Lean-Driven Innovation

Norbert Majerus and Billy Taylor















F-E-A-R: Has two meanings

1. Forget Everything and Run

or

2. Face Everything and Rise

THE CHOICE IS YOURS?





"WINNING"



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















Association for Manufacturing Excellence.







Share • Learn • Grow.

2016 Global R&D



Except for Quality and Safety, Goodyear's innovation process not competitive









Share • Learn • Grow.

Lean R&D Transformation Map







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



Share • Learn • Grow

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





Share • Learn • Grow.

Creating Customer VALUE





Apply Lean to the Shadows







Winning in Innovation





Apply lean to the R&D shadows









Collaboration Across the Value Stream













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.











25



AR

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





Five Steps to Get Lean



Flow, Speed, Pull



Association for Manufacturing Excellence.



1,500 sku's/year – 4,000 learning cycles







Overlapping Engineering Tasks



Association for Manufacturing Excellence.

Work Authorization - Kanban

CONSTRUCTION KANBAN	PROTOTYPE KANBAN		
GOODYEAR Wrangler CORR Race test Test Size V100 Cease 2 24/2011 Project Star Data Construction Modeling Suite B/W-Spec or SCC and MSL's Construction Marked Engineer Marked Engineer M	GOODYEAR Wrangler CORR Race test Test Size V100 Composition of informal Composition of informal Commission of informal Commissiono of i	When the prototype tires shipped from the plant, please date the kanban card (out date) and send the card to the TPL	Spec Buildwire Test Requests 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
Riconey 100001-01-2 Start 100001-01-2 BW Submitted Rev 0-0302011 14132 PM	Submitted	Instructions o	n back side
T & C / MOLD KANBAN GOODYEAR Wrangler CORR Race test 103/2007 Gate 2 Test Size V100 Cate 2 2/2/2011 Project Barchab Durique 100001-01-2 ARD/ERD ARD-070267 Plant Danville,Gadsden EPL Bethann Zaveson TPL Marc Nowacki MDR Date 3/4/2011 Cate 5/27/2011 Cate Start Complete	TESTING KANBAN GOODYEAR Wrangler CORR Race test 103/2007 Test Size V100 Deemer Odside Mdd - Ending Green Prettor Cols Unique 100001-01-2 ARD/70267 Plant Darwille Gadsden EPL Bethann Taveson Notes TPL Marc Nowabki Testing Target Completion Critical Test #1 Critical Test & Test Completion Date Test Completion Date The Ship demented 71/2011 100001-01-2 Schaded 71/2011 100001-01-2 Rev - QR2011 Linit 2 FW Rev - QR2011 Linit 2 FW	When mold design work is complete to the extent that mold production can start, please date the 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.

Ifacturing

Among many lean opportunities ...

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

Competitive advantageCollaterals 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





Standard



Throughput – Goodyear NAT Learning Cycles



Association for Manufacturing Excellence.

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





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









When bottom level guys look up, they see only......





Billy Taylor's Lean Leadership









Fayetteville – Where we were...





Share • Learn • Grow.

43

"Enterprise Alignment"









Breaking Through

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



Share • Learn • Grow.

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

Session: ThP/39 Lean-Driven Innovation Norbert Majerus / Billy Taylor Goodyear norbert.majerus@goodyear.com)



