

# Lean Enterprise Division

## August 2007 Highlights

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## Chair's Message

Dear Lean Enterprise Division members,

My first year as chair has been an exciting and fulfilling journey and I thank you for the opportunity to serve. The big accomplishment this year was becoming the first new ASQ division in many years. In addition, we pursued partnering with another established ASQ conference to co-sponsor with our Lean Enterprise Division and this has become a reality. We will be working with Education Offerings and the Six Sigma Forum to present a joint Lean Six Sigma conference in Phoenix, AZ, Feb 11-12, 2008. We continue to enjoy tremendous growth; at the end of May 2007, we became the fourth largest division/forum in ASQ, growing by more than 1,300 members so far this year. We are on a pace for more than 6,000 members by the end of the calendar year.



We did have one setback this year. Although we got approved to proceed with the marketing survey with the goal of having an ASQ certification in Lean, the marketing survey results were not favorable. Therefore it was determined by the Certification Board not to pursue an ASQ certification in Lean. We will try again at a later point, but this is not in our business plan for the upcoming year.

However, we cannot rest on the accomplishments or dwell on our setbacks of last year; we need to get back to work on the next year's activities. At our annual meeting, we decided to look at creating some subgroups to analyze three key areas to try to keep up with the growth:

1. The first subgroup is the Voice of the Customer and is designed to understand the needs of the members of the division for the various geographic areas, industries, and disciplines. This may include some of you getting calls or surveys to help us better understand your needs and how the division can add value to membership. The subchair for this group is Frank Murdock who can be reached at [fmurdock@comcast.net](mailto:fmurdock@comcast.net).
2. The second subgroup is Education/Training and is designed to understand the training needs for Lean in the marketplace and the best vehicle to provide that Lean training. The subchair for this group is Robert Damelio who can be reached at [robertdamelio@sbcglobal.net](mailto:robertdamelio@sbcglobal.net).
3. The third subgroup is Body of Knowledge and is designed to capture the body of knowledge in the field of lean to fully understand what is in and what is out of the scope of the BOK for the Lean Enterprise Division. The subchair for this group is George Alukal who can be reached at [galukal@cmcusa.org](mailto:galukal@cmcusa.org).

We can use your help and ideas for each of these subgroups, so please contact the subgroup chair if you are interested. In addition, we are also working on some other things that provide value for your continued membership:

1. We have a call for papers that was sent to each of your e-mail accounts for both the Lean Six Sigma Conference in Phoenix and the World Conference for Quality and Improvement in Houston, TX, in May 2008. We will review these papers and submit them to ASQ on behalf of the division.
2. We will look to provide support to sections interested in developing Lean networking groups. To do this we are interested in any insights from sections



Lean Enterprise  
Division

## Publishing with ASQ is easier than you think.

You don't have to write a 10,000-word article filled with data or divulge the proprietary secrets of your organization to get published by ASQ.

In fact, you may not have to write anything new at all.

ASQ is looking for original stories, checklists, "cheat sheets," training materials—anything that will engage people who are new to the world of quality and help them get started.

Throughout the daily course of conducting your work, you may have authored more materials than you realize. Now it's just a matter of finding the right venue and an editor. ASQ can help!

### Three Easy Steps to Publishing With ASQ

1. Look around your work environment—10 minutes.

Look for anything you or your organization has created that could help someone who is just getting started with quality.

What to look for:

- Training documents
- Cheat sheets and reminders
- Checklists
- "Top 10 tips" collections
- PowerPoint presentations
- Project charters
- Team charters
- Templates and forms
- How-to guides

Where to look:

- The top of your desk—what do you keep handy?
- The walls of your office or cubicle
- Hallway walls and bulletin boards
- Shopfloors and breakrooms
- Your computer desktop
- Your organization's intranet

2. Send what you find to ASQ's Web editor—5 minutes.

E-mail a copy of your materials to ASQ's Web editor, Leon Lynn, at [llynn@asq.org](mailto:llynn@asq.org). Or fax or mail your submission to him at:

American Society for Quality  
PO Box 3005  
Milwaukee, WI 53201-3005

Fax: 414-298-2504 *cont. on p. 3*

### *Chair's Message cont. from p. 1*

that already have this type of interest group, and any sections that may be interested in starting a group, and in how we can help.

3. We are still adding to the Web site ([www.asq.org/le](http://www.asq.org/le)) to make it the portal for information about Lean. We could use your knowledge (white papers) and case studies about your journey in implementing Lean. Go to the Web site and click on Submit an Article (<http://www.asq.org/le/articles/index.html>) to share your knowledge and how to succeed on the Lean journey.
4. We have a very active discussion board where you can present a topic you want discussed, or lend your expertise or insight to other members. I have taken the three topics discussed at the LED networking session at the last World Conference and posted them to the discussion board to get the networking going.

Thank you for the opportunity to serve you for another year as the chair of this dynamic and growing division. We still could use help with Web site development and building up our library; if that is something that interests you and you want to help, let me know. Feel free to contact me if you can help in any way or if you have any questions.

### *Jobby Johnson*

MBA, CSSBB, CMQ/OE, PMP  
Chair, Lean Enterprise Division

## Lean Enterprise Division Networking Session

At the 2007 World Conference for Quality and Improvement on Wednesday, May 2, the Lean Enterprise Division held a quality café networking session and discussed three topics. Each topic was discussed for 15 minutes and then participants moved to another table with a different topic, so they got to network with more people and cover each of the three topics. We had selected table hosts to remain at the tables to record notes and recap the discussion for new people coming to the table. This article reports the highlights of the discussion at each table regarding these topics.

**Topic One—Value Stream Mapping:** The topic discussed was lessons learned and best practices of how to keep value stream mapping from a silo mentality and how to keep it system focused, avoiding suboptimizing to the detriment of the whole system.

Here are the highlights of the discussion:

1. Need to understand the transactional processes as well as production.
2. Need to understand the internal and external constraints on the value stream (FDA, OSHA, HIPPA, procedures, accounting requirements, etc).
3. Appoint a value stream manager who can see the whole picture.
4. Create the 30,000-foot map first to see the whole value stream.
5. Set ground rules for the team to make sure they stay system focused.
6. Make sure you get the right people involved to cover interests of each area.
7. Bring in an outsider to ask the questions you might not see being so close to the process.
8. Keep it visual and posted so people see how the future state will affect them.
9. Have the right detail on the map—too much and you lose the big picture, too little and you cannot see all the connections.
10. Get to know the people on the team so you can work better together to eliminate some of the personalities associated with the silo approach.

**Topic Two—Value Added vs. Cost Savings:** Lean's purpose is to add value to the process and customer, but some companies have used it as cost savings to the detriment of the customer. Discuss keeping value added to the customer as the focus.

*cont. on p. 3*

## Lean Enterprise Division Networking Session cont. from p. 2

Here are the highlights of this discussion:

1. Need to balance cost, speed, and zero waste with customer in mind.
2. Black Belt stated if we only had done Lean first.
3. Cost is easier to define but value added is defined differently, so you must properly define value added to the customer.
4. Management is key to being open with what is needed with value added activities.
5. Keep momentum and stay on a high level so you don't get stuck in analysis paralysis.
6. Ensure you engage all customer groups in the value added analysis.
7. Engage suppliers in the value added analysis.

**Topic Three—Organization Change:** Discuss how you have or would get the organization's culture to change and have everyone looking at making the organization Lean.

Here are the highlights of the discussion:

1. Change terms, so people do not think lean means job cuts, and disassociate anticipated change with potential job reductions.
2. Start with small, incremental changes to get early victories so that people can see the benefits.
3. Show support with actions not just words; to change the culture, management has to model, and reinforce, proper "new culture" behavior.
4. Appeal to their egos or the WIIFM (What's In It For Me) principle.
5. Phrase everything you're doing in business terms the members of the culture will be comfortable with. New, and unfamiliar, terminology can make the members of the culture more resistant to change.
6. Empower employees to get involved in the change design and the change process.
7. Provide effective education and training about the Lean organizational change.
8. Define the correct present and future states to build trust; don't want them to view this as an academic exercise or pie in the sky.
9. Provide incentives to get involved.
10. To change the culture, first change the structure of the work.
11. Explain to the members of the culture why the culture needs to change.
12. Make the "Horse Thirsty." Identify "pain points" that the members of the culture would like changed so they will desire change.
13. There are five (5) basic elements to culture change:
  - a) **Vision**—you need one
  - b) **Resources**—are needed to support changes
  - c) **Skills**—are needed to avoid frustration
  - d) **Incentives**—to encourage change
  - e) **A Plan**—is needed to provide direction
14. If your organization has ISO audits, once the culture is changed, schedule reviews of the culture status in conjunction with your ISO review audits.
15. Management has to listen to the voice of the workers.
16. Don't attempt to "bully" or frighten people into changing.
17. Leadership must be truly committed to, and directly involved with, the change.
18. To reduce cynicism in the work force, involve the workgroup "natural leaders" in the change process. Their buy-in will help encourage buy-in from their co-workers. Develop champions at the front lines.
19. Track results by the outcome measures of the change, not the implementation processes. For example, in training you should track the amount learned or the change in behavior after training, and not just the number of people trained.

For each of these three topics, the notes were posted to the discussion board for continued virtual networking on these issues. Please post to the discussion board your insights and ideas on these topics.

## Publishing with ASQ is easier than you think. (cont.)

3. Review our edits—Your work is done! ASQ's professional editors will:
  - Make sure that you and your organization have the necessary legal permission to publish your submission.
  - Identify the best print or Web publication venue.
  - Help with editing, formatting, and layout.
  - Share progress with you. We won't publish anything until you sign off on it.

### Why Publish With ASQ?

When you publish with ASQ, you gain:

- Recognition for yourself and your organization
- Points toward continuing education or recertification
- Peer review and professional editing of your work
- Recognition that you are helping to advance the practice of quality while increasing the amount of content available for members of your division

For more information on publishing opportunities with ASQ, call Body of Knowledge administrator Noel Wilson at 414-298-8789 ext. 7304, or 800-248-1946.

### You Do Want To Write Something New?

Think about when you first got started in quality. What would have helped you make progress faster? Think about your first improvement project. What went right? What went wrong? What would you have done differently?

Here's your chance to help the next generation of new practitioners. Write up your lessons learned in a one-page article.

Call us at 800-248-1946 to brainstorm your ideas. Ask for Leon Lynn, Web Editor, or Noel Wilson, Body of Knowledge administrator.

# Tapping Hidden Cash in Process Industries

David Rucker

Many discrete manufacturers have successfully transitioned from a reliance on forecasting to make-to-order scheduling systems, holding little to no finished goods. Resources are only consumed when a customer order is placed, which is inherently a leaner system. Notable examples are Dell and Toyota; however, can a process plant expect to ever achieve the same feat? Process plants are faced with longer setups, start-up losses, and resource/skill shortages to accomplish product changeovers. There is a belief that long production runs are more desirable. During these long runs set points can be tuned in, manpower moved elsewhere, and in general, efficiency is up.

However, this comes at a cost of large piles of raw and finished goods inventories. The Bureau of Economic Analysis *Survey of Current Business*<sup>1</sup> reports process industry companies eked out *less than 1* inventory turn in 2006! The associated warehousing and logistics expenses can add as much as 30% to cost of goods sold. With each missed forecast comes a surplus of material or potentially a customer shortage. Perhaps more damaging from a strategic point of view, bloated inventories insulate a plant from shifts in consumption and slow reaction time to field quality issues. In many ways, inventory puts operations in an arms-length relationship with customers, which is never desirable. A reliance on long product runs can mask the issues that prevent efficiency with flexibility, rather than addressing them.

Process plants can break out of the reliance of run to forecast using Lean manufacturing principles. These firms use a powerful combination of Lean principles to become flexible and efficient. While zero finished goods inventory might not be on the horizon just yet, inventories are notably down, order fill rate is up, and overall product costs are lowered. When asked by *Industry Week* how Lean applied to process industry versus discrete manufacturing, Jim Womack (author of *Lean Thinking*) stated: "The key thought process needed in any batch industry is 'every item every interval' where the objective is to make the interval smaller and smaller." This article describes how to use Lean techniques to create a more flexible, efficient process plant to tap into the hidden cash reserves of excess inventory<sup>2</sup>. This method has worked successfully for several process plants in a variety of industries.

**Step One:** Group all products into process families based on processing similarities, while also keeping equipment capabilities in mind.

**Step Two:** Assign each process family to the existing equipment while considering both capability and overall utilization. This provides a starting point for production planning and a definition of what normal should look like. Keep in mind that this is not a hard and fast dedication of equipment but more so a selection of primary home. We can usually identify the extreme scenarios that will force us to break product family alignment, but it is important to fit within a defined game plan each week. Our experience has been that this can be achieved for at least 75% of the scheduling intervals.

**Step Three:** From this point on, focus individually on a set of equipment and its assigned product families. In this step we will analyze the customer ordering patterns to select likely candidates for transitioning to make-to-order. Chart each individual SKU's order volatility versus the quantity (see chart below). To build the chart, use six to 12 months' history of actual shipments (weekly sales) to calculate the average order size and plot on the volume axis. The volatility (order variability) is computed as the standard deviation divided by the average. The resulting value is called *coefficient of variation*, which normalizes the standard deviation relative to volume so you can compare volatility of high and low running SKUs equally. This method of graphing order volatility versus quantity is called *demand segmentation*.

This plot will spark a discussion of:

- Is this a high-volume or low-volume product?
- Is it ordered consistently every week or infrequently at random intervals?
- Is the order based purely on actual customer consumption or is it modified because of sales incentives, initial "filling a pipeline," or other factors?

*cont. on p. 5*

## From the Lean Enterprise Discussion Board

Would you like to learn the opinions of other Lean Enterprise Division members on the pros and cons of Lean and Six Sigma methodologies and how they work (or don't work) toward overall quality improvement? If you would, we have a discussion to engage you.

Would you like to share a great story or article? The Lean Enterprise Discussion Board is the place.

Do you have a problem that might be resolved with some input from your fellow Lean Enterprise members? Post your question on the Lean Enterprise Discussion Board.

The following are some topics posted on the discussion board during the last few months:

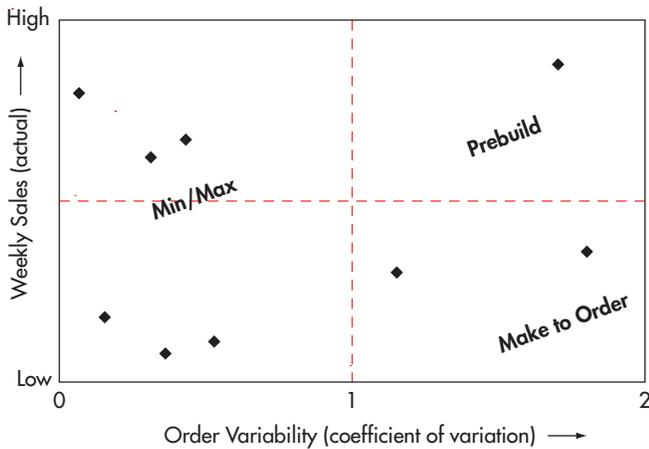
- Lean in New Process/Product Development
- Lean Warehousing Free Webinar
- The Beer Game
- Lean Visioning Trip
- Lean Customer Service

To contribute to the discussions above, or to start your own discussion, you can enter the discussion board through your "My ASQ" page on [www.asq.org](http://www.asq.org) or by going directly to the Lean Enterprise Web site [www.asq.org/le](http://www.asq.org/le) and clicking on Discussion Board along the left column.

Either path requires that you logon using your ASQ membership number. The discussion board is open to all ASQ members. If you don't know your password, there is a help link or you may call ASQ at 800-248-1946 for help.

Please Note: If you click the Remember Me box before logging on, you won't have to sign on each time.

Have Fun!



Not all SKUs fall in the same ordering pattern and as such might require different strategies for reducing inventory. In our experience, we rarely implement the exact same scheduling rules for all SKUs in a family. For example the high-volume / low-variety SKUs need to be run most frequently to keep inventories low. This is best handled by defining finished goods inventory min/max levels and running to replenishment based on actual consumption. This is in effect converting from push to pull production, greatly reducing usage of the forecast. Similarly, strategies are developed for each quadrant to minimize inventory and improve customer service.

Step Four: Create a *Fixed Scheduling Wheel*, to sequentially evaluate each SKU for inclusion in the current schedule. To create the wheel, check with setup specialists and determine the preferred SKU sequence from their perspective. It is important to note that not every SKU will be run each week, only those meeting a trigger point such as minimum level of a Min/Max. Standardizing the SKU run sequence and sticking to it is in itself a form of changeover time reduction, and can be a real morale booster. You can also leverage this fixed run sequence to more efficiently stage, order, and deliver raw materials as well.

Step Five: Examine the equipment and apply SMED (single minute exchange of dies) techniques, as developed by Shigeo Shingo<sup>3</sup>, to make the setups easier, faster, and more consistent, with less yield loss. When we start this activity we find many process industry plants prefer to perform setups on the “daylight shift,” meaning Monday – Friday daytime. This is usually when the most support staff is in the plant and many highly skilled technicians tend to work this shift. Potentially this is covering up weaknesses that should be uncovered and addressed to build a stronger plant. Ask yourself the following questions: Why are the most highly skilled technicians needed to perform the setup instead of the equipment operators? Why is so much emphasis placed on troubleshooting, instead of having a controlled process? The issues can be addressed by creating a much simpler and standardized setup procedure, emphasizing visual cues and elimination of variation in the equipment, material, or people. We recommend training all operators in the new setup procedures so changeovers can be performed day or night, whenever the schedule dictates. Everyone wins—the operator’s skill is upgraded, the plant achieves efficient flexibility, and the scheduler can run exactly what is needed and no more.

Finally, it is time to put it all together. Shorter setup times, consistent scheduling rules based on actual customer orders, key

assets dedicated to specific product families to key assets, and a fixed sequence of evaluating which parts to run. Inventory levels will begin to shrink as you minimize use of the forecast. Service levels improve because of increased flexibility and adherence to a disciplined process. Typically we see a 50% reduction in finished goods inventory and a rise in order fill rate.

It is called a Lean journey because there is no best performance, only the pursuit of better. So after the kinks are worked out and the organization assimilates this level of change, run through the inventory reduction steps again. Cut the new setup times in half. Change the scheduling wheel from weekly to twice weekly. And save another 50% of inventory costs.

1. Bureau of Economic Analysis’ *Survey of Current Business*, <http://www.bea.gov/>.
2. *Industry Week* Webcast, May 4, 2005, *Lean Manufacturing Visionary Jim Womack on Frontiers of Lean Thinking*. <http://www.industryweek.com/webcasts>
3. *A Revolution in Manufacturing: The SMED System*, by Shigeo Shingo, Productivity Press, 1985, ISBN 0-915299-03-8.

### About the Author

**David Rucker** is president of Rucker & Associates, a consultancy applying Lean and Six Sigma improvement principles. As divisional continuous improvement manager for General Electric, Rucker was trained in Lean by Shingijutsu—the original students of Taiichi Ohno. He is a certified Six Sigma Black Belt and a member of ASQ. Since 1993, he has provided Lean training and consulting to more than 6,000 people at 200 companies in 15 countries.

### Inventory Reduction Steps...

1. Group products into process families.
2. Assign product families to equipment.
3. Analyze ordering patterns to determine min/max inventory level and run trigger.
4. Create optimal run sequence, based on setup efficiency.
5. Reduce setup time by 50% to 75%.

**Be sure to mark your calendar now to attend the Six Sigma Conference: Sustainable Growth Through Lean Six Sigma**

**Co-sponsored by the ASQ Lean Enterprise Division**

**February 11–12, 2008 • Phoenix, AZ**

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## Note From the Editor

Taking into account the summer months, you will find that this issue is a bit shorter than the previous ones. But, although it is shorter, it still has a lot of great information.

We are growing as a division at a good pace. The part that excites me the most about this growth is having more minds coming together to keep this division moving in the right direction.

I wish you all a happy and safe summer!

Best regards,

Wendy Gomez

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