SBS Presentation
Leading the Lean Enterprise Transformation

…Building Strategic Advantage through Enterprise Wide Improvement…
MAJOR THEMES

- EXPECTATIONS & MEASUREMENTS
- LEAN LEADERSHIP CHALLENGES
- ORGANIZING FOR LEAN SUCCESS
What is Lean?

The Two Pillars of Lean – “True North”

CONTINUOUS IMPROVEMENT

RESPECT FOR PEOPLE
What is Lean?

Identification of Waste

Removal of Waste
Operating Room Waste
Operating Room – Improved Flow
What is Lean?

Exposé Problems

Current State

Solve Problems

Improved State

“Our own attitude is that we are chartered with discovering the best way of doing everything and that we must regard every process employed in the business as purely experimental”

Henry Ford

“True North”
Value Added Time = Lead Time

At Local Level
With “Guidance”

“Improvement with Guidance”

“If you assume that things are all right the way they are, you can’t do Kaizen”

Tiichi Ohno
• Everything in T.Q.C. begins with awareness of the customer
• Our ultimate goal in T.Q.C. is to earn customer satisfaction
• We at Toyota come to T.Q.C. with the frank admission that we had problems with quality
• T.Q.C. helped Toyota become a pioneering winner of the Deming Prize in 1961

Masao Nemoto, Senior Managing Deputy, Toyota Motors
Lesson One

Value Stream Analysis Provides the Improvement Plan
METRICS

1. Press Ganey Zone 21
   Goal: 60 to 75
   3rd/4th QTR '05

2. Press Ganey Zone 31
   Goal: 42 to 75
   3rd/4th QTR '05

3. Cost/Case
   -20%
Value Stream Map

Area: Home IV Infusion

**Business Case:**
- Increase production efficiency
- Decrease delays for patient
- Capitol Cost Avoidance

**Value Statement:**
Provide safe, effective, and accurate meds and information to the patient at lowest cost

**KEY REQUIREMENTS:**
- RPH
- Technician Involvement
- USP Compliant
- Order from Doctor

**MEASUREMENTS:**
- Cost Avoidance/ Rent Reduction
- Reduced Inventory $
- Reduced Patient Flowtime
- Increased Quality for Patient

**IDEOAL STATE**
- ON DEMAND
- DEFECT FREE
- 1 BY 1
- LOWEST COST

- Go to the Gemba
- Walk the Gembutsu

Simpler Business System® 11.0
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Value Stream Maps
Area: Home IV Infusion

**BUSINESS CASE**
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- ON DEMAND
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Focus = Just the Value Added
Learning = Begin to “See Waste”
## Value Stream Map

**Area: Home IV Infusion**

### BUSINESS CASE
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### IDEAL STATE
- **ON DEMAND**
- **DEFECT FREE**
- **1 BY 1**
- **LOWEST COST**

### The 6-18 month improvement plan
Lesson Two

Think 5X
OLD PROCESS

Performance: Focus on Flow

Old Process

Typical Process = 2/3% V.A.

TAT = 85 Days
V/A Time = 1791 Min.
Typical First “Pass” = Drop ½ - Steps/Handoffs/Errors/Time/Waste
Typical 4th/5th “Pass” = Drop 90% - Steps/Handoffs/Errors/Time/Waste
Lesson Three

It is Always More Than You Think
# World Class Benchmarking

<table>
<thead>
<tr>
<th></th>
<th>“Batch” System</th>
<th>“Toyota” System (Lean)</th>
<th></th>
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<tbody>
<tr>
<td>Inventory Turnover</td>
<td>3x</td>
<td>30x</td>
<td>Cash Generation</td>
</tr>
<tr>
<td>Customer Complaint Rate</td>
<td>10,000ppm</td>
<td>100ppm</td>
<td>Turns Company Into A Growth Company</td>
</tr>
<tr>
<td>Customer Lead Time</td>
<td></td>
<td>- 95%</td>
<td>A Growth Company</td>
</tr>
<tr>
<td>Space</td>
<td></td>
<td>-90%</td>
<td></td>
</tr>
<tr>
<td>Productivity</td>
<td>1x</td>
<td>4x</td>
<td>Margin Improvement “2” pts/yr for 6 yrs</td>
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</tbody>
</table>

MOST DON’T REALIZE HOW HIGH “HIGH” REALLY IS
Lesson Four

Measurement Can be Simple
Measuring Lean

Toyota Production System Vision of the Ideal – True North

Customer Satisfaction =

- Quality - 0 Defects
- Delivery – Lead Time = Value Added Time
- Cost – 100% Value Added Work

Improvement in Q, D & C, drives ALL financial performance measures
Measuring Lean

**Lean is a PEOPLE DRIVEN PROCESS**

- Thus lean leaders, including Toyota, add “Human Development” to the TOP of their targeted measurements list.
- The priority ranking for improvement is: HD,Q,D & C/P
  - But lean enterprises expect world class annual improvement rates (“Double Digits”) in all four categories.

“There can be no successful Monozukuri (making things) without Hito-Zukuri (making people)”

*Toyota*
Lesson Five

Quality Pays
Higher Relative Quality = Higher ROI – At Any Market Share Level!

PIMS Principles R. Buzzell & B. Gale
U.S. Customer Behavior Study

Customers who have been disappointed by defects, malfuntions and other basic quality problems:

- 90% go away without saying anything, and **DO NOT RETURN**
  - 85% of those people tell **AT LEAST** 9 other people of their dissatisfaction
  - 15% voice their dissatisfaction to **AT LEAST** 20 other people

Every REPORTED quality problem should be treated as a “golden nugget” – the beginning of the next improvement

Source: TARP – Technical Assistance Research Program
Lesson Six

Short, Consistent Lead Times
Provide Growth
Lean Conversion Impact
Delivery Performance

- Moved from delivery once a month to daily in 2 ½ yrs
- Moved from 0% on time to 100% on time

95% Reduction in Throughput Time/Lead Time
5 “passes through the Value Stream”
Reducing Lead Times by $\frac{3}{4}$=
Growing 2-4 Times Industry Rate

<table>
<thead>
<tr>
<th>Company</th>
<th>Business</th>
<th>Lead Time Difference</th>
<th>Growth Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlas Door</td>
<td>Industrial Doors</td>
<td>66%</td>
<td>5x</td>
</tr>
<tr>
<td>Ralph Wilson Plastics</td>
<td>Decorative Laminates</td>
<td>75%</td>
<td>4x</td>
</tr>
<tr>
<td>Thomasville</td>
<td>Furniture</td>
<td>70%</td>
<td>2x</td>
</tr>
</tbody>
</table>

Lean can reduce lead time of all customer sensitive processes – E.G. Product Development / Application Engineering / Order Entry / Corrective Action
Lesson Seven

The Fastest Way to Increase Capacity is ..... Lean Transformation
Lean Conversion Impact

Jacobs Space Recovered

% of total square footage

1/2 of floor space freed up in 1 yr
3/4 of floor space freed up in 3 yrs
Lesson Eight

Productivity Drives 90% of Internal Costs
A Four Fold Productivity Gain IS Possible
Few firms measure productivity –
Even fewer push double digit improvement rates

“We set really high targets and then try like crazy to get there. If we don’t reach a target, we try to figure out why we fell short. What stopped us. Is there anything we can do to take another step”

David Absher, TMMNA
Lean Conversion Impact

JACOBS PRODUCTIVITY TREND

Kits Packed/100 Hours Worked

WOW

+271% Productivity (after 5 years of conversion Work)

Lean Event Activity Drives Results!

Note: Implementation stopped 9/90  Restarted 1/92
Lesson Ten

As a Leader:

- It will take 70% of your time/focus to get double digit gains in productivity
- But 30% of your time/focus will get double digit gains in people development, quality and delivery cycle times
Lesson Twelve

PEOPLE ARE THE FOUNDATION OF ALL IMPROVEMENT

“WE BUILD PEOPLE, BEFORE WE BUILD CARS”

TOYOTA
Toyota Style Habits/Behaviors

• Be a mentor and a role model
  – People development is #1 True North goal
“we build people, before we build cars”
• The key to people development is mentoring
  – Thus mentoring is the #1 skill of Toyota leaders
    » You demonstrate mentoring skill through the development & performance of those who work for you problem solving
    » You CANNOT be promoted until you have demonstrated your desire and ability to mentor

“Good leaders do not produce more followers. Good leaders produce more good leaders” Takashi Harada, Toyota OMCD
Jake Brake-1987 to 1998

- Sales 380% of 1987
- Productivity 470% of 1987
Danaher Corporation (DHR)

67x in 22 years (21.1% compounded)

$0.94 on 11/01/87

$62.95 on 06/01/09
Lesson Sixteen

Lean Improves

Both the

Income Statement

And the

Balance Sheet
Lean has positive impacts on both the Income Statement and Balance Sheet

**Income Statement**

- **Total Sales**
  - Grows at 2-4X industry growth rate, due to short DELIVERY TIME
  - Grows due to improved QUALITY
  - Grows due to faster / lower cost, NEW PRODUCT DEVELOPMENT

- **Cost of Sales**
  - Is reduced due to productivity growth

- **Selling General & Administrative Costs**
  - Is reduced due to productivity growth

- **Financing Costs**
  - Reduced as inventory goes down
  - Debt paid down with increased income
• Balance Sheet
  – Inventory
    • Reduced dollar value of inventory
      – Sales growth requires less working capital
  – Fixed Assets
    • Frees up both floor space and machine capacity
      – Sales growth requires less fixed capital
• Net, net = A Synergistic Impact on R.O.A. & R.O.E.

PD,Q,D,C DRIVE ALL FINANCIAL METRICS
### Manufactured Fireplace Firm – 7 years of lean

- **Recordable accident rate**: -81%
- **Warranty costs**: -69%
- **Lead time**: 6 weeks → 5 days
  - Mixed truck load, build to dealer order
- **Complete and on time**: 84% → 98%
- **Enterprise productivity**: +38%
- **Inventory turnover**: +171%
- **Sales/square foot**: +131%
- **Operating income percent**: +221%
- **Return on assets**: +237%
- **Cash flow**: +519%

- **True North improvements are all “double digit” gains**
- **Financial improvements show TN synergy with “triple digit” gains**

**HD,Q,D & C Drive all Financial Metrics**
Lean Leadership Challenges
Lesson Seventeen

Lean

“Feels Wrong”
“It Just Doesn’t Feel Right”

• The principles of lean can easily be absorbed in a one-half day classroom session, BUT:
  • The intellectually easy to grasp principles, such as “one-piece flow” GO AGAINST THE TRAINING AND PRACTICES OF OUR WHOLE PRIOR CAREERS

“understanding theory in the head is NOT the problem. The problem is to remember it in the body, to make it instinctive.

Taiichi Ohno, “The Evolution of the Toyota Production System”, Unpublished manuscript
It Just Doesn’t Feel Right

The Core Concepts of Lean are not Complex Ideas, but they are Difficult to apply because they are the OPPOSITE of what we currently believe:

- From we need to “fire fight” today’s problems quickly
  - To...we need to ask “why” five times
- From seeing people as the source of problems
  - To...seeing processes as the source of problems
- From “A supervisor’s “natural urge” to redeploy the lowest performer from a work team whose area has been Kaizened”
  - To...“always redeploying the best team members”
- From “You go to class to learn”
  - To...Management teaches by example – guiding associates through developmental experiences – learn by doing
- From “What matters is how good we are”
  - To...“What matters is how fast we are improving”

It’s not hard to understand…
It’s hard to do
Lesson Eighteen

Lean knowledge is acquired through long term HANDS ON LEARNING
The Learning Curve

• You can only really learn lean production by O.J.T. (the “dirty hands” method)
• If you spend a full week on a Kaizen event, improving a small area of your operation, it will take a dozen weeks of the O.J.T. to give “BASIC TRAINING” in lean production (at a Kaizen event/month pace, this takes one year)- GRADE SCHOOL
• If you continue to gain personal experience in full-time, week-long “doses”, it will take about 36 weeks of O.J.T. before you are COMPETENT with most of the lean “tools”- HIGH SCHOOL
• However, it will take about 60 weeks or more of O.J.T. (about 5 years) for you to be fully competent with the “tools” and also fully BELIEVE in the principles.- COLLEGE
• “Institutionalizing” the behaviors that are the foundation for a new continuous improvement culture takes more like 100 events + a decade of lean transformation leadership experience - GRADUATE SCHOOL

EVERYONE underestimates the length of the learning curve!
Toyota has long maintained that the Toyota Way can only be grasped through constant practice in the workplace under the tutelage of a deeply experienced Master.

“Some lessons can’t be taught. They must be lived to be learned”

Fortune, February 7, 2005
Lesson Nineteen

Lean Participation
Creates New
Attitudes and Behaviors
5-Day Event Participation

- Manager shows appreciation
- Encouraged to balance work and personal life
- Recommend this org as a good place to work
- Management has kept promises
- Someone at work seems to care about me
- Satisfied with my job security
- Manager provides sufficient opportunities
- My opinions seem to count
- People are willing to give extra
- Overall this is a great place to work
Lesson Twenty

Every Time You Restudy a Process
Lean Shows New Levels of Waste and Improvement
## REVERSAL OF “LAW OF DIMINISHING RETURNS”

Repeat Kaizens on the Same Part Number

### FNGP Ligonier, Indiana, Factory, 1992-94

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of Associates</th>
<th>Pieces Made Per Associate</th>
<th>Spaces Utilized (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEB 1992</td>
<td>21</td>
<td>55</td>
<td>2,300</td>
</tr>
<tr>
<td>APRIL 1992</td>
<td>18</td>
<td>86</td>
<td>2,000</td>
</tr>
<tr>
<td>MAY 1992</td>
<td>15</td>
<td>112</td>
<td>1,850</td>
</tr>
<tr>
<td>NOV 1992</td>
<td>12</td>
<td>140</td>
<td>1,662</td>
</tr>
<tr>
<td>JAN 1993</td>
<td>6</td>
<td>225</td>
<td>1,360</td>
</tr>
<tr>
<td>JAN 1994</td>
<td>3</td>
<td>450</td>
<td>1,200</td>
</tr>
<tr>
<td>AUG 1995</td>
<td>3</td>
<td>600</td>
<td>1,200</td>
</tr>
</tbody>
</table>

- At least 6 complete reviews of each process are necessary to achieve full lean results
- Given good preparation and follow up: more Kaizen events = more results

Baseline performance before start of lean initiative on this three-shift operation with seven associates per shift.

During this period OSHA reportable accidents and Worker’s Compensation costs both declined by more than 92%. Total capital spending over this period was less than $1,000. for a right-sized, in-line painting system permitting single-piece flow.  

Source: Shingo Prize Examination
Organizing for Lean Success

Organization Changes that Support the Lean Conversion
Lesson Twenty Six

There is a Level of Full Time Support and Team Activity Needed to Sustain “Double Digit” Annual Gains in HD,Q,D & C
Organizing for Lean

**Western Perception of Job Functions**

- Innovation/planning
- Running the Business

- Top Management
- Middle Management
- Supervisors
- Workers

**Lean Enterprise Perception of Job Functions**

- Innovation/Planning
- Continuous Improvement (Improve the Business Processes)
- Daily Management (Run the Business Processes)

- Top Management
- Middle Management
- Supervisors
- Workers

**GOAL:** STEADILY INCREASE THE PORTION OF THE ORGANIZATION THAT WORKS FULL TIME ON IMPROVEMENT

Source: IMAI & Koenigsaecker
Organizing for Lean

Alignment-Short Term

Lean Development Team

- Our organizations are built around “fire fighting” – to start “improving” you MUST commit some resources, FULL TIME, to improvement

- Successful lean conversions have 3% of their employees dedicated, FULL TIME, to improvement efforts by their 3rd year
  - The 3% should roughly be:
    - 1% - future sensei – 5/6 years of FT team
    - 1% - future GMs/VSMs – 2/3 years on FT team
    - 1% - supervisors / middle managers – about 1 year on FT team

- Start with AT LEAST 1 FULL TIME improvement process person per value stream

- A good formula is to allow the addition of 1 full time Lean team addition for every 5 employees “freed up” through Kaizen events/lean deployment

The Lean Development Team leader should be the site “heir apparent”
Lesson Thirty One

You Can Not Delegate Leadership
LEADERSHIP

Top Management Role

- Successful lean conversions are ALWAYS led from the top
- Key tasks for executive leadership:
  - Select a “sensei” to guide you
  - Pick an important Value Stream for your initial focus
    - Set HD,Q,D & C/P goals
    - Conduct Value Stream Analysis
  - Dedicate 3% of Value Stream personnel to full time lean team
  - Initiate improvement events at N/10 pace: results + learning + culture building
  - Participate full time in one 3 day value stream analysis, plus...

YOU CAN’T DELEGATE LEADERSHIP!
Mgmt role cont’d

▪ Spend 1 FULL WEEK, early on, as a member of a “standard work” team in one of the operations, plus…

▪ Spend 1 FULL WEEK on an administrative process improvement team

▪ Establish a plan to get all senior leadership a dozen full time event experiences
  ▪ 1 a month for first 3 months
  ▪ 1 a quarter there after
  ▪ Make full time participation a condition of participation in any bonus program

▪ Arrange for a member of the executive leadership team to be on hand for each “Friday Morning Report-out” session during their Kaizen event weeks
  ▪ This simultaneously shows corporate support AND educates the executive staff on the lean conversion process

▪ Hold a monthly review of improvement projects & results for all locations that have begun the lean conversion process (Strategy Deployment)

▪ The “anti-bodies” must be addressed…and this needs to be done in the first 3 months!!

“At Toyota, leading is not treated as a discipline distinct from doing, rather, the authority of leaders derives from their proficiency as practitioners”

Source: Inculcating Culture the Toyota Way. The Economist
Putting the **System** to work

To benefit from the Toyota Business System, companies must satisfy three basic conditions:

1. **Top management** MUST MAKE A STRONG AND VISIBLE COMMITMENT to the system, MUST PARTICIPATE DIRECTLY in implementing the system, and MUST INSTRUCT MIDDLE LEVEL MANAGERS TO DO LIKewise.

2. All employees must participate in the system.

3. The companies must put in place a **solid framework for cultivating capable leaders and for providing employees with necessary practical skills**.

Source: The Toyota Production System, TMC
Putting the System to work (cont’d)

- Once top executives recognize that corporate survival depends on fundamental change, THEY MUST LEAD THAT CHANGE THEMSELVES.
  - They must venture into the workplace
  - They must let employees know what kind of change they envision and why
  - They must put middle management on notice that managers’ jobs will hinge on active cooperation in promoting change

You can’t manage a lean conversion –
YOU HAVE TO LEAD IT!
Putting the System to Work (cont’d)

▪ Next, executives must translate their commitment into an organizational framework. They should begin by establishing a task force under a capable leader to set up a showcase production line.

▪ That line becomes a staging area for disseminating the new production concepts throughout the company

▪ Members of the original task force supervise work in implementing the concepts on other production lines

Source: The Toyota Production System, Toyota Motor Corporation
BENCHMARK LEAN LEADERSHIP DEVELOPMENT

• DANAHER IMMERSION
  • 13 weeks of full time Lean
  • 9 Events + 3 Strategy Deployment/EVSA
  • Personal Mentor + Assessor

• HNI EXECUTIVE DEVELOPMENT
  • 4 Event Weeks in first 6 months
  • Production Standard Work, Value Stream Analysis, Administrative
    Standard Work, 3P
  • + 3 Additional Event Experiences every year-as a condition for
    bonus plan participation

SENIOR EXECUTIVES MUST LEARN TO “SEE WASTE”
Laying the New Foundation

• Achievement of the full results of a lean enterprise conversion will take 6 to 10 years
  – The magnitude of improvement will typically revolutionize a company’s position in it’s industry
    • however, the typical pattern for the first couple of years is not one of consistent progress
Laying the New Foundation

• First year
  – Progress is often appears slow
  – Two steps forward, one step backward
  – Individual projects seem to show great potential
  – Sometimes difficult to see significant enterprise wide improvement
    • Typically only 20-30% of business is engaged in Lean activity
  – Many people are still “confused” by new approach or “upset” by change
Laying the New Foundation

• Second year
  – The major “resistance” year for the conversion process
    • “fifth column” of anti-change employees are highlighting all the instances of “one step backward”
    • “change agents” will be inexperienced and make many implementation “errors” (all part of the learning process, but difficult to explain)
  – Typically only 40-50% of the business is engaged in Lean activity
  – By the end of the second year “the jury may still be out” on the conversion process
Laying the New Foundation

• Third year
  – Managers gain skill in managing the process
    • More team members have prior experience applying the lean tools
    • more “two steps forward” -- “fewer falling back” results
  – Typically only 60-70% of the business is engaged in Lean activity
  – Compounding of improvements - in morale, quality, delivery and productivity -- are large enough to demonstrate success
  – By the end of the third year, the general comment is “we are making great progress”!
    • But when will we be done?
Laying the New Foundation

• Fourth year
  – Change is gradually becoming the new “norm”
  – The change process begins to be “institutionalized”
  – Tremendous positive momentum is building in the organization
  – Typically only 80-90% of the business is engaged in Lean activity
  – We have begun to create a NEW CULTURE – a “learning organization” Based on Lean tools, philosophies and behaviors
    • Almost everyone has been on at least one Jishukin

Instead of wondering “when will we be “lean””, and stop, people begin to believe that the process and its benefits really are CONTINUOUS!
Lean Transformation is “Leadership Intensive”

GK
George Koenigsaecker

Leading the Lean Enterprise Transformation