Steelcase: Learning How to Implement Customer-Focused, Enterprise-Wide Lean

Building momentum and involvement as lean extends to office areas.

Lea A.P. Tonkin

What happens when "lean" meets the administrative side of an organization that's already achieved dramatic improvements in production operations? Can processes for order entry, distribution tracking, and other elements be mapped, brainstormed, and then streamlined or otherwise improved as effectively as on the plant floor? As Steelcase, Grand Rapids, MI employees recently shared during an AME workshop, the answer is a resounding, "Yes!" Participants in the "Steelcase University" program learned how lean concepts are being used to develop flow cells, standardized work, kaizen (improvement) activities scaled to office processes, sequenced pull signals, visual management, and other reflections of this philosophy. Customer-focused improvements encompass cost, speed, and productivity gains, depending on the process.

Senior Leadership Support

Right from the start, enterprise-wide lean demands support throughout the company, starting with senior leadership. "We are crossing all sorts of functional and structural boundaries in this effort," said Nancy Hickey, senior vice president, chief administrative officer, and executive sponsor of the company's office lean initiative. "You have to have leaders at the top aligned in a cohesive point of view. That has been really helpful in our transition." For example, Hickey and three of the other top executives reporting to the CEO are the senior executive steering team (the lean action committee, or LAC). Their involvement in everything from selection of office lean consultants to monthly meetings with lean project teams and gemba (being where the action is) walks with the lean consultants reflect a consistent focus. "We need to show that we are clearly serious about enterprise-wide lean, by not canceling our meetings and by staying on our schedules, and keeping other commitments," Hickey said. "It's not just another 'program du jour.'"

In Brief

As Steelcase employees extend customer-focused lean concepts beyond production into office and administrative areas, their initial efforts yield gains in cycle time reduction, cost, and productivity. Yet they recognize the need for long-term commitment to this reorganization, including support from senior management. Energy and interest are building as the lean efforts continue.

Picking high-potential people as office lean consulting team (OLCT — originally four members, now six) members in January 2005 set the tone for the office lean activities. "We looked for people with experience in managing others, and pulled them out of our organizations for a year — a testament to our level of commitment," continued Hickey. "We also are building the knowledge and vocabulary that will help us understand lean and how it is applied. It requires a broader mindset about what lean can do — about better processes and better customer results.

"Most challenging but most rewarding is to look at cross-functional changes that are happening as we continue our lean office initiatives," she said. "We've tended to be functionally organized in this company. Yet when we look for lean improvements in order-to-cash and product development, for example, these projects cross over several functional areas. You, and others in the organization, start to realize that what is happening in other companies affects your own activities and affects how we meet customer needs." Special challenges include traditionally weak or absent end-to-end process focus and process measures.

Structure to Support and Sustain Successful Lean Initiatives

Steelcase senior management understands that their organizational structure and environment must support and help to sustain lean improvement activities. Without such a governance process or accountability structure, lack of clarity or political conflicts can lead to failure. Each administrative area targeted for a lean project has a designated project process sponsor

(generally a vice president) with authority to direct project action. A value stream manager (or managers) for a segment (or segments) upstream or downstream of the selected project area helps to shepherd the project to completion. A vice president from the finance area whose responsibilities include coordination among projects in the order-to-cash sector of the business as well as OLCT members (internal lean consultants) support these individual activities.

Three-day value stream mapping workshops in targeted process-es typically launch a series of collaborative improvements. (Lean project phases are shown in Figure 1.) Participants include associates from the selected area as well as others — customers or suppliers, either internal to the company or from the outside, depending on the process — typically considered upstream or downstream processes, said David Mann of the OLCT. Mann said that, in the case of the sales organization, distributors or dealerships (independent businesses) may participate in the sessions. They map (see "Value Stream Mapping and Visual Control:

Lean Project Phases

Preparation: Office Lean Consulting Team (OLCT) and functional leaders agree on the scope of the lean project (end–to-end and functional, objectives, team members, logistics, etc.).

Training: The team participates in an Introduction to Office Lean class (half-day session).

Current state: The team develops and agrees on a well-understood map of the current situation (this phase and the next two phases continue over three days' time).

Future state: The team develops a proposed vision of a lean future state and reaches agreement with the decision panel to go forward.

Planning: The team develops a proposed implementation plan and reaches agreement with the decision panel on the plan.

Implementation: Step-by-step actions to achieve the future state.

Kaizen: Training the team on lean tools and applying them to the value stream (this phase and the next two phases continue for 90 days).

Progress checks: Reviewing efforts, weekly and monthly, to keep the project on track.

Documentation: Updating the value stream map to reflect new work and performance.

Communication: Sharing effort and new knowledge within the organization.

Figure 1.

What's Really Going On Here?") current and future processes, evaluate potential remedies for problem or unnecessary activities, and develop a 90-day action plan to implement the desired future state.

Members of a decision panel (leaders such as the director, general manager, or vice president) whose areas are involved in or affected by a process) play a key role in oversight and approval of the project's progress. They join the project team on the second day of their workshop, asking questions about the nature of planned changes shown on the future state map. They discuss with the team whether the project should go further or pull back. After sometimes-pointed back and forth exchanges, panel members and the team come to agreement — and mutual commitment — on matters such as speed, scope, and specifics for the future state. This process builds the buy-in and understanding with the project team to set needed and attainable goals. "It is the idea of a process view overlaid on a functional organization," Mann said. "Lean projects are operating as virtual process operations in a real, day-to-day context of our functional organizational structure." The idea is to provide needed oversight and support for sustained success rather than single hits.

Progress checks help project teams keep improvement activities on track. Complex projects typically review their work with the decision panel at 30-day intervals. Together, they review actual progress versus plans, share what the team has learned in the past 30 days, and discuss issues and potential solutions. Project managers, meanwhile, review progress (on order-to-cash, for example) each week with the coordinating order-to-cash vice president. Project teams use the Gantt chart section of single-page A3 project plan documents to track weekly progress. They also use the A3 to guard against "scope creep," identify obstacles and roadblocks, and record interim and final progress against project objectives and measurements.

"If a major improvement project takes a year, we segment it in 90-day increments," Mann said. "We look at the resources and support required, the objectives, and results. Teams, in the beginning, tend to plan for more lengthy improvement projects. Over time, the authorizing process approach flows down from the senior level, and responsibility for results ultimately flows upward. This dynamic helps define project segments in which cadence of progress can be more readily sensed, and in which the lean approach to learning through smaller quantities more frequently applies." He added that a key understanding as projects continue their work is that learning is cycled between the project team and decision panel, enabling needed adjustments (the old familiar PDCA, or Plan, Do, Check, Act). At the conclusion of the project phase of improvement, the project sponsor and the team report to the lean action committee about their objectives and achievements. Ongoing monitoring of process measures, and improvement activity, should continue.

Creating procedures to reduce handoffs and errors in a specific project, for example, is valuable to the organization. Over time, what becomes even more significant is opening eyes and understanding about the idea of further improvement opportunities, according to Mann. Project experience gives leaders, teams, and individuals the understanding and mindset that open the lean doorway a bit more.

Value Stream Mapping and Visual Control: What's Really Going On Here?

Many folks in administrative areas may shy away from this step-by-step analysis of their activities. Traditional ways of doing things in the office are different from what's happening on the plant floor, they might say. Yet Steelcase personnel in various administrative areas, championed by senior leadership and coached/encouraged by internal lean experts (sensei), have found that Value Stream Mapping (VSM) serves as a useful tool in lean projects designed to more effectively meet customer requirements. Mapping helps to answer

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the three Toyota Production System (TPS) questions:

1) What is the process?
2) How can you tell if it is working?
3) What's the process to develop the answers?

"There is a huge value to mapping in administrative areas," said Jerry Schipper, director, Solutions Fulfillment Team. "First, it is an excellent learning experience for the people involved. It is surprising how often you will hear people say, 'Wow, I didn't know that is the reason we are doing it this way!' Even when people are seasoned in their jobs, it doesn't necessarily mean that they fully understand all the processes or use the best practices. Too often in office environments, people do their work in a way that seems most comfortable to them. But it may not be the most effective way or one that meets the needs of the organization and its customers."

Whereas manufacturing process maps generally are linear, office process maps often branch into multiple paths; many resources are shared; and metrics such as cycle times and yield are usually unknown. "Mapping is critical, and it can be ugly," Mann added. "The front end of many enterprise value stream maps looks like a spaghetti map of a production process in pre-lean state, with many crossed wires. There may be a lot of reverse flows, resulting from poorly-specified requirements or a lack of standardiza-

tion. You're uncovering sources of frustration. It's almost a cathartic experience — a very powerful thing."

Mann noted that VSM contributes to visual control of processes, a key element in lean activities. "Our work force is down 45 percent from four years ago. Many people are really stretched to cover processes that used to have twice the staffing. It is important to understand the activities of upstream and downstream neighbors. In turn, you determine where there are loop-backs, waiting, queues, rework, and other wasted activities ("Seeing the Process, and the Muda" in Figure 2). Mapping very clearly points to problems and helps to focus direction for lean enterprise improvements. We are working on this area, but we still are not very robust yet," he said. "We need to see the pace and the progression of work — not just in terms of what the work is, but comparing actual output (weekly, daily, or other increments) with *expected* output. If we were doing that, it would enable us to see process status more clearly. In turn, that would prompt us to take a much closer look at the work content and to see additional areas for improvement. We've made a lot of improvements, but we are working toward progress in that area."

Reorganization for Better Customer Service: Solutions Fulfillment Team

Mapping marked the start of customer-focused reorganizations (the evolution continues) within Steelcase's Solutions Fulfillment Team (SFT). The main responsibilities for this group of approximately 140 employees are entry and management of dealer orders, from order receipt through delivery to

Seeing the Process, and the Muda

True "pull" may rarely exist in the office. The office lean project teams strive for:
- Eliminating non-value-added process steps and hand-offs
- Standards for releasing and sequencing work in the area
- Flow using standard processes.

The muda, or waste, revealed and eliminated through office lean initiatives may include:
- Over-production (starting a task without complete requirements, for example)
- Inventory (unnecessary emails and paperwork)
- Waiting
- Non-value-added processing (such as re-entering data between incompatible systems)
- Defects/rework/iterations of work
- Excess motion (walking to and from the copier or buildings, etc.)
- Transportation (sending mail between departments and other activities)
- Under-utilized people (no method to encourage or capture improvement ideas).

Figure 2.

the customer. Rick Hawley, SFT project manager, said the initial process maps created in 2004 by SFT personnel with corporate lean staffers revealed that there were opportunities, spread over many activities, to remove non-value-added (NVA) steps that slowed customer service.

"We looked at our current state map from order receipt to delivery, and suggested that we begin to group related areas or sub-processes of opportunity into improvement loops," Hawley said. "The first loop we evaluated was order acknowledgment. It involved the primary responsibilities of order entry and order management." This evaluation, started in 2004, was completed in August 2005. Now they're tackling the order scheduling loop. Additional loops identified for mapping and potential improvement ranged from the orders received loop to the customer-specified material (CSM — when a customer specifies a special fabric for furniture, for example), the special products loop (other than standard products such as over- or under-sized pieces or special configurations), the distribution planning loop, and the post-shipment loop.

One of the major changes resulting from the initial order acknowledgment loop mapping and analysis was reorganizing personnel into teams. "We had some team structure prior to VSM," Hawley said. "But what we pulled together was that order management reps and editors (order entry people), previously on separate teams, now are grouped in regional teams handling orders for particular areas of the country. Physically being located together eliminated inefficiencies — work being passed back and forth for clarification, for example. We eliminated many emails, and also actual movement of people, and related wastes."

Another key learning was to keep communications as open as possible.

The changes did not stop there. "As we continued to look at how people were working together, we decided to combine the two (order entry and management) positions into one. Now, the same person who takes orders also handles changes," Hawley said. "That has helped our dealers resolve after shipment and other issues that might occur." Approximately 140 Steelcase personnel were affected by the revamped work flow. About 400 dealers are served by the group.

Start Small, Then More Broadly Roll Out the Changes

To backtrack a bit: The SFT reorganization did not happen overnight. First, a small pilot involving six reps and order entry people working in a controlled environment simulated "how the changes will work" and related issues. "Once they proved it could work, combining the two positions, we started implementing the change across the organization, one group at a time, over a 90-day period," said Hawley. The pilot team, working with corporate lean resources, became advocates for the new ways. "They knew what worked, and they helped to sell the changes by training their peers," Hawley said.

Awareness training for reps,

training in responsibility changes, etc. continued. Debugging aimed at eliminating waste, confusion, and other potential snags also proceeded, still in a closed environment.

"Our expectation was to maintain or improve our performance. A key measurement is how quickly we acknowledge a customer's order," Hawley continued. "We met this goal before we involved customers in the changes. Going into the continuous improvement (CI) effort, we had a three-day backlog of orders-to-acknowledgment. Thanks to our reorganization, we reduced that time to one+ days." When there are special fabric orders, for example, there may be delays beyond a day.

"Among the lessons we have learned is to pilot changes before trying to implement them in day-to-day production," noted Hawley. "Prove out your thoughts. Think of CI; if it doesn't work well, it's easier to tweak the process in a pilot environment than with a large number of people. A phased effort worked well for our first and second pilots; as we implemented change, we moved from one region to another.

"We also learned with our first team that when you are consolidating steps in a process, you can build too many steps into one person. For example, at first we thought about adding logistics responsibilities to order entry and management, but that introduced a huge training challenge. The training recovery time was longer than we could support."

Another key learning was to keep communications as open as possible. "As we began and continued our lean effort, our leadership was communicating monthly and quarterly with everyone in the organization about what the pilot team was doing, including VSM efforts and other updates," Hawley recalled. "Now our lean group publishes a monthly newsletter, shar-

ing updates on new teams being created and team activities (results and benefits)."

More previously-identified CI loops are being targeted. "We also are looking at areas that support the big process and customer service that were not identified in our first VSM, for example a quality support team that deals with opportunities in post-shipment issues," Hawley said. "We may go back in six months and see how we can fine tune our initial efforts. We are encouraged that improvements are starting to take hold."

Product Data Management: Reducing Rework and Other "Interrupters"

Better customer service topped everyone's list of priorities in Steelcase's Product Data Management (PDM) area during recent reorganization efforts, and they can also report substantial success in related lean improvements. PDM employees develop marketing and manufacturing data, spec guides, and catalogs. Initial VSM activities documented "flow interrupters" or NVA steps (repeated transcription and re-entry of data, cross-checking errors, etc.) that bloated wait times between tasks. "We learned that some tasks stayed in our system for as long as nine months. We've learned how to reduce that time to about 4.5 months during the past two years," said Kim Harring, PDM team leader and senior product data analyst.

"In the past, we had stops and starts in the process. We'd lose focus when we took questions as far as we could, and then interruptions occurred," added Doug Benner, a PDM manager. "Now we have a new checklist for gathering all details we need on a project, so we don't start building until our

Bringing departments together does not guarantee the elimination of time-consuming, wasted steps ...

information is complete."

Although the "people side" of cultural change in PDM accounts for significant streamlining results, Harring and Benner noted that tools such as electronic documentation boost performance improvements. "Before, hand-scribbled notes were used," said Benner. "We created tools like a product questionnaire to help determine whether a project is validated and completed, ready for the next step. We began to use binders, and then moved to online product information, reducing rework and other downstream interrupters that had caused problems when a product goes to the build lane before it was ready. Rework has decreased an estimated 25-50 percent. We are still infants in this process of improvement. We have years and years of opportunities for CI."

Starting the Evolution: What Co-location Is All About

Increasing momentum of cultural change will enable and encourage PDM folks to take advantage of earlier training about lean concepts. Employees in this area had also been introduced to reorganization, as Chuck Walker (now manager of the

consolidated PDM organization) and others had spearheaded the integration of ten disparate departments such as the graphics team and the specs guide team.

Bringing departments together does not guarantee the elimination of time-consuming, wasted steps, however. Clumsy steps such as poor handoffs between shipping and marketing persisted, as people were working off different databases. "Walking through" a logical, step-by-step process was needed. VSM and kaizen (improvement) projects nudged the elimination of some unnecessary handoffs, and yet the realization persisted that lean efforts could be more successful.

"We began the evolution of our organization structure with co-location of personnel without redesigning our business process," Harring said. "We picked one group (the redesigned platform Pedestal Project — pedestals are the drawer units that support the work surface or desktop) as a pilot and learned more about how co-location works. People who had not worked together before learned how to work together and to make changes in a real-time setting. We expanded this effort, creating and living in a future state as it was being developed." Learning from plant engineers and others who had experience in collaborative database organization aided their progress. Manufacturing and marketing, among other areas, shared their database information, eliminating redundancies. Such collaboration enabled consolidation of more than a thousand iterations to approximately 40-50.

Building on the success of the first pilot (involving four people), they moved to a second pilot (ten people), and then expanded the co-location concepts to all projects. "At the same time we were learning how to be more effective in imple-

menting these changes," said Benner. "We used PDCA — trying and studying different things to see what worked. We learned the value of a checklist versus tribal knowledge. We developed process documentation, visible progression of work, and standards for input quality. Our value stream organization was aligned to product categories. It was a high-focus, successful project. Through monthly management meetings and also 'town hall' PDM meetings and our sensei (lean teachers) from the corporate lean team, more managers became interested and began asking how we accomplished the changes.

"Cultural change is a big effort, however, and not everyone is initially receptive," he continued. "When the company tied visual control boards and lean metrics such as cycle time, flow interrupters, and rework to the performance plan, on an individual and team level, that was a key to greater acceptance."

Speed, cost, and productivity improvement momentum is building. For example, the old 29-week price adjustment process (extended to all products) shrank to four weeks as VSM projects and related post mortems uncovered wasted steps and delays. Also, in product graphics, a problem in earlier days was that graphics lagged getting into the marketplace by six months. Customer feedback indicated that new products did not launch well unless the graphics were available. "About nine months ago, we changed our process flow and added some staff. Now our graphics are released with the product introduction. Some customers would like to see pre-release product graphics, and we are working on that," Benner said.

Added Harring, "We have almost doubled our graphics outputs during the past year. Cycle time decreased from 56 to 20 days in graphics, and productivity is up 470 percent. That's a huge benefit. We are moving to a pull system in graphics with a FIFO (first in, first out) production lane, based on hours per unit (HPUs)."

The corporate enterprise lean team has expanded to six working across the enterprise, up from the original two, based in large part on the success demonstrated in applying lean principles to the PDM process. The need for process definition and visual control continues to be critical. The basics such as documenting process steps, process mapping to reveal drifts from standard, controlled releases between work phases, and reduction in batch sizes demand attention. "We're not perfect by any means, but we follow up with performance evaluation and management attention every 90 days to six months, to make sure we are conforming to the standards we have developed and to look for new improvement opportunities," said Harring.

Learning from Experience, Customers

Harring and Benner shared key "lessons learned" about creating and continuing focus on cultural change for better customer service. "When we got started, there wasn't any office lean training beforehand. Now, we recommend VSM and lean training before implementation," Harring said. "That eliminates misunderstandings when people are on different wavelengths of knowledge about lean.

"We've also learned to communicate more effectively about acceptance. Until people have lean experience, they ask questions such as, 'What are you doing with my job?' People were scared and protective of what they do, and they associated lean with cutbacks. Sharing information and training each other reduce the reluctance to change. It's important to understand, especially in the beginning, that it is OK to fail, instead of just saying, 'This isn't going to work.' You need to get people to just try it and see where it takes us."

"The willingness to try new ways of working together eventually leads to an understanding that, if the changes fail, we learn from it," Benner said. "We still have a ways to go, however. About 50 percent of our people are still in lean training, so not everybody's there yet. Eventually, we can hand over the lean changes to our teams. They'll do kaizen projects in identified areas where we are still not getting the performance we need."

Targets include further reductions in cycle time and other improvements that can trim the budget and improve customer service. Harring noted that a grassroots effort is aimed at more efficient information sharing with upstream processes. VSM activities are expanding to focus on the entire product launch process — trying to improve the customer experience.

"We have a customer satisfaction group that is evaluating how customers can more effectively use our deliverables," Harring said. "We want to learn what the dealers' issues are, and to get our own people into the field for a better understanding of the issues such as graphics. For example, we need more information about how our designers use information to plan our products, and then in turn more about how spec guides are developed and laid out. With our marketing group, we are learning how dealers in target markets such as New York are using our tools. As much as we are going electronic, we can't get rid of print materials,

based on our meetings with dealer groups. About some of the things we offer, they have said, 'Put them in our hands more readily.' When we understand their needs, then we can fix things and make the dealers' lives a lot easier. This kind of research — staying close to our external customer — will be a continuing focus, to eliminate work-arounds and other issues for them."

Such efforts represent major cultural change. "A few years ago, people would have had a hard time understanding that lean concepts can be transferred from production to the office," Benner said. "Now we are continuing to learn about efficient process flow."

"We're not going to change the entire organization overnight," Harring said. "Toyota has been at it over 40 years. You need to have a lot of patience, because not everyone is going to adapt and get on the lean journey all at once. As other areas of company go through the lean process, it will add to our momentum."

More Lessons Learned

The lesson of patience was seconded by enterprise lean team leader David Mann. "It is important for people in office areas to learn lean concepts, and to hear examples in office terminology," he said. "Examples from manufacturing are next to worthless in the office if the people you're talking with don't have experience in manufacturing. It's a different language in the office, and that's important to recognize — and respect — when working with office people." Mann said that, just as lean principles apply equally in the shop and the office, the lean sensei needs to regularly visit office areas where lean implementation is under way — a continuing process

of developing deeper understanding of lean principles, and better eyes to see opportunity to improve.

Trying to rush the lean improvement process detracts from the focus on process, and ultimately, on producing improved results. It is something like putting an order into the system too early without concern for completeness and accuracy, in turn causing rework, delay in payment, or other problems. "Improvements in the office will be no faster than in the factory, and in some cases, you won't see results as quickly," Mann said. "Many office processes are not that discrete, and there are more shared resources — less dedicated to a single line."

Jerry Schipper added, "To be successful, you need clear ownership of the process, so that people know what they are responsible for. You also need clear, simple, appropriate metrics. There's the old saying, 'What you measure, you improve.' Establish the measurements, tweak them if they are not quite right, and religiously follow up on them. Also, training and communication are important. For an organization making a culture shift such as we are, you cannot scrimp on either one."

Gaining Traction: "A Lot of Tough Work"

The Steelcase lean enterprise efforts encompassing office as well as factory applications will continue. Asked how mature the Steelcase office lean efforts are, after a couple of years' experience, Nancy Hickey responded, "It's more about pioneering at this point. We are creating processes and formats through a lot of tough work." She offered these suggestions for others pursuing enterprise-wide lean:

- If you are coaching someone, understand how long it will take to get the improvement momentum going
- You need milestones to move people's minds to a lean way of thinking, and sometimes measurements are more difficult at various levels
- Build experience and understanding with hands-on activities
- Give people the time and resources they need for specific projects, enabling them to get traction with improvements.

"We have set a stretch goal — looking for significant cost reductions, eliminating unnecessary work and more value-added work, (a smoother order-to-cash process, for example), better productivity, and other improvements," Hickey said. "We will keep moving against these goals.

"Other achievements are not as 'hard' as cash savings yet they are important," she added. "Since we have been working on adoption of lean in administrative and office areas, people are saying that they want to learn better ways to work. That is significant when you consider that from 2001 to 2003, we had a dramatic downsizing. Some people were shell-shocked, and many people were trying to do more with fewer people. Because of the lean enterprise approach, we now have more people asking for help doing their jobs — the energy and interest are building."

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