Accelerating Lean Productivity with Immersive Collaboration

By Kevin Sullivan, Director, and Craig Hartman, Senior Director, Cisco IBSG Industrial Practice

Multinational corporations must act fast to solve critical business problems. With rapid realignment occurring in the new economy, many customers are looking for manufacturers to cut costs, improve service and support, and adapt products to new uses. Meeting these demands quickly is a matter of survival for many manufacturing companies. A new collaborative platform is required to improve companies' business processes and spark innovation.

Many organizations have been forced to reduce travel budgets, professional services, and headcount to meet financial expectations. At the same time, the workload has increased due to the new customer requirements described above. Critical initiatives are often slowed by the need for input from a widely dispersed group of stakeholders in an era of global operations.

Large corporations are looking for productivity breakthroughs to achieve the business results they need. An immersive, virtual collaboration environment can help global teams overcome the obstacles created by expanding distances and shrinking budgets by quickly developing innovative business solutions that boost productivity.

Problem-Solving Initiatives Challenged by Distance and Resources

Over the years, corporations have developed a number of programs to increase productivity. Lean workouts, Six Sigma initiatives, integrated product teams, and ideation focus groups are all processes that help multidisciplinary teams solve thorny business problems. Some of these initiatives have traditionally focused on developing new products and breakthrough solutions to create new revenue streams. Others have concentrated on improving manufacturing productivity, lead times, quality, and product consistency. A widespread approach called "lean" employs a rapid, team-based analysis of end-to-end processes to simplify tasks and reduce waste.

All of these initiatives come with their own sets of terminology and methodology. What they have in common is a team-based, collaborative approach to problem-solving. They rely heavily on face-to-face meetings to brainstorm, present findings, and explore alternative ideas to move these initiatives forward.

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In today's manufacturing world, however, participants are frequently scattered across the globe, with limited time and budget to travel to a single location. The logistical difficulty of bringing key team members together often delays meetings and blocks companies from achieving desired results.

Cisco's Internet Business Solutions Group (IBSG) proposes an immersive, interactive virtual environment to overcome the challenges of time, distance, and limited resources.

Traditional Collaboration Pain Points Are Intensified in Globally Distributed Teams

Traditionally, Six Sigma or lean workout teams meet for extended periods to set direction, map conditions, review designs, develop solutions, and finalize recommendations. They need to be able to see documents, facilities, equipment, and each other. They often work collaboratively on large wall charts, whiteboards, or flipcharts, with images of process maps and other documents in full view of participants to enable a highly focused, energized team.

The business impact of these efforts depends on the ability of teams to act quickly. Processes such as understanding the voice of the customer, training, mapping value streams, and obtaining buy-in to recommendations require visual interaction to be effective.

Even with well-developed methodologies and a committed team, lean workouts face numerous challenges:

- Arranging timely participation of critical team members in a single location
- Gaining trust of participants during preparation
- Framing and communicating the problem and related impact
- Analyzing existing business models and processes, and designing new ones
- Gaining participation of key executives for recommendation read-outs
- Obtaining full agreement on recommendations

These pain points are exacerbated in multinational corporations, where widely dispersed global teams are the norm. The key competencies needed to solve a particular business problem may be spread among individuals on three or four continents. The challenge is bringing these individuals together quickly and cost-effectively in a way that allows them to interact freely with one another, share and revise design documents and process maps, and view the condition of equipment or facilities. It is not enough to conduct these meetings with one or more individuals participating via audioconference; without face-to-face interaction, the entire process loses critical elements such as trust, engagement, insight, creativity, and commitment.
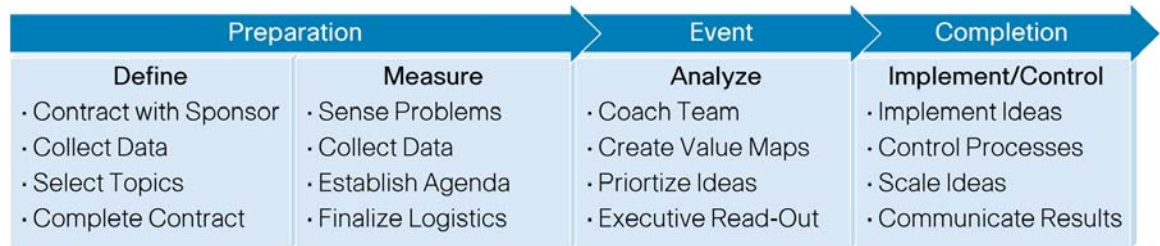
An Immersive, Interactive Platform Enables Breakthrough Collaboration

Enabling distributed teams to conduct lean, timely, cost-effective workouts will accelerate business transformation.

Lean workouts begin with planning and content development during the preparation phase. The result of the preparation phase is the lean event, in which distributed teams come together to analyze value stream maps, identify improvement ideas, and propose actions to

executive sponsors. Figure 1 provides an overview of a typical lean Six Sigma initiative. The elapsed time to complete these steps is critical to the success of the initiative since delays can affect business operations.
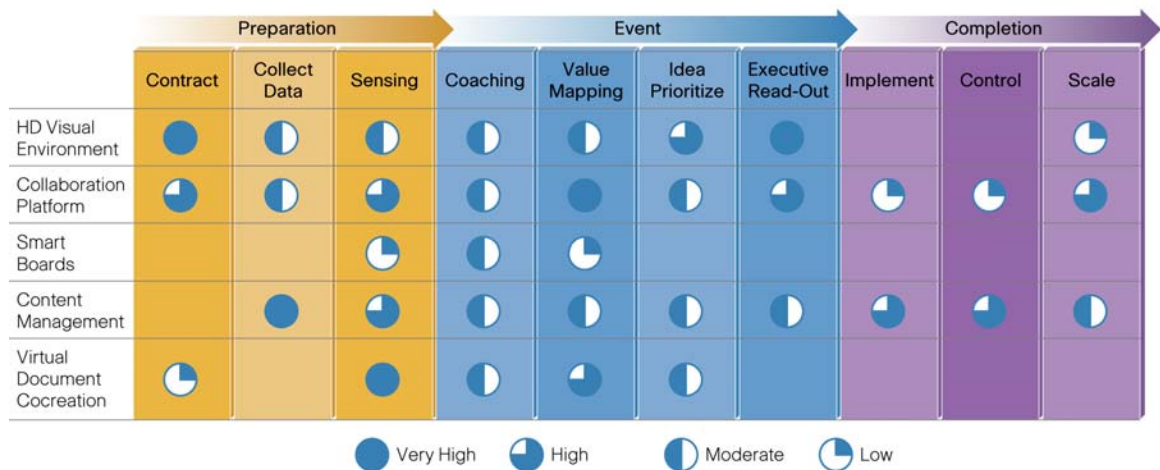
Figure 1. Lean Six Sigma Process

Preparation		Event	Completion
Define	**Measure**	**Analyze**	**Implement/Control**
· Contract with Sponsor	· Sense Problems	· Coach Team	· Implement Ideas
· Collect Data	· Collect Data	· Create Value Maps	· Control Processes
· Select Topics	· Establish Agenda	· Priortize Ideas	· Scale Ideas
· Complete Contract	· Finalize Logistics	· Executive Read-Out	· Communicate Results

Source: Cisco IBSG, 2009

An immersive, interactive virtual environment can make this process more productive and scalable, enabling remote participation and visibility of all participants. With high-definition video communications, a web-based collaboration platform, and other interactive collaboration tools, initiative leaders can accelerate the process at every stage. As Figure 2 illustrates, a life-sized, high-quality video environment such as Cisco TelePresence[1] is particularly helpful in accelerating the contract definition, idea prioritization, and executive read-outs. A collaboration platform such as Cisco WebEx[2] can enhance the entire process, especially value-mapping during the event. The ability to share, annotate, and cocreate documents in real time is essential for sensing and value-mapping, and a robust content-management capability underpins the productivity enhancements throughout.

Figure 2. Degree to Which Lean Processes Are Enabled by Collaborative Solutions

	Preparation			Event				Completion		
	Contract	Collect Data	Sensing	Coaching	Value Mapping	Idea Prioritize	Executive Read-Out	Implement	Control	Scale
HD Visual Environment	Very High	Moderate	Moderate	Moderate	Moderate	High	Very High			Low
Collaboration Platform	High	Moderate	High	Moderate	Very High	Moderate	High	Low	Low	High
Smart Boards			Low	Moderate	Low					
Content Management		Very High	High	Moderate	Moderate	Moderate	Moderate	High	High	Moderate
Virtual Document Cocreation	Low		Very High	Moderate	High	Moderate				

Legend: ● Very High   ◖ High   ◑ Moderate   ◔ Low

Source: Cisco IBSG, 2009

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[1] Cisco TelePresence is an innovative technology that combines rich audio, high-definition video, and interactive elements to deliver a unique, "in-person" experience over the network. It is designed to bring users closer to the important people, places, and events in their personal and professional lives.

[2] The Cisco WebEx product portfolio includes technologies and services that allow companies to engage in real-time and asynchronous data conferences over the Internet as well as share web-based documents and workspaces that help improve productivity, performance, and efficiency of workers in any size organization.

Timely Problem Solving Accelerates Business Results

When workout teams are able to move quickly, companies can realize business results more rapidly. Generally, a traditional lean workout initiative should be completed in two to three months. The complications of distributed teams, busy executive schedules, and cost controls on travel can extend the process to six months or a year. With an immersive virtual environment, collaboration can occur rapidly. Distributed teams can meet regularly to gather and analyze data, focus their thinking, and develop more creative solutions. They have rapid access to executives, customers, and experts who can provide critical information needed to accelerate decision-making. And, reducing travel saves time and lowers overall costs.

Figure 3. Event Preparation by Dispersed Team

Source: Cisco IBSG, 2009

As illustrated in Figure 3, a dispersed team can quickly and efficiently join together via TelePresence and WebEx Connect to prepare for a lean workout event. In face-to-face sessions such as this, remote team members can participate fully in collecting data, selecting topics, creating the agenda, finalizing logistics, and other preparation activities.

The immersive collaborative platform also enables remote participation in read-outs of value stream maps (VSMs). A remote presenter standing in front of a Cisco TelePresence CTS-500 unit can even sketch out ideas on a flip chart and have those images projected to the whole team in the TelePresence conference room (see Figure 4). The environment facilitates a free interchange of ideas as the group develops plans and makes recommendations.

Figure 4. Remote Participation in Value Stream Map Read-Out
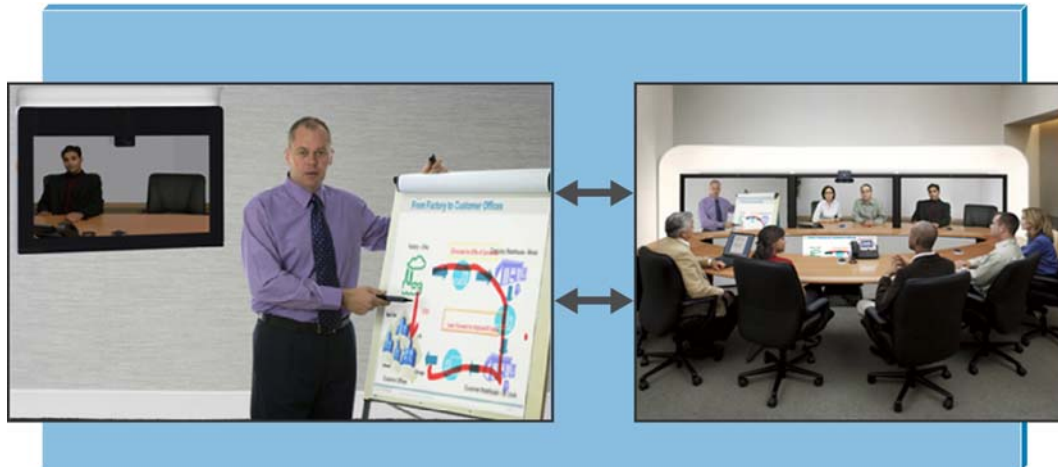
Source: Cisco IBSG, 2009

In a third use case, the dispersed team can interactively annotate and modify VSMs and other documents, allowing all participants to view the same images and to add their own annotations in real time (see Figure 5). In this case, a group in a traditional conference room is able to interact with a group meeting in a TelePresence room using WebEx, web cameras, and touch-sensitive interactive whiteboards or tablets.

Figure 5. An Immersive View into Collaboration Sessions Accelerates Value Capture

Source: Cisco IBSG, 2009

One example of the effectiveness of this approach is a leading technology company that was seeking to gain market share by expanding into emerging markets. Its global technical teams needed to collaborate on localizing products for new markets. The company's initial efforts to accomplish this using audioconference calls, e-mail, and frequent travel proved ineffective, and the company did not meet revenue projections. By implementing the collaborative, immersive environment described above, the company was able to reduce cycle time for localization by one-half. The result was a large portfolio of localized products

and increased sales in emerging markets. They also reduced costs, scaled scarce technical resources, and improved employee morale.[3]

In another example, a large industrial company found its global service support was inadequate for large energy companies. They could not effectively dispatch technical personnel on a timely basis, and overall costs were high. As a result, large customers began looking to other providers to avoid excessive downtime. To resolve this situation, the company conducted a three-day lean event with 30 attendees from five global locations. They used a high-definition, immersive video environment for face-to-face interactions among team members at four international sites, combined with a virtual collaboration platform and desktop tools for document sharing and brainstorming. Through this robust, interactive environment, they were able to design new processes and make recommendations that resulted in a significant reduction of time to service customers and overall service costs. The leader of the lean event stated that the immersive, collaborative environment resulted in a 50 percent reduction in time-to-decision among participants on key issues. The session was completed in 30 percent less time than a conventional workout, resulting in significantly increased productivity.[4]

Manufacturing companies conduct more than 10,000 such events per year.[5] This immersive, collaborative platform has the power to transform these lean initiatives, yielding much higher productivity and accelerated benefits.

Getting Started

Executives can increase productivity and accelerate results of distributed teams engaged in lean workouts by building an immersive, collaborative environment. Begin with a trial in a few business centers that are most strained by changing business conditions and new customer needs. From these pilots, develop a scaled model with best practices from Cisco and other industry leaders.

Key steps in starting your companywide effort include the following:

- Identify a critical process or common initiative such as lean workouts that rely on remote participants
- Analyze the key pain points that are barriers to completing the component processes, such as document creation, design, sharing, and decision-making
- Identify the potential benefits in terms of productivity gains due to fewer meetings, less rework, and accelerated time-to-decision and action
- Design a collaborative platform that includes scalable, immersive elements that are cost-effective and easily adapted by the organization
- Conduct a pilot to determine impact, and develop a scalable plan
- Scale the use of the collaborative platform to the entire organization

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[3] Cisco IBSG, 2009
[4] Ibid.
[5] Ibid.

More Information

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps CXOs and public sector leaders transform their organizations—first by designing innovative business processes, and then by integrating advanced technologies into visionary roadmaps that address key CXO concerns.

For further information about IBSG, visit http://www.cisco.com/go/ibsg.

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