



Lean and Six Sigma: Setting the P.A.C.E.

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Overview

- Desired approach to improvement
- Overview of Lean and Six Sigma
- Lean and Six Sigma Tools
- Setting the P.A.C.E.



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Keep it einfach, fácil, 简单, простой, and simple!

The Language of Good Business is
Simple Practicality and Good Common Sense

Likewise, complex things are studied ...



***It's the simple things
that tend to work best!!***

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Desired Approach to Improvement ...

- A strategy driven by profitability, employee involvement, and customer desires ...
- A strategy based on early, quick hits that evolve in to a transfer of skills and enthusiasm that help you achieve improved productivity, quality, and profit margin ...
- A strategy consistent with and complimentary to your existing initiatives



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Definition of Lean Adopted from NIST

A systematic, logical approach of identifying and eliminating **waste** (non-value-added activities) through continuous assessment and improvement ... while flowing the product at the pull of the customer, ... all in the endless pursuit of perfection



It all began with Henry Ford at the River Rouge Plant

**Doing more
with less a
whole lot faster!**

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Simply, we want to do it only if ...

- 1) The customer care\$,
- 2) It adds form, fit, function, or physically changes the process/service, and
- 3) We can do it right the first time ... every time.



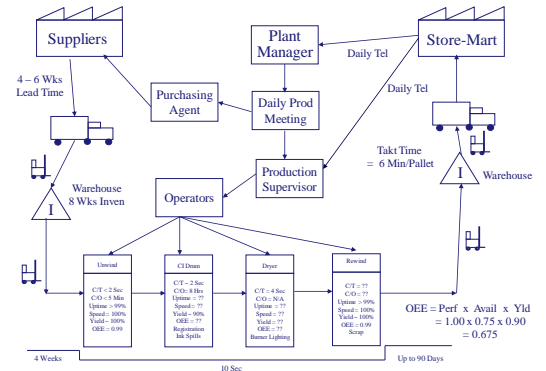
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Lean Tools

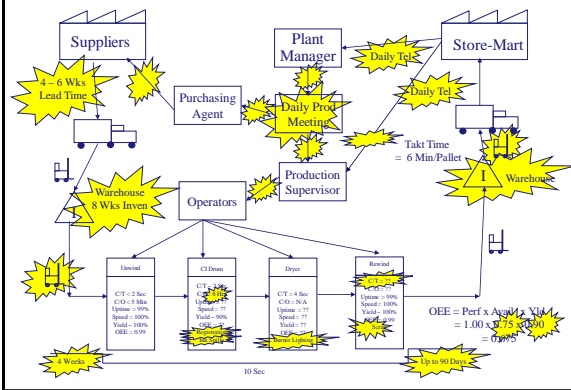
- **Value Stream Mapping** ... graphically identifying opportunities and a means of managing your improvement activities



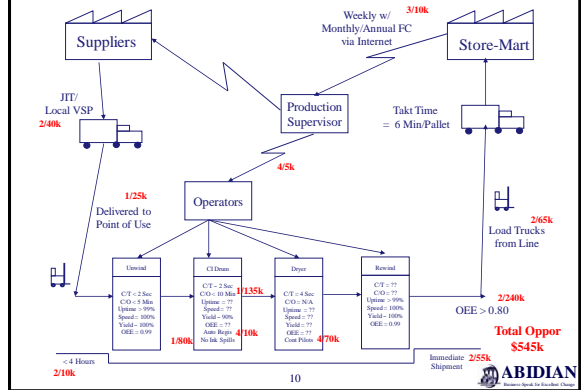
Current State Value Stream Map



Current State Opportunities



Future State Value Stream Map



Lean Tools

- **Value Stream Mapping** ... graphically identifying opportunities and a means of managing your improvement activities
- **Standard Work** ... the consensus "one way" for everyone to safely and efficiently perform work tasks
- **Smart Changeover** ... prepping and coordinating for quick access, easy replacement/repair, and the safe and speedy transition to the next product or service
- **Visual Workplace** ... prompts and reminders
- **Mistake Proofing** ... ensuring human and machine errors don't turn in to equipment/process failures
- **5S+1** ... improved organization and safety with needed tools, information, and materials less than "3 steps" away



Lean Practices

What is Six Sigma (6σ)?



- σ**
- Metric
 - Benchmark
 - Vision
 - Philosophy
 - Method
 - Tool
 - Symbol
 - Goal
 - Value

- Business strategy designed to help companies gain a competitive advantage
- Philosophy recognizing there is a direct correlation between the number of product defects, wasted operating costs, and the level of customer satisfaction
- Disciplined, statistically based methodology for reducing variation and defects
- A statistical metric that indicates how well a process is performing ... the higher the sigma score, the better the performance

6σ → World Class Business Excellence

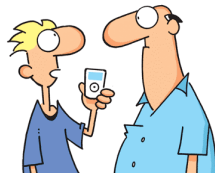
Six Sigma Tools

- **Voice of the Customer** ... cooperatively learning the desires and needs of our customers
- **Failure Mode and Effects Analysis** ... identifying potential failures, causes, and effects ... ideally upfront
- **Root Cause Failure Analysis** ... preventing a failure from occurring a second time
- **Gage R&R** ... validating the accuracy of our metrics/ measurement systems
- **Design of Experiments** ... statistically isolating various influences to determine the optimum "metallurgy"
- **Determining Statistical Significance** ... is the change truly a statistically significant improvement?



Okay ... soooo where do I start?

Keep in mind there's **Education** and then there's **Hands-On Training** ...



Eight Deadly **Wastes**

- **T**ransportation
- **I**nventory
- **M**otion
- **W**aiting
- **O**ver Processing
- **O**ver Production
- **D**efects/Re-Work
- **S**kills/Resources Under-Utilized



Payout	Lo	S	Hi	S
Quick	2	1	1	3
> 1 Yr	4	1	3	



Supplement the tools with insight, tips, and prompts

Most of all, make it hands-on!



Let's look at a brief example

- Transportation
- Inventory
- Motion
- Waiting
- Over Processing
- Over Production
- Defects/Re-Work
- Skills/Resources Under-Utilization



Bottom line, you want to set a new **P. A. C. E.**

1. **P**actical Application of the tools
2. **A**cceptance at all levels
3. Philosophy of **C**ontinuous Improvement
4. Exceeding everyone's wildest **E**xpectations

1. Practical Application of the Tools

- Lean especially, should be second-natured and certainly not a foreign language spoken by a few
- Properly implemented, Lean and Six Sigma are nothing more than *fact-based* common sense
- A key is to understand both the tool *and* its intent
- To be truly accepted, people must see personal and company value in the tools: less time, less space, less steps, less hassle, ...
- These things make life easier ... improve moral ... improve the culture ... and make the company more profitable

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2. Acceptance at All Levels

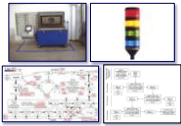
- Focus on and relate to the associates on the floor
- Include a top-to-bottom cross section of employees in all you do
- You're after commitment and not mere involvement



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3. Philosophy of Continuous Improvement

- It's recognized the vast majority of employees want a safer, cleaner, more productive work environment



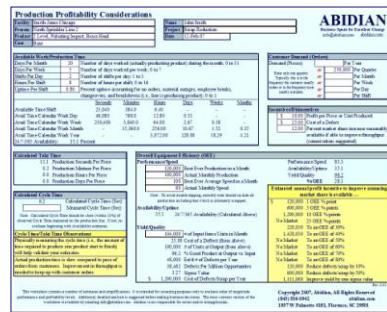
- Clearer "vision" of what's not right ... and a corresponding short/long range improvement plan is critical

- Assessments should likewise be visible, business bottom-line oriented, real-time, and drive action



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A Key Metric: Overall Equipment Effectiveness (OEE)



- Software simulations can help vividly illustrate the value of increasing the OEE components of Performance, Availability, and Yield
- Using OEE, comparisons to others, as well as, to budget levels can be made
- OEE can often be approximated on a real-time basis as well

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4. Exceeding Everyone's Wildest Expectations

- If you're after a marginal 3 to 5% improvement in a couple of areas, there are likely less strenuous approaches
- Lean and Six Sigma can generate breakthrough performance improvements of 30 to 50+ percent
- Strive for stretch goals far exceeding most current expectations



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We're often questioned about the need ... especially, the immediate need ... for change

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When it comes to change ...

Resistance may be a losing battle



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When it comes to change ...

You may not be able to ignore differences in the world around you



... much less successfully escape



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Two Kinds of Budgets



- Early in my career as a young supervisor, it was explained to me there were two kinds of budgets that affect profitability
- The first budget is the one we use for training, supplies, maintenance, chemicals, and the like
- The second is for salaries, wages, and benefits

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To the extent there's a problem in the first budget, we're often told to take it out of the second ...

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Given the two budgets and our druthers, most of us would probably prefer to cut inefficiencies and unproductive steps from our processes ... rather than heads



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When it comes to improving efficiencies ...

The successful implementation of Lean and Six Sigma have a sensational and well documented track record

Dramatic Results Seen
25% Reduction in costs
50% Productivity increase
90% Reduction in lead time
60% Customer complaint reduction
80% Reduction in inventory
90% Quality improvement
90% Reduction in changeover time
Elimination of the words "we can't"



Six Sigma Saves a Fortune:
Six Sigma has saved Fortune 500 companies over \$427 billion since 1987 ...

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How do I get started?

- Participate in a “Kaizen” improvement event ... several opportunities (i.e., standard work, visuals, metrics, changeover, excessive steps, ...) within a given work area will be resolved during the event
- One-day Executive Overview or five-day Lean Customer Service, Manufacturing, or Maintenance Workshop for those involved on an infrequent basis
- Lean Expert and/or Lean Six Sigma Green Belt for Manufacturing/Maintenance for those routinely involved in continuous improvement
- Although Abidian and others offer ASQ-Certified Lean Six Sigma Black Belt training, it’s typically not the most effective *initial* approach
- Or a combination ... regardless of the selected approach, we suggest it be “hands-on” and of a “Train the Trainer” nature

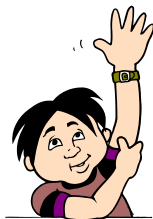
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I congratulate you on taking a step in learning how to be more efficient and productive!



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Questions ...

Comments??

Thanks for your time and consideration!

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Abidian, a recognized leader in productivity improvement, provides hands-on training in Lean, Six Sigma, Maintenance Excellence, and Total Productive Maintenance/Manufacturing. Learn more about us at abidian.com.

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Abidian: Business-Speak for Excellent Change

Over 5000 individuals from North America, Europe, and Asia have attended our workshops, presentations, and improvement events



Baldridge National Quality Award



Partners with Florence Darlington Technical College and the new Southeastern Institute of Manufacturing and Technology

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The Numbers ...

- During 2006, 97% of the attendees at Abidian’s workshops rated the knowledge of their workshop facilitator as excellent
- 94% of all workshop attendees rated the hands-on exercises and practicality of the illustrations provided as very good or better
- 100% of our 2006 attendees gave their kaizen improvement event or workshop an overall rating of very good or excellent
- Projected savings identified by our customers from our 2006 workshops, kaizens, and in-plant efforts ranged up to \$20 million

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