Research Brief

Aberdeen Group
A Harte-Hanks Company

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The Role of Real Time Virtual Collaboration in Product Development

Product development teams are no longer constrained within the same four walls of the department. They are spread across different facilities, states, and increasingly across the globe. This has brought new challenges to product development, as designers must find new ways to share designs with collaborators who may never be in the same room. Companies are finding some measure of relief through a number of collaboration technologies that can help bring dispersed teams together. One solution that may often be overlooked but has a lot to bring to the collaboration table is video-conferencing.

The Need for and Value of Collaboration

The highly dispersed and globalized nature of product development today has changed the way that product development teams come together on a design. Virtual meetings, emailed design data and lightweight design visualization have replaced white board sessions as product development departments become complex design chains dispersed across time zones, legal and regulatory boundaries, and languages.

Given this product development reality, an enterprise's approach to collaboration can have a large impact on their performance. Aberdeen's October 2007 *Profitable Design Chains: Global Product Design Comes of Age* Benchmark Report found that top performing companies are leveraging collaboration in ways that enable globally distributed teams to effectively work on a design in parallel. However, companies aren't simply looking at design collaboration as a component of global product development. Findings from Aberdeen Group's June 2006 study, *Product Lifecycle Collaboration: The Product Profitability "X Factor"?* indicate that companies are pursuing collaboration as a strategy in its own right, both as a means to reduce time to market as well as increase product innovation. Companies are expanding design collaboration efforts to include customers and suppliers as well as inter- and intra-department stakeholders (Figure 1). It means that these efforts are taking place earlier in product development cycle, before the release to manufacturing during the requirements, design, and prototype phases.

Research Brief

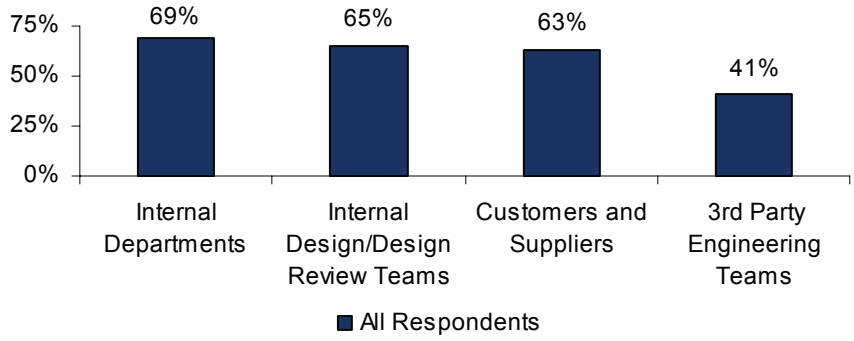
Aberdeen's Research Briefs provide a synopsis of the principal findings derived from primary research, including key performance indicators, Best-in-Class insight, and vendor insight

Recommendations for Action

√ Adopt a collaboration solution that allows global teams to work in real-time

√ Invest in a network infrastructure that can support high bandwidth consumption, such as video, voice, and design data traffic

Figure 1: Collaboration Partners



Source: Aberdeen Group, June 2006

In particular, Aberdeen has found that extending participation and input on a design to downstream departments and a larger group of stakeholders can play a significant role in how companies coordinate engineering changes. Aberdeen's September 2007 *Engineering Change Management 2.0: Better Business Decisions from Intelligent Change Management* found that in order to ensure that they make the right decisions Best-in-Class performers involve more organizations in the change management process. In effect, this allows these companies to better understand the full impact of a change and make better decisions when approving or implementing it. To support this, they are leveraging many collaboration technologies, such as real time virtual collaboration tools, that make it easier to involve more people in the change process.

Competitive Framework Key

The Aberdeen Competitive Framework defines enterprises as falling into one of the three following levels of practices and performance:

Best-in-Class (20%) — practices that are the best currently being employed and significantly superior to the industry norm

Industry Average (50%) — practices that represent the average or norm

Laggards (30%) — practices that are significantly behind the average of the industry

Real Time Virtual Collaboration

Aberdeen's *Product Lifecycle Collaboration* study found that the top corporate goals companies report for design collaboration are: accelerated time to market (67% of respondents), the ability to produce higher quality products (54%), and the ability to better respond to customer and market requirements (52%). However, involving more departments and stakeholders in product design requires changes in how companies collaborate. Where email communication may have worked in the past, waiting for feedback from a larger number of participants can hamper rather than accelerate the product development process. The solution lies in tools that allow the simultaneous interaction of a number of individuals and locations in virtual meeting environments, or real time virtual collaboration. In this approach, designers and stakeholders are able to connect and interact live without communication delays. Ideas can be exchanged more quickly, questions can be answered immediately, and problems can be discussed and resolved on the spot.

Table 1 displays the top answers respondents provided when asked what sort of activities they used real time virtual collaboration to support. While no single answer leaps out ahead of the others, it is interesting to note that

two of the top answers are about involving customers and suppliers into project status meetings. Other answers indicate the interactivity that real time collaboration brings. It's about creating environments where all stakeholders can provide feedback and make changes together. The impact on time to market, of course, is obvious, as feedback can be communicated and incorporated all at once, keeping all stakeholders up to date. Customer responsiveness is also improved by keeping the supplier and customers involved in design. Finally, it can provide higher quality simply by bringing more individuals together on a project. By bringing the right individuals together, they can respond to each other quickly and work together to solve problems in a better way.

Table 1: Real Time Collaboration Actions

	Response
Review designs in an interactive environment	63%
Include suppliers in regular project status meetings	55%
Include customers in regular project status meetings	47%
Simulate real time meeting environments for dispersed teams	47%
Enable virtual brainstorming / white board sessions	40%

Source: Aberdeen Group, June 2006

Aberdeen's research has consistently shown that real time collaborative environments can translate to competitive advantage. The *Engineering Change Management 2.0* study found that Best-in-Class performers are 37% more likely than Industry Average companies (and three times as likely as Laggard organizations) to leverage virtual meetings to involve more stakeholders in the engineering change decision process. Additionally, the *Profitable Design Chains* report shows that 82% of Best-in-Class performers employ virtual meetings and meeting collaboration tools, making them 19% more likely than Industry Average companies to do so.

Overcoming Real Time Collaboration Challenges

There are a number of technologies that companies leverage in order to try to enable real time collaboration. Participants involved in the *Product Lifecycle Collaboration* study indicated using: phone / audio conferencing, video conferencing, web conferencing, document and screen sharing, visualization tools, Instant Messaging (IM) / chat applications, and even design tools such as Computer Aided Design (CAD) data. However, achieving real time collaboration, isn't necessarily as simple as implementing a technology solution.

Of course, tailoring any collaboration solution to the needs of an organization is going to come with its share of challenges. Respondents to the *Product Lifecycle Collaboration* study indicated that the top challenges they

"Hundreds of people are involved in developing our

encountered with collaboration solutions were: adapting presentation / meeting styles to incorporate remote teams (75% of respondents), learning to use meeting collaboration tools quickly (64%), being able to access meeting collaboration tools (56%), and smoothly transmitting high density design imagery (51%). Additionally, 66% of respondents to the *Profitable Design Chains* study reported that protecting Intellectual Property (IP) was the number one challenge of global design. Maintaining product IP may present the greatest challenge, as technologies that are designed to communicate information quickly and easily also must be able to ensure that that only the necessary information is communicated.

Of the tools companies use to pursue real time virtual collaboration, one directly simulates a co-located meeting. Video conferencing is one mechanism whose attributes position it in a way that addresses many of these challenges while still meeting the goals of real time collaboration. It enables all stakeholders to share design information in a dynamic virtual meeting environment without exchanging any data.

Video Conferencing Considerations

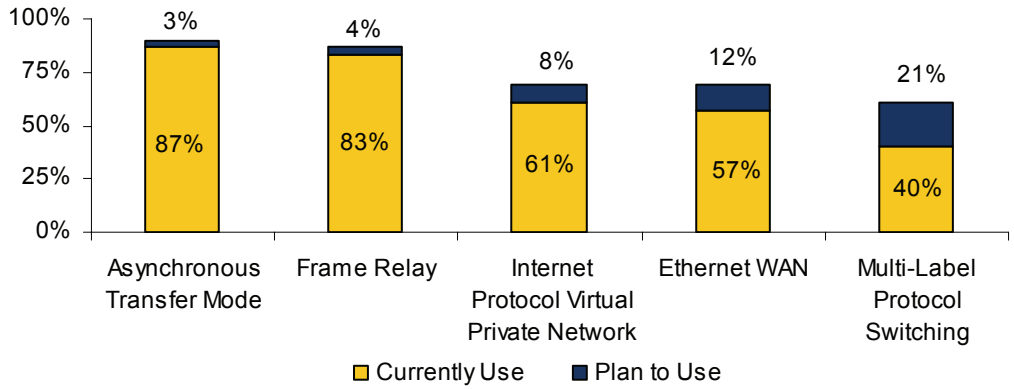
A few things need to be considered before investing in a video conferencing solution. How many people and how many locations will be connected? Will the conferences be held in large auditoriums, small conference rooms, or personal workspaces? The answers to these questions will determine the type of equipment you will need. How easy will it need to be to configure the system and set up a conference? Some vendors have focused on simplifying the configuration to make it as easy as making a call from a cell phone. Their aim is to make video conferencing as accessible as possible. Is security a concern? Some vendors offer encryption capabilities that keep conversations and shared data secure. Most importantly, what kind of network do you have in place? The network has a significant impact on video conferencing performance. Due to the number of networking technologies available and the role it plays in video conferencing, the following section will discuss this in further detail.

What's in Place

With the growing availability of newer technologies and services such as Multi-Label Protocol Switching (MPLS) and Ethernet Wide Area Network (WAN) services, that help to manage network traffic and increase bandwidth, organizations have the opportunity to consider re-balancing the cost, reliability and availability, performance and security of the network. In fact, with the investments companies are already putting into their network infrastructure, reliable and clear video conferencing is an even more compelling option. Aberdeen's February 2007 *Latency Matters: The Wide Area Network Benchmark Report* found significant adoption of WAN technologies over the last two years. In addition, over the next twelve months, organizations indicate continuing investment in these technologies, particularly in MPLS which offers a low cost, low complexity mechanism for managing network traffic (Figure 2). While not the goal, these investments

into WAN services put companies in a better position to leverage video conferencing to solve collaboration challenges.

Figure 2: WAN Services in Place and Planned



Source: Aberdeen Group, February 2007

Case in Point - Statoil

Take, for example, the case of Statoil, one of the world's largest integrated oil and gas companies with 26,000 employees across thirty-three countries. They are the largest offshore operator in the world. To juggle both onshore and offshore operations, effective communication and collaboration are critical. Video conferencing helps Statoil collaborate and make faster decisions.

"From the wells and pipelines, we get data in real time from offshore platforms. We must analyze it and make decisions based on that data," says Adolfo Henriques, Manager Integrated Operations Corporate Initiative. "Previously, each group of experts would look at the data, analyze it, and send advice to the next expert, and so on, and so on. It could take weeks. Now we have these virtual rooms that are really video conferences and if there are any questions or problems, we can just go there and talk. By getting our experts together via video conference, we can get all of our experts together, no matter where they are."

Statoil also uses video conferencing to bring teams together to solve problems. They find that the use of video conferencing reduces the time needed to solve problems significantly. Arne Bye a Platform Manager says, "We were starting up a testing facility and we had a problem that needed repair. The repair was done, but there was a question about the quality of the repair. We reassembled the onshore experts and piping engineers and the discussion was concluded in 20 minutes. 8 years ago, I had exactly the same challenge and it took 2 weeks to solve it."

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Arne Bye
Platform Manager
Statoil

Solution Snapshot

When it comes to investigating technologies to support video conferencing capabilities, there is a wide variety of choices. However there's more to successfully transitioning to real time virtual collaboration than just plugging in technology. Successfully navigating the cultural and process changes requires knowledge on how the technology is applied. To this end, there are a few solution providers that specifically focus on applying real time virtual collaboration to the product development process.

Tandberg and Polycom both focus on applying video conferencing technologies to solve supply chain challenges. These companies offer solutions to other business challenges as well, but have spent the time and effort required to understand the specific application of videoconferencing to supply chain collaboration. In addition, Tandberg focuses on how the technology is used for design and service planning. Other solution providers that support video conferencing include Aethra, Amity Systems, Avistar Communications Corp., AVCON, BNI Solutions, Emblaze-VCON, HP, Huawei, InSors, Leadtek Research Inc., LifeSize, Multimedia Research Labs, SCOTTY Group, Sony, UIC, Visiontech AB, VTEL, WebEx, and ZTE among others.

Recommended Actions / Next Steps / Key Insights

Video conferencing and other real-time collaboration solutions allow data and ideas to be exchanged more quickly, making change management and global design much more efficient. Adopting these solutions and backing them up with well managed infrastructure can result in significant improvements in time to market and product quality.

Companies wishing to perform at Best-in-Class levels should consider the following actions to improve collaboration efficiency:

- Adopt a collaboration solution that allows global teams to work in real-time. Consider video conferencing as an option to connect teams in real time.
- If considering video conferencing solutions, ensure the network infrastructure will support the system

For more information on this or other research topics, please visit www.aberdeen.com.

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Related Research	
Product Lifecycle Collaboration: The Product Profitability "X Factor"?; June 2006 *Profitable Design Chains: Global Product Design Comes of Age*; October 2007	*Engineering Change Management 2.0: Better Business Decisions from Intelligent Change Management*; September 2007 *The Latency Matters: The Wide Area Network (WAN)*; February 2007

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