Lean-Driven Innovation

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GOODYEAR
F-E-A-R: Has two meanings

1. Forget Everything and Run
   or
2. Face Everything and Rise

THE CHOICE IS YOURS?
**Trust:** Give a voice to 100% of your associates

**Define:** - **Question:** What does the enterprise want to accomplish?

**Alignment:** - **Question:** Does the individual know how they contribute to enterprise “Winning”?

**Execute:** **Question:** Do you have a process that enables and develops people, holds people accountable and recognizes contributions?
“In Search of Excellence” and “Built to Last” are two of the most successful business books ever written.

.....by 2006, 20% of the 61 companies studied were out of business.
Global Competition
Phase C: Proof of Concept
Phase B: Concept Scoping
Phase D: Detailed Assessment
Gate A
Gate B
Gate C
Gate D
Transition Phase

PCP: Product Creation Process

Stage 1: Market Research
Stage 2: Demand Analysis
Stage 3: Technology Assessment
Stage 4: Market Validation
Stage 5: Launch
Stage 6: Post-Launch
Except for Quality and Safety, Goodyear’s innovation process not competitive
Lean R&D Transformation Map

Five Steps to Get Lean

1. Value
   - Value in the customer's eyes
   - Value stream mapping

2. Value Creation, not Cost Reduction
   - Value creation vs. cost reduction

3. Lean Thinking
   -价值思维
   - Lean thinking - waste elimination

4. Lean Implementation
   - Lean implementation

5. Lean Operation
   - Lean operation

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Transform From the Inside Out

• Change management is all about PEOPLE
• After the change you will work with the same people than before
• The best people to manage the change are those who know the work and the company
• It is easier to teach process experts lean principles than to teach CI experts the process and the culture
Focus on PRINCIPLES

..not **tools** looking for an application

Learn/teach the universal lean principles and expertly apply them to your process.
Five Steps to Get Lean

1. Specify **Value** for the customer while providing opportunity for growth
2. Start Over
3. Value Creation, not Cost Reduction
4. Work to Perfection
   - Kaizen / CIS
5. Implement Pull
6. Focus on value stream
   - Think end-to-end
7. Create Flow and Stability

Lean Thinking – Womack / Jones
Creating Customer VALUE
Apply Lean to the Shadows

![Bar chart showing direct costs to business and indirect influence on profitability.]
Winning in Innovation
Apply lean to the R&D shadows

On-Time Delivery

OTD = percentage of new product projects that are on time.
Collaboration Across the Value Stream
New Product Launch
Myth: Failure (Yes, there are some bad ideas)

The difference between innovative and not-so-innovative people is that the successful ones try more often.
That is Innovation
Principles of Value Stream Collaboration

• Targets set JOINTLY – but they evolve
• Targets reflect value for customer and company growth
• CONCURRENT development
• Functional and personal agenda secondary to customer value and the company growth
Setting the Example
There is more value created with value stream alignment than functional (departmental, individual…) excellence
Flow, Speed, Pull

Fertile Ground for Lean
1,500 sku’s/year – 4,000 learning cycles
10 Second Rule
Overlapping Engineering Tasks

- Single Piece Flow ➔ Focus Resources and Eliminate Wait Times
- Kickoff Meeting ➔ Shared Information / Up-Front Preparation
- Teamwork / Parallel Engineering
- Downstream Activities are Planned / Scheduled
When work is complete, please date the Engineering Kanban (out date) and send it to the TPL.

Add the Build Wire number on the "Prototype Tires" Kanban date it (In Date) and send the "Prototype Tire" Kanban to QTECH.

When the prototype tires shipped from the plant, please date the kanban card (out date) and send the card to the TPL.

When modeling work is complete to the extent that the MDR can be issued, please write the MDR number on the mold design kanban.

Date the "Modeling" kanban (out date) and send this kanban to the TPL.

Date the "Mold Design" kanban [in date] and post it on the Mold Design Kanban Board.

Instructions on back side.
Among many lean opportunities ...

If I had only one thing to focus on, it would be SPEED

- Competitive advantage
- Collaterals of efficiency

Some Goodyear iterations require more time than others. In order to track cycle time across all iterations, regardless of the varying time, Goodyear established a measure of normalized weighted duration, establishing a base of 100 in 2005.
Institutionalize the lean initiative:

Create a Lean Operation to manage AND improve the process

A3

Standard
Throughput – Goodyear NAT Learning Cycles

Develop Product AND Capability

Reinvest the gains

- Iterations


- Fundamental technology
- Applied technology
Lean Innovation – The Fuzzy Front End

- Lean does not have a good reputation for supporting disruptive innovation

Lean can enhance the creativity process.
The TWO Goodyear Processes

TCP: Technology Creation Process
- Phase A: Gate A
- Phase B: Gate B
- Phase C: Gate C
- Phase D: Gate D

ICP: Innovation Creation Process (Global)
- Phase B: Gate B
- Phase C: Gate C
- Phase D: Gate D

PCP: Product Creation Process (Regional)
- Stage 1: Gate 1
- Stage 2: Gate 2
- Stage 3: Gate 3
- Stage 4: Gate 4
- Stage 5: Gate 5
- Stage 6: Gate 6

Product Leadership Strategy

Execution
Success Assured

Kentou
Lean Innovation Learning

• INNOVATION must be managed (process)
• R&D decision: WHAT TO WORK ON
• Typical result: work on everything
• Which results in: nothing gets finished

• Lean solutions:
  – Try a lot – assess quickly – (scrum, agile …)
  – Lean Experimentation (lean start-ups)
  – Avoid lean innovation killers
  – Manage innovation talent
People

• Engineers

• Leaders
Engineers

• E³ – Engagement – EDUCATION – Empowerment
  – RESPONSIBILITY
  – Trust
  – Respect

• Sense of accomplishment
• Engagement survey results
Leadership

When bottom level guys look up, they see only....
Billy Taylor’s Lean Leadership
Fayetteville – Where we were…

Fayetteville: Capacity
(Tires Produced Per Day)

Fayetteville was missing demand by 150K+ tires a month! Missing Millions in sales revenue.
“Enterprise Alignment”
Fayetteville, North Carolina
Finished Tires Per Day

Breaking Through

- 23% Improvement (7,348 Increase in tires per day)
- No additional cost to manufacture, offsetting millions in headwinds
Respect

• People come to work to do a good job
• If they cannot, look at process, training, qualification ...
• The best people to improve the process are the people who work in the process
• Management’s job is not to give answers but to ask questions
Winning as a team

Goodyear North American Operating Income

In 2006, profits were affected by a 4-month-long URW strike. The 2008 and 2009 results reflect the impact of the great recession on the overall automotive industry.
Thank You!

Please complete the session survey at: www.ame.org/survey

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