferred to a mobile environment to qualify as mobile telepresence. With mobile telepresence, the size of the portable device will impact how effectively it can be used for videoconferencing. The user experience of videoconferencing with smart phones (iPhone, Android, BlackBerry, etc.) can be frustrating, particularly for multiparty sessions, because of the limitations of screen real estate combined with the vibration from being hand held. Tablets, however, provide a large enough image size to make multiparty videoconferencing effective. For optimal quality, the

videoconferencing software must be written to an operating system that is open, interoperable, and ubiquitous. On all those counts, Google's Android OS fits the bill. Additionally, to preserve battery life and CPU resources, the chipset must be optimized for video; the OMAP4 chipset from Texas Instruments is a good fit. If the software does not utilize the chipset's capabilities and is written only the OS, videoconferencing will devour battery life and consume the device's processing capabilities, rendering an inadequate user experience.

Bandwidth requirements are critical for mobile videoconferencing. 4G networks not only offer higher download speeds but also higher upload speeds. Sprint's and Verizon's 4G networks, for example, can today accommodate the uplink requirements of mobile videoconferencing. Low latency is another important requirement for business quality videoconferencing. The 4G networks of today reduce the latency of 3G networks by about two thirds, making mobile videoconferencing a reality. As 4G networks continue to get better, network speeds increase, and handset camera technology improves, all the key factors will be in place for enterprises to implement business quality mobile videoconferencing. There are innovative solutions available in today's marketplace that address this concern. Avistar's bandwidth management technology works with most networks to make them efficient and not take away from critical applications, functioning on the network or on the user's PC or mobile device.

Mobile telepresence is a feasible option, but the main factors to be considered, outside of the ones discussed above, are cost, demand and sustainability. The recent uptake of desktop video suggests that enterprise users are moving toward high quality, affordable videoconferencing. Even if they deploy several mobile devices enabled with videoconferencing, that would cost quite a bit less than a $250,000 telepresence system.

Still, as enterprises try to realize ROI from the investments made in traditional telepresence systems, they can be forgiven for having questions about mobile telepresence-- especially when the comparison involves screen size or quality concerns. The life-like and immersive communications experience will be hard to replace, but it would be interesting to find out whether consumers would swap that for readily available, acceptable high quality images and anytime access. Overall, the entire visual collaboration environment is moving to an exciting new phase.

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