

Quality & Productivity Solutions, Inc.

Experts in Lean Six Sigma, Management Systems, Supply Chain,
Project Management & Professional Development

Quarterly Newsletter – July 2010

Inside this Newsletter

Cover Stories

**Going Global & Going Local -
QPS is a newly approved Training
Provider in IL & NC in addition to
RI, CT & MA!
Front Page*

**QPS Now Accredited by
Better Business Bureau
Front Page*

Spotlight Feature

*QPS opens World Class
Corporate Training Center -
QPS Institute
Page 2*

Events

*Join us in celebrating the
Quality & Productivity Institute!
Page 2*

Professional Development

*Seminars + Workshops
Page 3*

Training & Certifications

*Most Popular Programs with
Multiple Certificates
Page 4*

Feature Article

*Why a Six Sigma-Lean Business
Strategy? By Jack Reardon
Pages 5-10*

Training Locations

Page 10



Jay P. Patel, QPS President & CEO

Going Global & Going Local...Again! QPS's Expansion Project Successfully Continues!

By Rita M. D. Lancellotta, B.S., B.A.
Director of Marketing

Since the April 2010 Quarterly Newsletter, QPS has decided to continue its local expansion project to obtain Training Provider approval and make out of state training available to out of state clientele...and has met with great success!

For years, QPS has provided corporate training all over the globe in addition to public training for unemployed personnel in the state of Massachusetts, where QPS is headquartered. Earlier this year, QPS became an approved Training Provider in the states of Rhode Island and Connecticut, providing public training for unemployed personnel through the NetworkRI and CTWorks, the states' local One-Stop Career Center systems. Now QPS is on the rise again, this time gaining state approval as a Training Provider in North Carolina and Illinois, with the capability to work with IL Worknet and NC Joblink, their One Stop Career Center systems.

In addition to training being conducted in Massachusetts at its Corporate Training Center in Marlborough, as well as new locations in Warwick, Rhode Island near T.F. Green Airport and in East Berlin, Connecticut near Hartford--training will now be conducted in Chicago, Illinois and in Charlotte, North Carolina as well.

By being an approved training provider in five states now, QPS can give the unemployed an opportunity to obtain funding from state and federal entities to pay for Lean, Six Sigma, Project Management, and other well-known programs and courses. Candidates that are interested can easily call their local career center and make an appointment with their career counselor to start the application process. Career centers are scattered generously throughout each state. A significant amount of information regarding state and federal funding for education is available online.

ASQ - NEQC

QPS is a Gold Sponsor and an active supporter of American Society of Quality's (ASQ's) North East Quality Council (NEQC). Jay P. Patel, QPS President & CEO, is the NEQC Chairman and other QPS staff are involved supporters.



Did You Know...

QPS is newly accredited by the Better Business Bureau with an A+ rating, and is now listed in its Accredited Business Directory. The BBB's directory is a trusted source of business listings that have met BBB's professional standard, and a well known resource for consumers who want to confidently select a professional company with which to do business.

QPS opens QPS Institute

Quality & Productivity Solutions opened *QPS Institute*, a world class corporate training center outside of Boston this June. "This is a dream come true," were the very first words spoken by Jay P. Patel, President & CEO, when asked in a brief interview about the newly opened world class corporate training center. "QPS has been growing and I am so pleased to offer training world class style in such a beautiful environment." The announcement came because for years QPS always conducted its training at the Royal Plaza Hotel.



The *QPS Institute* contains three large rooms, two of which have several lightweight and modern tables and chairs that can be arranged in conference lecture style or u-shape layout and the other room located adjacent to the entrance and ideal for meetings and small corporate gatherings, has a beautiful, largely extended mahogany table with chairs arranged in formal boardroom style seating. All windows contain a scenic view of nature's beautiful green trees.



During a tour of the *QPS Institute*, Mr. Patel acknowledged how extremely impressed he is. There is state of the art technology, and the décor is a mix of sheik and simple, contemporary yet also classic, with a touch of Indo-style flare. Granite floor tiles, predominately black granite with gold stardust and known throughout the world as "Black Galaxy," are at the entrance. Their beauty is among the first things noticed when walking in.



Join us! QPS wishes to extend an invitation to all as they celebrate an Open House at the newly opened *QPS Institute*
225 Cedar Hill
Marlborough, MA 01572
Thursday, July 22, 2010 from 4pm to 6pm, and r.s.v.p.'s to info@qpsinc.com are most appreciated.

LEAN SIX SIGMA

Lean Six Sigma Management Overview August 2

Champion Training August 2-5

Design For Six Sigma Overview September 13-14, December 6-10

Design For Six Sigma (DFSS) Certification (Transactional or Product) September 13-17, December 6-10

Master Black Belt Certification – CAN BE STARTED ANYTIME

How to Implement Lean July 26-27, September 27-28

Value Stream Mapping July 27

How to Conduct Kaizen Workshop July 27-28

Lean Expert Certification July 26-August 13

5 S and Visual Controls August 10

Standardized Work – CALL FOR SCHEDULE

Set Up Reduction/JIT August 11

PROJECT MANAGEMENT

PMI Project Management Professional Certification (PMP Prep) July 19 – August 6, August 9–27, September 13-20

Fast Track PMP Certification Preparation – CALL FOR SCHEDULE

PMI Risk Management Professional (RMP) Certification Preparation – CALL FOR SCHEDULE

PMI Program Management Professional (PgMP) Preparation – CALL FOR SCHEDULE

PMI Scheduling Professional Preparation – CALL FOR SCHEDULE

QUALITY SYSTEMS

Auditing to ISO 9001:2008 (Includes Process Auditing) July 6-7, September 20-21, November 8-9

Process Mapping & Process Management July 8, September 22, November 10

APQP/Control Plan Certification July 9, September 23, November 11

Auditing to ISO/TS 16949 (Includes Process Auditing) July 22-23, September 22-23 November 11-12

FMEA and Gauge R & R August 5, October 7

Understanding and Implementation - TL 9000 August 23-24

Auditing to AS 9100 (Includes Process Auditing) August 25-26

Process Validation June 24, September 23

ISO 14001

Implementation and Auditing - ISO 14001 July 19-20, September 23-24, December 6-7

ASQ Certification Refresher Courses* (any one certification) TBA

FDA RELATED

Auditing to ISO 13485 (Includes Process Auditing) September 21-22 or November 9-10

Risk Management/Analysis For Medical Devices/Pharma June 23 or September 22

Medical Devices Regulations/QSR June 21-22, September 20-21

STATISTICS & SERVICE

Basic Statistics Using Excel (Software Provided) August 4-5, October 6-7

Intermediate Statistics Using Minitab August 30-September 2, October 25-27

Statistical Process Control September 13

Design of Experiments Using Minitab July 13-15, September 7-9, December 6-8

Lean Six Sigma Implementation For Service Organizations June 21-22, September 27-28

Improving Customer Satisfaction June 23, September 29

Implementing ISO 9001 For Service Industry June 24-25, September 23-24, December 13-14

Facilitating Groups/Team Management July 16, September 7, December 6

Team Management July 15, September 8, December 7

Leadership and Change Management September 9, December 8

SUPPLY CHAIN

Lean Supply Chain October 14

Certified Supplier Auditor CALL FOR SCHEDULE

Outsourcing Management CALL FOR SCHEDULE

SOFTWARE

Deploying ISO 9001 For Software Organizations CALL FOR SCHEDULE

Software Verification and Validation CALL FOR SCHEDULE

Documenting and Implementing ISO 27001 CALL FOR SCHEDULE

MOST POPULAR PROGRAMS WITH MULTIPLE CERTIFICATIONS!

WIA Approved

Master Expert Certification. (Lean Six Sigma Green Belt Certification, Six Sigma Black Belt Certification Training, Lean Experts Certification, Auditing to ISO or CQE Certification Prep, Project Management PMP Certification Prep or APICS Supply Chain Professional CSCP Certification Prep). July 6-Sep 24, July 26-Oct 15, Aug 9- Oct 29, Sep 7- Nov 19, Sep 27-Dec 17, Oct 12-Dec 30

WIA Approved

Lean Six Sigma Black Belt Certification Training Plan. (Lean Six Sigma Green Belt Certification, Six Sigma Black Belt Certification, Lean Experts Certification.) July 6-Aug 27, July 26-Sep 24, Aug 2- Sep 30, Sep 27-Nov 18, Oct 12- Dec 3, Nov 3- Dec 30, Nov 29-Jan 28

WIA Approved

Management Certification. (Lean Six Sigma Green Belt Certification, Project Management Certification Preparation.) July 6-Aug 13, July 26-Sep 10, Aug 9-Sep 10, Sep 27-Oct 28, Oct 12- Nov 12, Nov 2-Dec 3, Nov 29-Dec 30

WIA Approved

Management Certification for Manufacturing Professionals. (Lean Six Sigma Green Belt, Lean Expert Certification, Supply Chain Certificate or CQE/CQA Training, Certified ISO 9001 Implementation and Auditing Training) July 6-Aug 13, July 26-Sep 10, Aug 9-Sep 10, Sep 27-Oct 28, Oct 12- Nov 12, Nov 2-Dec 3, Nov 29-Dec 30

WIA Approved

Six Sigma Green Belt Certification & PMP Certification Prep. (Six Sigma Green Belt & Project Management Professional Training Certificate). Aug 2 – Aug 27, Aug 30 – Sept 28, Oct 4 – Oct 29, Nov 8 – Dec 1, Dec 6 – Dec 29

WIA Approved

BIO Medical Certification. (Lean Six Sigma Green Belt Certification, BIO Medical Auditor Prepared for CQA and ISO 13485, and CQE Prep.) July 6-Aug 20, Aug 30-Oct 15, Sep 27-Nov 12, Nov 2-Dec 17, Nov 29-Jan 14

WIA Approved

Lean Expert Certification. (Lean Expert Certification and Lean Six Sigma Green Belt Certification) July 6- July 23, July 26- Aug 13, Aug 30-Sep 17, Sep 27-Oct 15, Nov 2-Nov 19, Nov 29-Dec 17

WIA Approved

Six Sigma Black Belt Certification (Six Sigma Black Belt Certification and Lean Six Sigma Green Belt Certification) July 6-Aug 27, July 26-Sep 24, Aug 2- Sep 30, Sep 27-Nov 18, Oct 12- Dec 3, Nov 3- Dec 30, Nov 29-Jan 28

WIA Approved

Certified Quality Engineer or CSQE or CRE, Auditor and Manager (any 3 ASQ Certifications). July 6-Aug 6, Aug 30-Oct 1, Sep 27-Oct 29, Nov 1-Dec 3, Nov 29- Dec 30

CERTIFICATION PROGRAMS

WIA Approved

Project Management (PMP) Certification Prep Training. July 6 – July 21, Aug 9-Aug 27, Sep 13-Sep 30, Oct 12-Oct 29, Nov 15-Dec 2, Dec 13-Dec 30

WIA Approved

Certified Production Operator and Technician. July 6-Aug 6, Aug 30-Oct 1, Sep 27-Oct 29, Nov 1-Dec 3, Nov 29- Dec 30

WIA Approved

Inspector and Technician Certification. July 6-Aug 6, Aug 30-Oct 1, Sep 27-Oct 29, Nov 1-Dec 3, Nov 29- Dec 30

WIA Approved

Sales & Customer Service Analyst. July 6-Aug 6, Aug 30-Oct 1, Sep 27-Oct 29, Nov 1-Dec 3, Nov 29- Dec 30

WIA Approved in the States of MA, RI, CT, IL and NC!

Check out our website <http://www.qpsinc.com/Training/UnEmployed.aspx> for additional courses approved in your state!

Why a Six Sigma-Lean Business Strategy?

by Jack Reardon

Six Sigma & Lean are called business strategies for a reason; they are strategies that the management of large and small companies must implement if they want to be around in ten years. These are not just quality programs that some quality guru dreamed up, these are legitimate business strategies that are focused on reducing cost, waste and defects.

Six Sigma Improvement Table

Sigma	PPM	Defect Reduction
2	308,537	
3	66,807	78.35%
4	6,210	90.70%
5	233	96.25%
6	3.4	98.54%

This table tells the story of Six Sigma improvements. This is no small task: to go from 2 Sigma to 3 Sigma is a 78.35% improvement! Most manufacturing company's are about 3-4 Sigma, and to improve from 4 to 5 is a 96.25% improvement. To move from a 3 to 6 Sigma is 99.99% improvement, or almost a 100% improvement in your business. Given this task, how would you go about creating this kind of improvement?

Not a simple task! The only way to get this kind of improvement is to improve everything in the business. This is why you need to have both Lean and Six Sigma; together, they improve all aspects of the business, from order entry to shipping. To implement both strategies you need to train all employees in every area. And because this is not a very easy thing to do, you need specially trained Black Belts, Green Belts and Lean Experts. These people are trained in the more than 150+ tools needed to drive improvement. This also allows you to have Lean projects and Six Sigma projects working simultaneously.

Strategies for Improvement

Lean is a strategy to improve cycle times, eliminate waste and reduce inventories, whereas Six Sigma is a strategy to reduce variation in the process. To create improvement, you need both strategies. You need the techniques of both strategies in many areas to drive the improvement strategy. What is the benefit of eliminating defects and then have production waiting for orders to be processed? If we reduce the cycle times and eliminate waste in the process, but have too many defects, scrap and rework, we have not made any progress. Both strategies work together to improve the overall process.

Just think of the payback on a nearly 100% improvement! In many cases this kind of improvement would eliminate the need for a second shift, because the first shift is so efficient that they can produce the same amount of product as the two shifts combined. Include both strategies and you have:

- Efficient and productive time spent on producing only what the customer wants, when they want it!

- No defects or returns to deal with, no excess inventory to count, no scrap to handle, store and dispose of, no rework to handle, repair, re-inspect and re-handle.
- Set ups and changeovers that occur in minutes instead of hours.
- Orders processed without errors; orders filled and completed without errors.
- Employees involved in making the process and the company better and more profitable.

Now you can focus on revenue and not have to worry about the end of the quarter rush, driving up cost with overtime and increased mistakes and customer complaints. All orders are processed error free, no matter when they are received. With a 100% improvement, you can be very competitive in your pricing, lead times and take advantage of your improved process.

As Plant Manager, I had extremely good lead times in comparison with our competition. I could sell at a higher price for those who wanted the product this week. Since our competition had 8-12 week lead times, I could steal every customer who was desperate for the product. The quality was also better, which was a bonus to our customers; they came back even when they had the time to wait.

Part of the reason we could do this was because we had taken our changeover time from 4 hours to 4 minutes, eliminating the second shift and increasing productivity. This is a Lean strategy to reduce set up and changeovers to a minutes or less. In addition, we implemented a strategy so that the next order was ready and waiting for the operator to finish. Old die out, new die in, material ready to load and off we go! Many companies look at set up and changeover reduction as a way to save time and money, however this is only part of the Lean strategy. Another part of Lean strategy is to use the 5S plan to clean up and organize the floor, to standardize tooling, and to eliminate inventory waiting to be processed. There are about 100 Lean tools that you can implement to help improve efficiency and productivity. Six Sigma has another 60 tools to focus on defects and variation.

Why so many tools? Because as you improve, it becomes harder and harder to identify root causes and develop permanent solutions. At 5 Sigma you have 233 defects per million opportunities, not a lot of information to play with and solve problems. As you can see from the table, the defects get smaller and smaller as you increase the Sigma level. The 233 defects could be spread out over a long period of time and may be from 200 different reasons or causes. It may take a year or two to understand and figure out some of the causes of these defects, and you may not get any better without changing the design or the process. There are many processes out there that will never get better than 3 Sigma; these processes are not robust enough to improve beyond that point.

There are product designs that are not robust enough to allow the process to improve. This is why we have so many tools to help us make these determinations and drive improvement back into product and process design. If you have a 6 Sigma process and put a product design that is not designed to be manufactured at this level, you drag down the process performance to the design level. The same is true for a 6 Sigma product manufactured on a 3 Sigma process.

Six Sigma Conversion Table

Sigma	DPMO		Sigma	DPMO
1.5	500,000	continued	3.8	10,720
1.6	460,200		3.9	8,198
1.7	420,700		4	6,210
1.8	382,100		4.1	4,661
1.9	344,600		4.2	3,467
2	308,500		4.3	2,555
2.1	274,300		4.4	1,866
2.2	242,000		4.5	1,350
2.3	211,900		4.6	968
2.4	184,100		4.7	687
2.5	158,700		4.8	484
2.6	135,700		4.9	337
2.7	115,100		5	233
2.8	96,800		5.1	159
2.9	80,760		5.2	108
3	66,810		5.3	72
3.1	54,800		5.4	48
3.2	44,570		5.5	32
3.3	35,930		5.6	21.0
3.4	28,720		5.7	13.4
3.5	22,750		5.8	8.6
3.6	17,860		5.9	5.4
3.7	13,900		6	3.4

Most companies today run between 3 and 4 Sigma levels; this creates defects and adds cost to the process. Also operating without Lean, they are wasting time and resources chasing problems, fighting fires and creating excess inventory. We all know about fighting fires and never having enough time to actually fix the root causes of the problems. Using Six Sigma and Lean tools, you can reduce the defects, inventory, and improve cycle times; this frees up your time to investigate and resolve issues. As you can see at 3 Sigma, you could potentially have 66,810 defects per million opportunities; this creates a lot of scrap and rework. A good visual clue to defects is the size of your MRB.

- How much inventory is tied up waiting disposition?
- How much inventory is tied up going back to suppliers?
- How much inventory is on the floor waiting?
- How many inventory turns do you have?

A well run Lean Six Sigma company achieves about 30 turns a year.

One of the most important tools you can use to decrease defects is Statistical Process Control (SPC) on the critical characteristics that the customer has identified or that show up in the complaints and returns. Most companies have SPC only because the customer requires some kind of statistical report. But done properly, you can use SPC to control and eliminate defects. This can be as simple as a paper run chart or x-bar and range chart that has simple control limits, until you get some real data or use as a pre-control chart. The objective is to control the

process adjustments and not change anything unless you have points outside the control limits. Many defects come from operators chasing the normal process variation and never catching up. You need controls on the process, and you need to stop or change the process before you create defects. One of the biggest problems we see is the containment of potential defects and escapes from the process.

Escapes from the process come from finding a defect, and then not containing the just produced parts that include that defect. For example, I had a process that measured 5 parts out of every 60 parts. On the 60th part, we discovered a defect. This means we could have defects in the last batch of 60. However, when we tried to retrieve those 59 parts, we couldn't find them. They had already moved to the next process, and were mixed in with all the other parts. We were always in such a hurry to meet the schedule that we couldn't wait to finish the batch. So, we moved a partial batch to keep the next process running. If there were defects in that batch, they now became escapes and possibly customer complaints or returns. To fix this we had to go to a smaller sample and tight controls on the process, which solved our containment problem - the root cause for the escapes was our poor containment.

Six Sigma focuses on reducing process variation, process by process. This means that you put all processes under control and insist on containment of all parts until the last part is checked; then you release to the next process. As benefit of process control, we were also able to understand and control insert wear by the different types of inserts, and that helped control the cost of inserts. Now we could predict insert wear and determine our costs; predict usage of inserts and develop a pretty accurate budget. We also could predict our scheduling better, because we had the process under control and operating at or above a Cpk of 2.0, meaning zero defects produced. Defects cause delays, slow down the process, and add another variable to the cycle time. Once we had SPC charts on all the machines and parts, we could determine Cpk by machine, operator, shift and part. We also determined that some parts run better on specific machines, and we attempted to schedule the right parts into the best machines.

Also by changing the sample size we were able to control and contain any defects that did occur, and immediately capture and contain those defects. By designing racks to hold just the right amount of parts, it facilitated moving the parts and keeping the next line fed with parts. And, with less defects and inventory, our schedule was much more efficient. Escapes from the process disappeared, and we went for several months without any customer complaints or returns. The bottom line is that by controlling the process and containing all suspect parts, training the operators on SPC, data collection and containment, we reduced scrap by 60% and eliminated complaints and returns. The investment was very small, mostly our time. What we created is an efficient, Lean and Six Sigma process.

Any company can do this, no matter what they produce. In the service world, most companies average a Sigma level of 1 or 2. Service has thousands of errors that cause massive delays and overtime. Backlogs are common and create added cost and excess manpower. Lean is having a huge effect on service processes, reducing lead times from 30 days to 1 day with half the number of people. In the service world, many of the processes were designed years ago to handle thousands of items, and at that pace they worked pretty well. Today, these same process are trying to handle millions of items. Clearly, the process was not designed to handle

that kind of volume, so we continue to throw resources at the process. Another big issue in the service industry is the Silo of Management within the process. This means that nobody actually has responsibility for the whole process. Each team is only focused on their part of the process, and they don't communicate very well with the other teams. This causes complexity, confusion and discontinuity.

In any process, someone has to own the entire process. Why does it take 160 days to process a claim that has about 4-8 hours of actual work done to it? Value Stream Mapping is the Lean tool that:

- ✓ Helps define the actual process.
- ✓ Show you where all the issues are.
- ✓ Tells you how long each step takes to complete and how many items are sitting around in the process waiting.

Waiting is the most common cause of delays. We identify all the items in the process as value add or non-value add; non value add activities include waiting, moving, counting, inventory, excess transportation and others. In most service companies, we find this ratio of value add to non value add is about 95%+ non value add activities or waste Vs only 5% value add activities! If you could take that 160 day process and reduce it to 30 days, do you think there is a savings associated with that reduction? The question we should be asking is "If it takes 8 hours to perform the task, why can't we do this in 1-2 days?"

About Jack Reardon

Jack Reardon has over 30 years experience in the Quality and Business Improvement field, specializing in Quality Management Systems and Improvement. His professional experience includes working at Data General Corporation for 15 years, including holding positions as the Corporate Quality Manager, Technical Operations Manager, Production Manager, and Customer Support Manager. He has also worked at Proconics International, Robotics as Director of Quality implementing TQM and ISO 9001, as Quality Manager and Plant Manager for National Perforating, an Aerospace supplier to Boeing, and as QA Manager for Insko Corporation, an automotive supplier of transmission gears.

Jack has provided coaching & training for ISO, Six Sigma and Lean at many companies. He has been a member of American Society for Quality for the last 12 years. In addition, he was an active member of the Worcester Section Executive Committee, holding several positions including Chairman. He also has ASQ Certified Quality Auditor, Provisional RAB Provisional auditor, and ASQ Certified Six Sigma Black Belt, as well as a Master Black Belt, Project Management, DFSS, and Certifications.

Contact Us!

 Quality & Productivity Solutions, Inc.

WORLD CLASS CORPORATE TRAINING CENTER
225 Cedar Hill Street · Marlborough · MA · 01752

PROVIDENCE

Rhode Island Training Location
801 Greenwich Avenue
Warwick, RI 02888

HARTFORD

Connecticut Training Location
1224 Mill Street
Building B
East Berlin, CT 06023

CHARLOTTE

North Carolina Training Location
10225 Feld Farm Lane
Charlotte, NC 28210

CHICAGO

Illinois Training Location
303 W Algonquin Road
Mount Prospect, IL 60056

U.S. A. Headquarters

One Sunny Hill Drive
Oxford, MA 01540
Phone: (508) 987-3800
Toll free: (877) 987-3801
Fax: (508) 987-1464
Email: info@qpsinc.com
Website: www.qpsinc.com

Asia Pacific Office

404, Ashirvad Paras
Corporate Road
Nr. Auda Garden,
Prahlad Nagar
Ahmedabad – 380015
Gujarat, India