Cisco Manufacturing Mobile Video Collaboration Solution with Librestream

Manufacturing companies face significant challenges in today’s complex economic environment. Increasingly globalized production and supply chain operations, time-to-market pressure, and the need to provide high levels of service and support for customers worldwide are driving manufacturing companies to find new ways to collaborate and utilize their best asset—the knowledge and expertise of their employees and partners. Extending access to these valuable resources is critical to optimizing manufacturing processes and improving responsiveness.

The Cisco® Manufacturing Mobile Video Collaboration (MMVC) solution combines Cisco’s Collaboration tools and Unified Wireless Network architecture with mobile wireless video solutions from key partners such as Librestream to enable real-time mobile collaboration between local personnel and remote experts. With the MMVC solution, manufacturers cost-effectively harness the collective expertise of employees and partners, reaping benefits across manufacturing business functions including:

- Reducing plant downtime and improving worker productivity through faster response to issues on the shop floor
- Providing effective customer service and meeting higher service level agreements through increased access to expertise for customers and field service personnel
- Accelerating time to market through effective collaboration between engineering, manufacturing, and suppliers during prototype and initial production runs
- Improving supplier quality and delivery through increased supplier monitoring and video collaboration to resolve supplier issues
The Challenge: Providing Expert Support Across Globally Dispersed Operations

Globalization has created tremendous new opportunities for manufacturers to expand revenue through new markets, drive innovation, and reduce the cost of operations. However, as operations and business partners become more globally distributed and the pace of business accelerates—from design to production to service—it is becoming increasingly difficult for manufacturing organizations to retain access to the local expertise needed to solve problems or collaborate on new product designs.

Such challenges can occur across manufacturing functions, from product design and operations to customer service. Company experts are usually located at headquarters, existing plants, or regional offices, making them hard to access from remote production facilities. Even when located onsite, production facilities still struggle with siloed communication that can make experts difficult to reach. Plant floor communications are often limited to two-way radios that restrict conversation to a limited number of employees, and don’t support the collaboration necessary to solve complex problems. Even locating someone to help resolve an issue can be a challenge: In a recent Forrester study, 63 percent of manufacturers surveyed said they could save an hour or more of problem resolution time if they were able to quickly locate experts.

Similar collaboration challenges occur with supply chain partners, as production is increasingly outsourced to globally dispersed suppliers. Proactively monitoring production at supplier locations, resolving issues, or reviewing parts to verify acceptable quality levels or address quality and throughput concerns can become a significant challenge across a global supply chain. Also, lack of effective collaboration tools and processes may cause significant delays in problem identification and resolution, resulting in quality issues and production delays.

The challenges of accessing and collaborating with experts also impact other areas, including product development. As manufacturers expand their global R&D footprint internally and through partners, they are looking to identify and develop new ideas while managing costs. This worldwide design effort requires companies to communicate effectively across functions and sites throughout the product development process. An inability to collaborate between experts all too often results in delays in addressing prototype build issues, meeting design-for-manufacturability objectives, reviewing remote testing issues, and supporting product launches at multiple plants—ultimately extending the time it takes to meet full production volume and quality levels and impacting new product profitability.

At the same time, accessing expertise and knowledge is critical to responding to customer issues and providing excellent customer service. Service operations represent an increasingly important opportunity to grow revenues and customer loyalty for many organizations. Global manufacturers typically need to expand field service operations, either directly or through partners, to provide local support and maintenance, repair, and overhaul (MRO) services. As products proliferate and become more complex, it is increasingly challenging for field service technicians to access the expertise they need to meet customer demand.

Studies show that difficulty in locating, accessing, and collaborating with subject matter experts typically slows problem resolution and process optimization, and requires lengthy and expensive travel from other plants, HQ, or partner sites. Effective remote collaboration is therefore critical for extending access to knowledge across a globally dispersed workforce, helping to speed resolution of production issues and maximize uptime and asset utilization.

Using Video Collaboration to Extend Access to Expertise

Video presents manufacturing companies with the opportunity to effectively scale and access expertise across functional, geographical, and company boundaries. With reliable, flexible communication channels, manufacturers can overcome the constraints associated with limited resources in globalized operations.
The adoption of mobile video for business applications, as well as its integration with other applications and collaboration tools, has created a new wave of capabilities that are changing the way employees interact and work. Manufacturers may now extend video collaboration to a variety of new uses to transform key business processes, from plant floor operations to customer service. The increasing availability and capability of these new applications, the convergence of manufacturing systems, and the unique value proposition of mobile video combine to make it a compelling solution for broadening the reach of remote subject matter expertise.

Mobile video collaboration can be combined with the ability to quickly locate available experts; communicate across multiple locations, devices, and companies; and quickly pull multiple parties into a collaborative session to share expertise and resolve problems. Cisco and its partners, such as Librestream, are bringing together these capabilities in the Manufacturing Mobile Video Collaboration (MMVC) solution. MMVC has tremendous potential to transform key manufacturing business processes through increased access to knowledge and expertise and more effective collaboration across multiple devices, locations, and functions, all while reducing costs and improving productivity.

The Solution: Manufacturing Mobile Video Collaboration

The Cisco MMVC solution provides a mobile environment for live, secure video collaboration. It is built on the Cisco Unified Wireless Network architecture and integrates Cisco collaboration solutions with partner applications and endpoints. The key components of the solution include the following.

Librestream Onsight Expert and Onsight Cameras
Librestream is a Cisco Developer Network partner that has developed an Onsight Expert application for remote employees and Onsight cameras to enable local mobile video communication. Designed for rugged environments and WLAN (802.11 b/g)-based communications, these devices combine video and voice communications along with "telestation" capabilities.

Cisco WebEx
Cisco WebEx™ web-based conferencing is integrated directly into the Onsight Expert application to allow users to quickly and easily bring other subject matter experts into Onsight sessions. Cisco WebEx sessions can be launched directly from the Onsight Expert user interface and allow desktop sharing across multiple locations and companies.

Cisco Unified Communications
Cisco Unified Communications solutions enable integration of the Onsight solution with the other communication tools and applications deployed across the manufacturing organization and partner ecosystem, bringing additional capabilities to the Librestream solution.

Key Unified Communications integration points include:

- Cisco Unified Presence on both the camera and Onsight application, enabling users to see which experts are available and quickly communicate with them, avoiding delays and productivity issues associated with trying to find available resources.
- Cisco Unified Communications Manager, which allows the Librestream application and devices to integrate easily into the existing communications infrastructure.
- Interoperability with endpoints such as Cisco Unified Personal Communicator and the video-enabled Cisco Unified IP Phones 9900 Series, allowing Onsight devices to communicate with a range of endpoints to share video and voice sessions.
Cisco TelePresence
Onsight sessions can also be shared through the auto-collaborate channel in the Cisco TelePresence solution, allowing users in multiple locations to experience immersive virtual meetings while sharing the Onsight session across TelePresence sites. This allows subject matter experts from multiple locations and companies to discuss issues face-to-face with remote employees on the plant floor or in the field, while sharing the live video and data feed.

Cisco Unified Wireless Network
The Librestream Onsight solution runs on the Cisco Unified Wireless Network, a scalable, manageable, and secure enterprise-class WLAN architecture that provides the performance needed for demanding collaboration applications. The network also supports other manufacturing applications such as location services and video surveillance, providing a platform on which to deploy multiple applications that can improve productivity, security, and overall performance.

The integration of Librestream Onsight and Cisco Unified Communications enables efficient and highly effective video collaboration with remote mobile employees that can be easily delivered across multiple devices, locations, and applications. This allows manufacturers to quickly and cost-effectively extend subject matter expertise to support critical business processes and resolve issues, regardless of location or function—even across company boundaries.

Use Cases for Manufacturing Mobile Video Collaboration

Manufacturing Mobile Video Collaboration for Operations Excellence
On the plant floor, the Manufacturing Mobile Video Collaboration solution provides personnel with the ability to quickly locate a needed expert in the plant or at a remote location, and start a session with them to share live, high-resolution video, along with voice and data. The remote expert can in turn bring in other resources as required.

Such a capability allows manufacturers to improve event response and more efficiently resolve production problems—including issues with equipment or component parts. It also enhances best-practice sharing and can be used to help train operators and technicians on new products and processes. The MMVC solution allows plant floor personnel to record and post videos which can be used to monitor processes, review equipment as part of a maintenance program, or monitor product quality concerns. The end result is reduced downtime, increased efficiency, and improved product quality.

Figure 1 shows how the Manufacturing Mobile Video Collaboration solution with Librestream allows a manufacturer to quickly move from problem notification on the plant floor to collaboration with remote experts and partners to resolve the issue.
Manufacturing Mobile Video Collaboration for Supply Chain Agility

The MMVC solution improves supply chain agility by extending access and visibility between remote experts and supply chain partners. It allows manufacturers to collaborate in real time with suppliers to help them troubleshoot quality or production issues at their facilities, rather than waiting to discover and address issues after they impact the OEM. The solution can also be used to review potential part-quality issues to determine acceptability prior to shipment from the supplier. Manufacturers can increase supplier monitoring by providing MMVC devices to personnel for their visits to supplier manufacturing locations.

Manufacturing Mobile Video Collaboration for Customer Intimacy

To create a differentiated customer experience and grow service revenue, manufacturers need fast and effective customer service and the ability to meet demanding service-level agreements. Achieving these goals requires that service and support representatives have access to extensive knowledge and expertise. Applications such as onsite industrial equipment maintenance, automotive and transportation equipment repair, and remote operation and support services can benefit significantly from MMVC.

With this solution, customers can share live video feeds, along with access to data and applications, with service reps who can then contact additional experts as required to quickly resolve the problem. Field service representatives can also use the MMVC solution to stream live video or record issues to speed resolution time and build a knowledge base. In addition, the MMVC solution can help transform business processes, such as providing an option for customers to review and approve parts and equipment remotely to save time and speed approvals compared to onsite reviews.
Manufacturing Mobile Video Collaboration for Continuous Innovation

The MMVC solution also helps manufacturers accelerate time to market and success rate for new products. Manufacturing, engineering, and suppliers can collaborate in real time during prototype builds to address manufacturability or quality issues. The solution can be used to review test results and allow engineers to support multiple plants during a new product launch, improving response time to issues, increasing engineering productivity, and accelerating new product introduction.

Figure 2. Collaboration in Real Time with the MMVC Solution During the Prototype Build

Example: Addressing Prototype Build Issues

<table>
<thead>
<tr>
<th>Organization</th>
<th>Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant-floor</td>
<td>Manufacturing issue identified during prototype build → Use Presence to find MFG Engineer with Libostream Onsight Camera → Connect with remote engineer supporting build</td>
</tr>
<tr>
<td>Engineering at R&amp;D Centers</td>
<td>Libostream Expert for audio &amp; video call → Engineer identifies potential design change—need to review with team → Review with remote engineering &amp; product teams using TelePresence Collaboration Space</td>
</tr>
<tr>
<td>Supplier</td>
<td>Locate and communicate with Supplier via WebEx Connect IM → Review changes in WebEx session &amp; post files to Connect site → Review Libostream Onsight video feed from next prototype build to confirm fix</td>
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Why Cisco for Mobile Video Collaboration?

Cisco is the world leader in providing networking technologies for the manufacturing industry. The Cisco Manufacturing Mobile Video Collaboration solution unifies globally dispersed value chains by supporting a wide range of unified communications endpoints and applications to provide increased access with flexible and efficient deployments. With unified communications, manufacturers are able to integrate powerful mobile video capabilities into existing communications infrastructures, giving users the ability to collaborate using phones, personal communication software, Cisco WebEx, and Cisco TelePresence.

The Cisco MMVC solution is built on the Cisco Unified Wireless Network architecture, which supports high-performance applications such as video and voice communications, and is part of a converged manufacturing network based on the Cisco Borderless Network Architecture. The Cisco Borderless Network Architecture incorporates innovations across Cisco’s routing, switching, wireless, security, application-optimization, and network management portfolios. These innovations enable the next-generation borderless network and user services necessary to deliver transparent mobility; rich multimedia services; and a unified, secure, policy-driven infrastructure for wired and wireless access.
Cisco Advanced Services

Unified Communications Advanced Services help manufacturers develop a secure and resilient solution that meets their needs both today and into the future. This comprehensive service portfolio is based on proven methodologies to help accelerate cost savings and productivity gains. Customized planning and design services focus on creating solutions that meet business needs, while award-winning technical support increases operational efficiency. Remote management services simplify day-to-day operations, and optimization services enhance solution performance as business needs change.

Cisco Smart+Connected Manufacturing

Cisco Smart+Connected Manufacturing solutions help companies to use the strength of the network to be more connected, responsive, and competitive throughout the value chain. Security, management, rich connectivity, video, media, mobility, voice, and identity services are enabled within the network. With the network as a platform, manufacturers can integrate access to information for every user, enabling powerful collaboration with colleagues, partners, and customers around the world.