Active Collaboration Room
Transforming Business Models by Accelerating Distributed Team Performance

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Executive Summary

Many organizations recognize that collaboration is an important driver of improved business performance, but they also face significant challenges in accelerating results from geographically distributed teams.

Cisco® TelePresence™ is available in a wide range of solutions that enhance collaboration for leading organizations. A new solution from Cisco combines TelePresence with other collaboration components to improve team productivity as well as enable a transformational business model that dramatically shortens project cycle time for key business processes. This solution, called the Active Collaboration Room (ACR), is designed for highly interactive "working session"-style collaborative meetings with distributed project teams of 10 to 50 individuals. These teams must develop new content (not just review existing material), and need a rich environment that supports both interaction among participants and joint content creation. The Cisco Internet Business Solutions Group (IBSG) recently completed an engagement with a leading customer to develop a new solution tailored to address these needs.

ACR is a Cisco TelePresence "workgroup collaboration" format that captures all participants in the room, whether sitting or standing. Specially designed furniture and a structured room layout improve ergonomics and promote interaction within the room. Remote users can participate visually using other TelePresence-enabled rooms, as well as desktop webcams and other HD video-conferencing systems. This strong video foundation is augmented by Cisco WebEx™ conferencing technology integrated with interactive whiteboards, enabling both in-person and remote participants to share and modify content.

Initial ACR deployments have demonstrated the potential impact from the creation of new business models. Travel reduction and productivity savings alone can quickly pay for the cost of solution implementation. For example, for a three-month project with 20 team members, a 10 percent productivity improvement would generate $100,000 in savings. ACR is expected to yield its greatest benefits via acceleration of key business processes, however, such as process reengineering and new-product development. The impact of improved cycle time on revenue growth and competitive advantage is expected to significantly exceed cost savings from increased productivity.

Introduction: The Need for a New Solution

In an increasingly competitive environment, many organizations have realized that improving collaboration among their employees, as well as with customers and partners, is essential to achieving improved business performance.

One of the most important types of collaboration occurs within project teams. Whether the team's objective is innovation (as in new-product development) or operational excellence (as in process improvement), delivering the best results requires enabling a diverse group of subject-matter experts to work together. Often, even when most team members are based in one location, experts may be based elsewhere, making it difficult and costly to bring a winning team together. In addition, waiting until schedules permit travel often slows the team's progress by weeks or months.

For many of Cisco IBSG's customers, typical process-improvement initiatives involve 20 people from at least three locations. Usually, initiatives take more than nine months to complete due to scheduling of team members and relatively low productivity caused by the inability to achieve consensus on problem definition or a solution, inefficient communications, and barriers to meeting for the necessary multiday working sessions. Innovation initiatives have similar difficulties, with the added complication that design errors found late in the development cycle are more expensive to fix.

Conference calls and web conferencing can facilitate information exchange among distributed teams. Working on complex solutions and building trust, however, typically require face-to-face interaction. Because working team collaboration sessions tend to be lengthy (four to eight hours at a time, stretching over multiple days), it can be difficult to maintain full engagement using traditional conference calls and web conferencing alone. Lengthy conference calls often fail to hold the attention of remote participants, leading to low productivity. Moreover, complex content development is difficult to achieve with audio conferences, resulting in errors, time delays, and increased costs.

Cisco TelePresence Format Options

Cisco offers TelePresence solutions in different formats to accommodate various kinds of collaboration:

Meeting Format. The Cisco TelePresence meeting format (see Figure 1) has demonstrated excellent transformational results. This format can be extremely valuable for decision makers and key contributors in formulating strategy and building relationships. Managers and teams literally meet "across the table" with individuals at other locations. They can see each other in life size, and the combination of directional audio and coordinated room colors and lighting makes the experience similar to meeting in the same room. Participants can share content on a separate, smaller auxiliary screen, typically mounted below the video screens. This format provides an incredibly rich experience, best suited to formal meetings. It enables leaders to transform relationships with customers, partners, and employees in a highly immersive setting.

Figure 1. Cisco TelePresence Meeting Format—CTS 3000

Source: Cisco IBSG, 2010

Workgroup Collaboration Format. Workgroup participants often prefer to stand up, move around, develop ideas on a whiteboard, and share large-format information such as process designs, project schedules, software designs, or engineering models. Constraining participants to a formal seated position does not support such activities. Also, viewing content becomes just as important as viewing other participants.

Figure 2. Cisco TelePresence Workgroup Collaboration Format—Active Collaboration Room
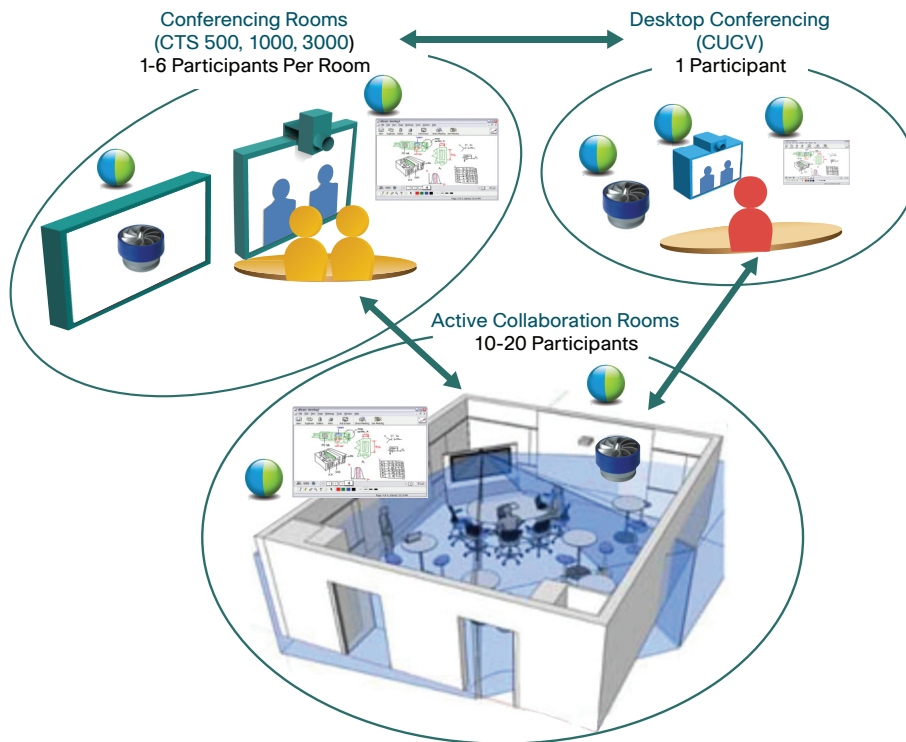

Source: Cisco IBSG, 2010

This "working session" mode of collaboration is essential to a wide range of projects, including strategic planning, customer account planning, market development, product design reviews, business-process reengineering, customer-requirement gathering, and contract development.

The Cisco TelePresence Workgroup Collaboration format is a newly developed option designed for participants to interact in an informal, dynamic setting with greater emphasis on ideation, problem solving, and creation of new content. This format is embodied in a new offering from Cisco's TelePresence Systems Business Unit called the Active Collaboration Room (ACR) (see Figure 2).

Overview: Active Collaboration Room Solution

The complete ACR solution integrates multiple ACRs with Cisco TelePresence meeting formats as well as other high-definition video-conferencing systems. It also enables individuals to participate via desktop webcams. This strong video foundation is augmented by Cisco WebEx conferencing integrated with interactive whiteboards, enabling both in-person and remote participants to share and modify content.
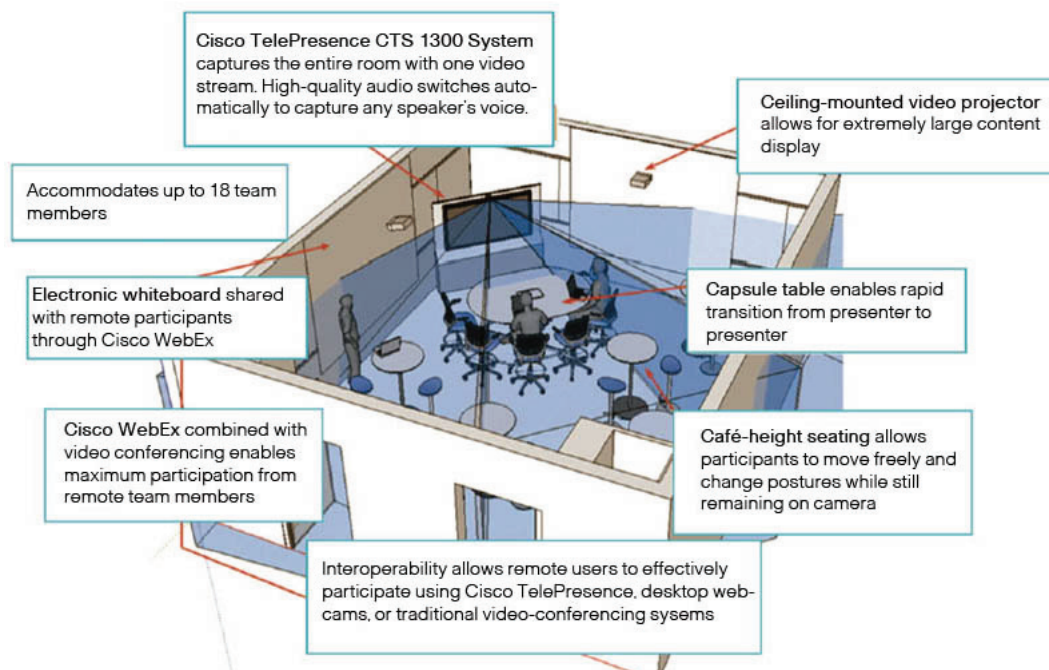
Figure 3. The Active Collaboration Room Permits Multiple Forms of Remote Conferencing and Content-Sharing Tools, Allowing Full Participation by Many Different Groups, Large or Small

Source: Cisco IBSG, 2010

Figure 4. The Active Collaboration Room Incorporates Many Elements (Some Technology-Based, Others Not) That Contribute to the Workgroup Collaboration Process

Cisco TelePresence CTS 1300 System captures the entire room with one video stream. High-quality audio switches automatically to capture any speaker's voice.

Ceiling-mounted video projector allows for extremely large content display

Accommodates up to 18 team members

Electronic whiteboard shared with remote participants through Cisco WebEx

Capsule table enables rapid transition from presenter to presenter

Cisco WebEx combined with video conferencing enables maximum participation from remote team members

Café-height seating allows participants to move freely and change postures while still remaining on camera

Interoperability allows remote users to effectively participate using Cisco TelePresence, desktop webcams, or traditional video-conferencing sysems
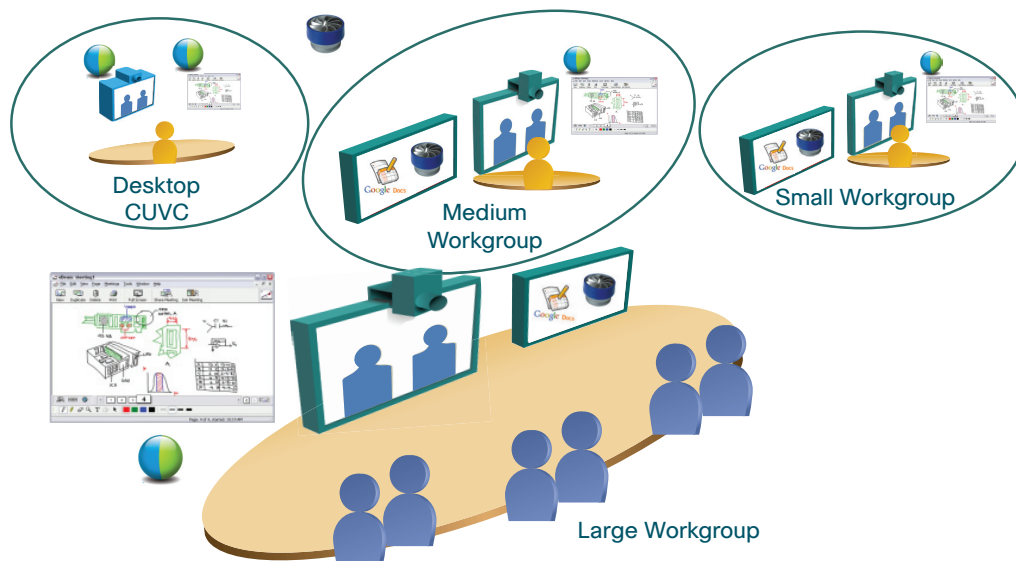
Source: Cisco IBSG, 2010

The ACR offers significant benefits in two main areas:
- Enables participants to stand up, move around the room, and still be captured in high-definition video. Key elements enabling this capability include:
  - A room layout conducive to movement and interaction
  - Café-height furniture that encourages participants to rise and move around the environment, plus increased height of the Cisco TelePresence equipment to capture participants as they move
  - Ability to fine-tune the three cameras (for the large-room option) to capture the dynamics of a workshop environment, and to control positions of key collaboration tools within the room
- Provides additional tools for the sharing and joint development of rich content:
  - A large interactive digital whiteboard, integrated with Cisco WebEx for document creation, annotation, and sharing across all participating locations
  - A second large screen for presenting and capturing detailed content (also shared via WebEx)
  - Content-sharing capability that enables seamless switching of documents among several PCs, the whiteboard, and the large screen

In addition, taking advantage of recently announced CiscoTelePresence interoperability solutions, the ACR and other TelePresence formats can be integrated with other video-conferencing systems (and webcams via WebEx).

The ACR is scalable and modular, and can be implemented in different-sized rooms to accommodate workgroups of varying sizes. It is supported by an end-to-end architecture that delivers a high-quality experience regardless of the participant's visualization mode. This enhanced experience encourages deeper participant engagement and delivers accelerated results.

Figure 5. ACR Is Scalable and Supports Different-Sized Workgroups

Desktop CUVC

Medium Workgroup

Small Workgroup

Large Workgroup

Source: Cisco IBSG, 2010

ACR: Large Room. The large-room version of the ACR supports up to 20 in-person participants using the Cisco TelePresence 1300 system as its foundation. The CTS 1300 combines three cameras with one screen, sending a video feed from one camera at a time. The active camera is selected automatically, based on the position of the individual who is speaking. This single video stream reduces the bandwidth requirement, providing significant cost savings.

The ergonomics of the room are structured to place the facilitator near the interactive whiteboard and close to a computer that controls most aspects of the interaction. From this position, the facilitator can see the individuals in the room, view the remote participants on the TelePresence screen, manipulate the content via the interactive whiteboard, and guide team interactions. Note that positioning the CTS 1300 system in one corner of the room, facing the opposite corner, enables the three cameras to capture interactions throughout most of the room. This positioning allows participants to view content on two adjacent walls (see Figure 6). The audio-sync capability of Cisco TelePresence enables rapid and automatic switching of the remote video view to whichever participant is speaking in the large-room ACR, regardless of his or her position in the room.

Figure 6. Large ACR with SMART Board on Left, Cisco TelePresence CTS 1300 on Right
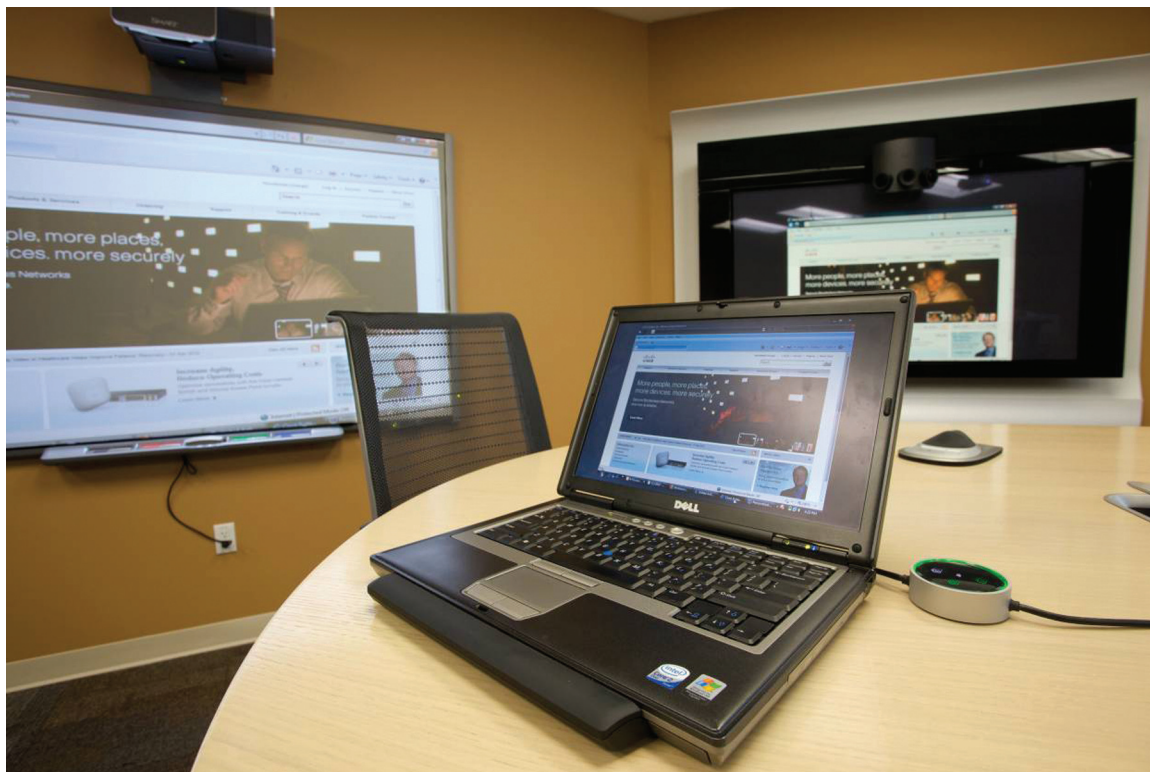
Source: Cisco IBSG, 2010

To create a complete collaborative environment that enables participants to see each other in "working session" mode, several enhancements are made to the room configuration:

- Café-height tables are situated so that participants can easily stand up and move around, as they often do during brainstorming. The conference table located closest to the CTS 1300 seats six, and several smaller café tables positioned farther away from the CTS 1300 accommodate three participants each (see Figure 7). Depending on room size, additional café tables can be added to accommodate 18 to 24 participants. The optimal room size ranges from 20 feet by 20 feet to 25 feet by 25 feet.

- High-quality audio (wideband) is captured from all meeting participants. There are three microphones on the front conference table and three microphones distributed among the café tables (for a total of six).

- The CTS 1300 cameras are tuned differently in the large ACR, with the center camera zoomed in and the two outside cameras zoomed out. This enables remote participants to clearly see participants seated in the middle of the conference table, while also ensuring that participants standing on the sides are fully visible. This tuning prevents participants sitting at the extreme left and right of the conference table from appearing too large, as they are closer to the cameras than the participants seated in the middle of the table.

- Tables, chairs, and the CTS 1300 system have been raised approximately 10 inches above their standard heights so that the cameras are closer to eye level when participants are standing, providing an excellent perspective for remote participants. Using higher-than-normal conference furniture makes it possible to capture both standing and seated participants, reducing the height difference among participants who are sitting and those who are standing, and making it easier to capture both in the same video frame. We have found that the higher, café-height seats also encourage participants to stand up and contribute more actively. (This physical configuration is preferred for collaboration sessions, even when there are no remote participants.)

- Consistency of room appearance is not critical in this environment. The ACR is not intended to create the impression of one virtual conference room table, as is the case with the Cisco TelePresence meeting format. Each ACR connects with a variety of other environments, such as another large ACR, other HD video-conferencing systems, or webcams. Relaxed room-remediation requirements (lighting, paint color, and so forth) for an ACR can result in reduced installation costs.

Figure 7. Facilitator at SMART Board in Large ACR

Source: Cisco IBSG, 2010

Figure 8. View from a Medium-Size ACR TelePresence Screen Showing a Facilitator in a Large ACR

Source: Cisco IBSG, 2010

While this solution relies on the ability of participants in different locations to see each other clearly, it is equally important (and in some cases, more important) that participants can share rich, detailed content and jointly make changes. Beyond the special configuration of the Cisco TelePresence system and room furniture, additional technology elements are focused on content sharing:

- The room design enables participants to interact naturally with content, assuring that technology doesn't interfere with preferred interaction styles.

- A large, interactive digital whiteboard enables users to write and sketch ideas. Participants in the room can write on the whiteboard as remote participants view these modifications via Cisco WebEx. An interactive whiteboard from SMART Technologies has a WebEx interface that permits easy capture of annotations and other document modifications, increasing the facilitator's effectiveness. When the facilitator is working at the interactive whiteboard, he or she is captured by the left-hand camera, and is fully visible to remote participants (see Figure 8). At the same time, the content on that whiteboard is shared (and can be recorded) remotely via WebEx.

- Content is also projected onto a second screen that enables a large display in high resolution. Participants might use this screen to review existing documents while employing the interactive whiteboard to create new content.

- Participants at the conference table can easily switch the content projected from their PCs to different displays (interactive whiteboard, separate high-resolution projector, or the autocollaboration screen of Cisco TelePresence) using a VGA

switching solution (such as the Puck from Steelcase). With one push of a button on the Puck, the content can be switched from a connected PC to the overhead projector, digital whiteboard, or autocollaboration screen on the TelePresence system (see Figure 9). With WebEx included, a room computer can connect to the Puck, enabling any participant (regardless of location) to display content on the whiteboard or large overhead. This avoids the time loss and disruption of the discussion flow that often occur as participants fiddle with PCs and cables.

Figure 9. Puck Connects Quickly and Easily to PC; Push of a Button Switches Content Among Displays

Source: Cisco IBSG, 2010

Cisco WebEx is used as the content-distribution platform for all participants regardless of participation mode. Before a WebEx session is started, the host can authorize annotation privileges for all participants, which enables joint markup of documents during analysis and problem-solving sessions. WebEx also offers a whiteboarding capability that can be useful for meeting functions such as task lists, concept development, and problem descriptions.

ACR: Medium and Small Rooms. A medium-size room configuration supports four to six participants in camera view and is based on the Cisco TelePresence 1000 system. Like the larger room, the medium room uses furniture raised about 10 inches above standard height, and also has a large, interactive whiteboard. As many as four participants can sit at the main conference table, with two to three at the café table in the back of the room (see Figures 10 and 11).
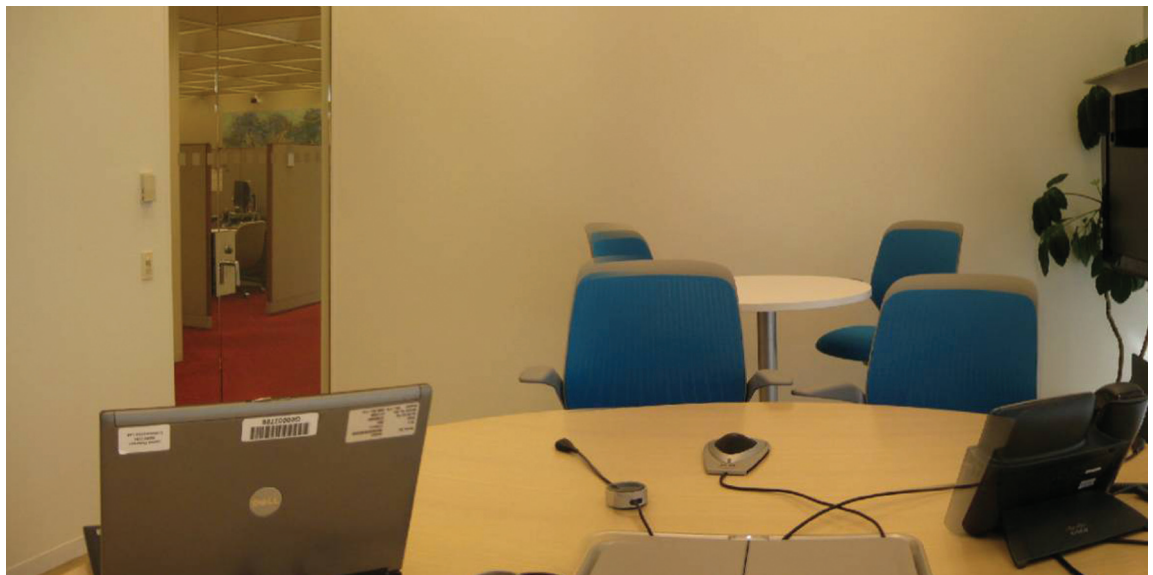
A small-room configuration supports one to two participants, and is based on the Cisco TelePresence 500 system.

Figure 10. Medium ACR—View from Rear Seats

Source: Cisco IBSG, 2010

Figure 11. Medium ACR—View from Front

Source: Cisco IBSG, 2010

Participation via Cisco Unified Video Conferencing

Enabling participation from many video modes is a critical element of the overall architecture. Participants can join via Cisco TelePresence, webcam, or a range of other HD video-conferencing technologies.

In many large corporations, teams come together from several locations, and not all have access to high-end video. Cisco Unified Video Conferencing (CUVC) enables individuals working from webcam-equipped desktop computers to send and receive video to and from a larger TelePresence-based location. Participants joining from their desktop via Cisco WebEx should use a headset connected to their PCs to enable audio synchronization with TelePresence. This provides higher-quality wideband audio, creating a more immersive experience for all participants.

CUVC images can show multiple participants on a single viewing screen, regardless of mode (such as Cisco TelePresence, webcam, or other HD video-conferencing solution).

Initial Customer Feedback and Business Impact

The Active Collaboration Room was developed in cooperation with a major customer, based upon a directive from Cisco Chairman and CEO John Chambers and the customer's CIO. In late 2008 and early 2009, the customer and Cisco worked on ways to use Cisco TelePresence to accelerate various corporate initiatives. Based on this success, the customer felt that a larger initiative—with a mandate for real innovation—would be worthwhile. A multifunction team was formed in March 2009, with several working sessions to define requirements, assess technologies, and develop concepts. These concepts were further refined via a flexible pilot that explored the capabilities of several different kinds of spaces. The team tested and validated the concept of using small, medium, and large rooms to accommodate groups of different sizes.

As with conventional Cisco TelePresence systems, the savings from avoided travel are typically more than sufficient to justify the investment. There are, however, many additional benefits, including:

- Reduced cycle time to complete complex projects
- Improved quality and reduced errors and rework
- Expanded participation to a broader range of participants
- Reduced cultural and communication barriers
- Enhanced group cohesion and morale

Cisco IBSG believes that accelerated profits from operations improvement and rapid innovation are probable future benefits. The current set of rooms is in early deployment with the customer, and we are starting to measure specific business transformation benefits. Initial feedback from the customer, based upon actual use, includes:

- **Greatest Impact:** The largest impact to date is from acceleration of business-process-reengineering initiatives and acceleration, and avoidance of mistakes in new product development through closer connections among project team members. ACRs were used to plan a follow-up CEO-CIO exchange with John Chambers and the customer's CIO, and the ACR-facilitated meetings ensured that nothing fell between the cracks, despite the tight timeline.

- **Beyond Technology**: The initiative to explore use of this technology has spurred the customer to look at business-process reengineering as more than a series of one-week events. The customer is exploring multiple mechanisms and timelines to achieve process-improvement acceleration. ACRs will allow the customer to push these ideas forward.

- **People Perspective:** The casual nature of the ACR (compared to the meeting format) allows people to productively interact in ways that the customer has not seen before. People feel comfortable in this space. (Several participants have since arranged their offices to allow for a "stand-up" workspace.)

- **Types of Meetings:** The space is ideal for working teams of any kind. It is too casual, however, for a formal, "boardroom" type of meeting.

Conclusion

Highly distributed teams, escalating travel costs, and the difficulty of coordinating participants' schedules are limiting the effectiveness of traditional collaboration and innovation-support technologies. The Active Collaboration Room represents a significant breakthrough in workgroup collaboration that is better suited to today's global business environment. ACR literally creates a new context for collaboration that supports the way informal workgroups prefer to interact, making physical location irrelevant. Combined with the cost savings and improved productivity and innovation associated with ACR-based workgroup sessions, the solution is compelling to enterprises seeking to compete and innovate in a global marketplace.

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More Information

Cisco Internet Business Solutions Group (IBSG), the company's global consultancy, helps CXOs from the world's largest public and private organizations solve critical business challenges. By connecting strategy, process, and technology, Cisco IBSG industry experts enable customers to turn visionary ideas into value.

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