

Changeover.com

Changeover made ESEE



Pitstops in your process

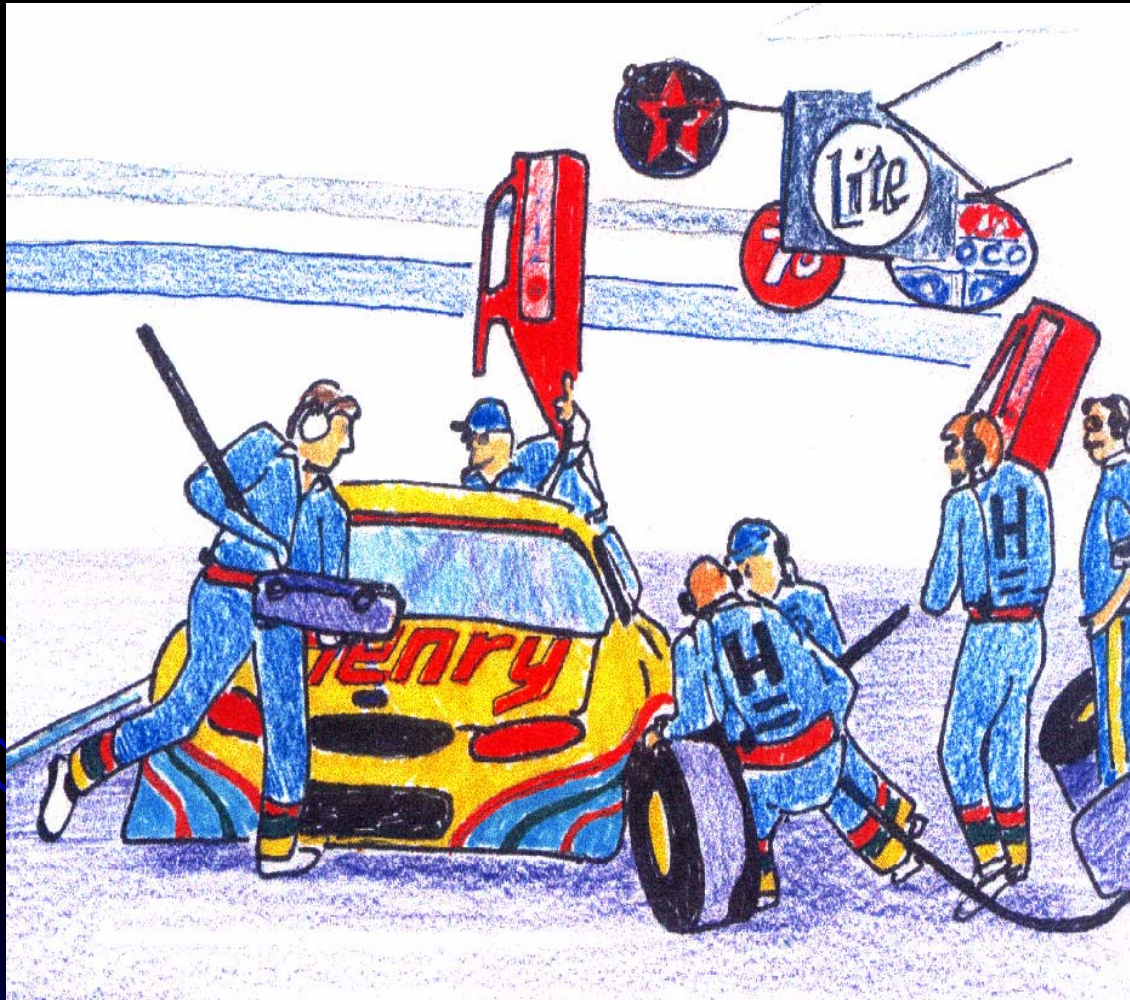
InterPhex 2008

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Gone in 14 seconds



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Why in 14 seconds?

- **NASCAR does it for the money**
 - 1 second at 200MPH is 300 feet of position
 - 1st place can earn \$100,000 more than 2nd
- **Pharma plants do it for the money**
 - During changeover the line is not producing
 - Lost production time costs more than \$10,000/hour (\$2.78/second)

How in 14 seconds?

- Teamwork
- Prior preparation
- Training
- Proper tools + special tools
- Consistent techniques and practices
- Continuous improvement
 - Measure and track each pitstop/changeover
- Attitude
- Car & product design

Convert changeovers to pitstops

- Reduced changeover time can take a company from also ran to world class
 - Increased capacity
 - Increased production
 - Better responsiveness to market
 - Reduced costs

Changeover defined

- Changeover is the total process of converting a machine or line from running one product to another.
- The “3 Ups”
 - Cleanup
 - Setup
 - Startup



Changeover time defined

- Long definition:
 - Changeover time is the total elapsed time between the last unit of good production of the previous run AT FULL LINE EFFICIENCY to the first unit of good production of the succeeding run AT FULL LINE EFFICIENCY
- Short definition:
 - Good production to good production



Take a page from NASCAR

- Focus on reducing changeover time
- Model changeover on pitstops

Say NO! to quick changeover

- Quick changeover implies that changeover will be done as always, only faster
- Quick changeover implies that associates will be expected to work harder
- Quick changeover will not achieve any lasting gains
- Quick changeover will alienate the workforce



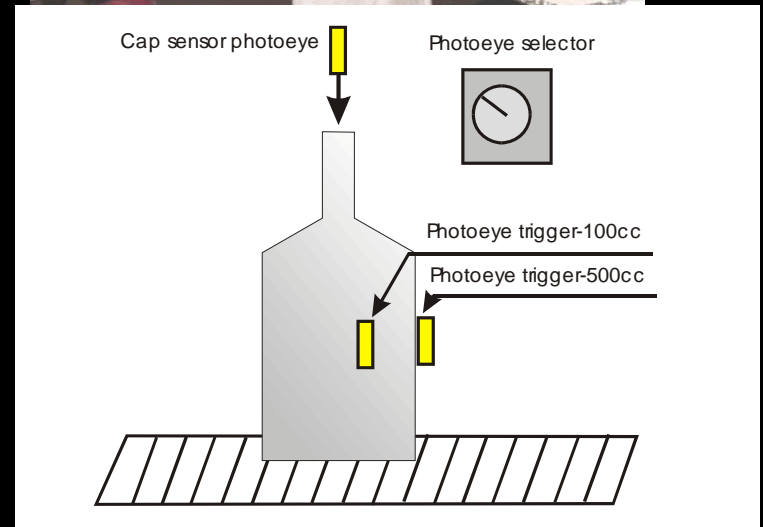
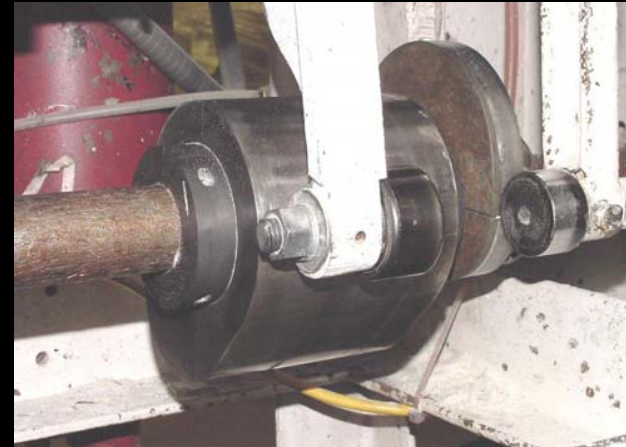
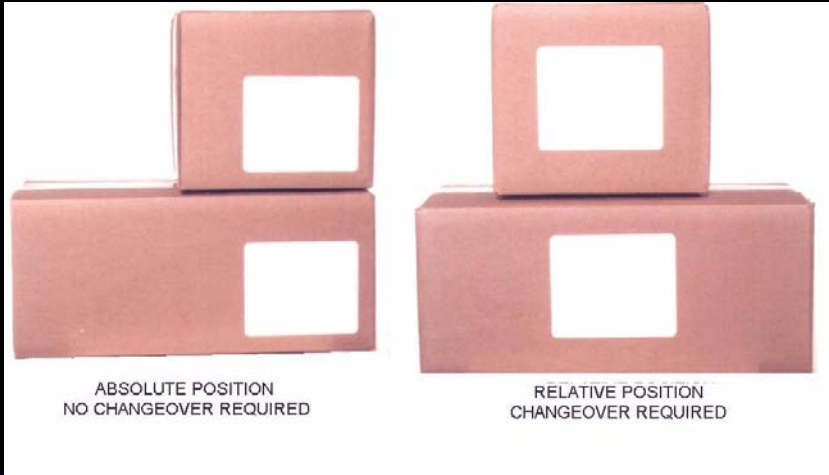
Say YES! to lean changeover

- Lean changeover:
 - Removes all wasted motion, materials, effort and especially downtime
 - Addresses the entire changeover process including both operations and machinery
 - Is about working more slowly, doing less, not working faster and doing more
 - Is about eliminating wasted time, especially changeover time

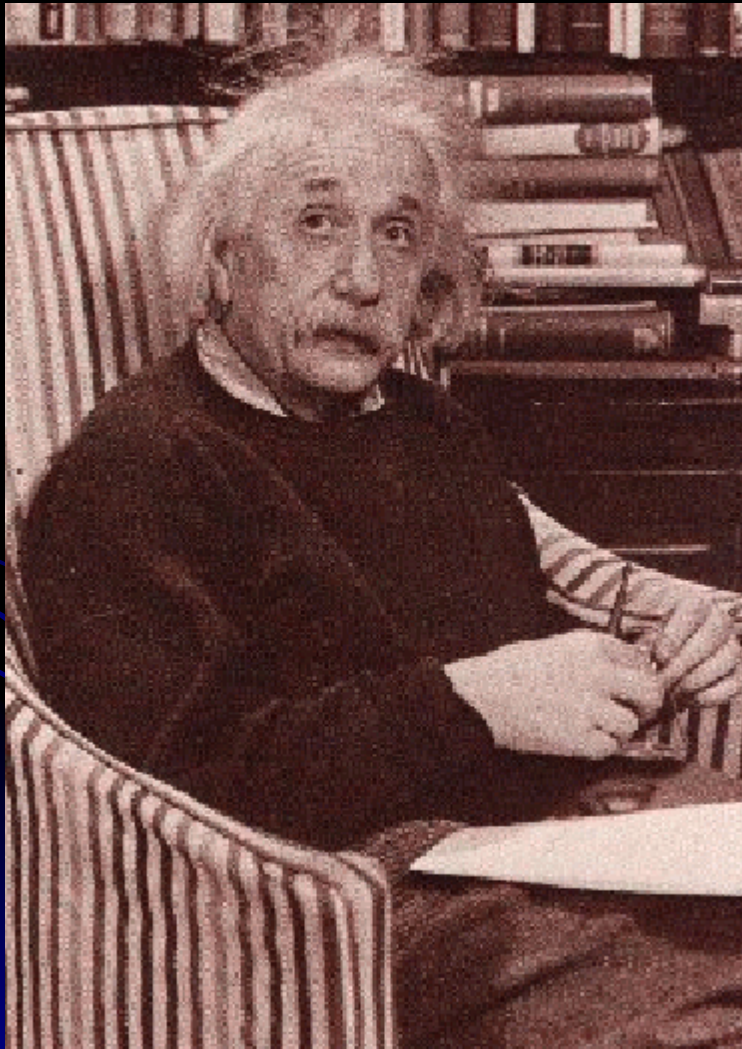
Do it the ESEE way

- **Eliminate** all unnecessary or NVA activities
- **Simplify** all activities
- **Externalize** everything possible
- **Exactly!** Make all adjustments to precise and repeatable positions

Eliminate NVA tasks



Be creative



Imagination is
more important
than knowledge.

-Albert Einstein

Simplify



Courtesy Valtek Associates Inc

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Externalize

- Perform changeover tasks while the line is running



Courtesy Uhlmann Packaging



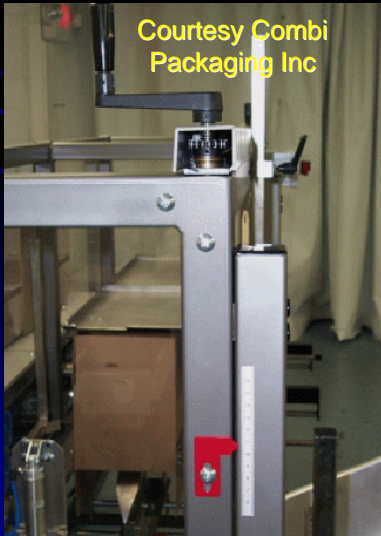
Courtesy LMT Fette Compacting

What about cost?

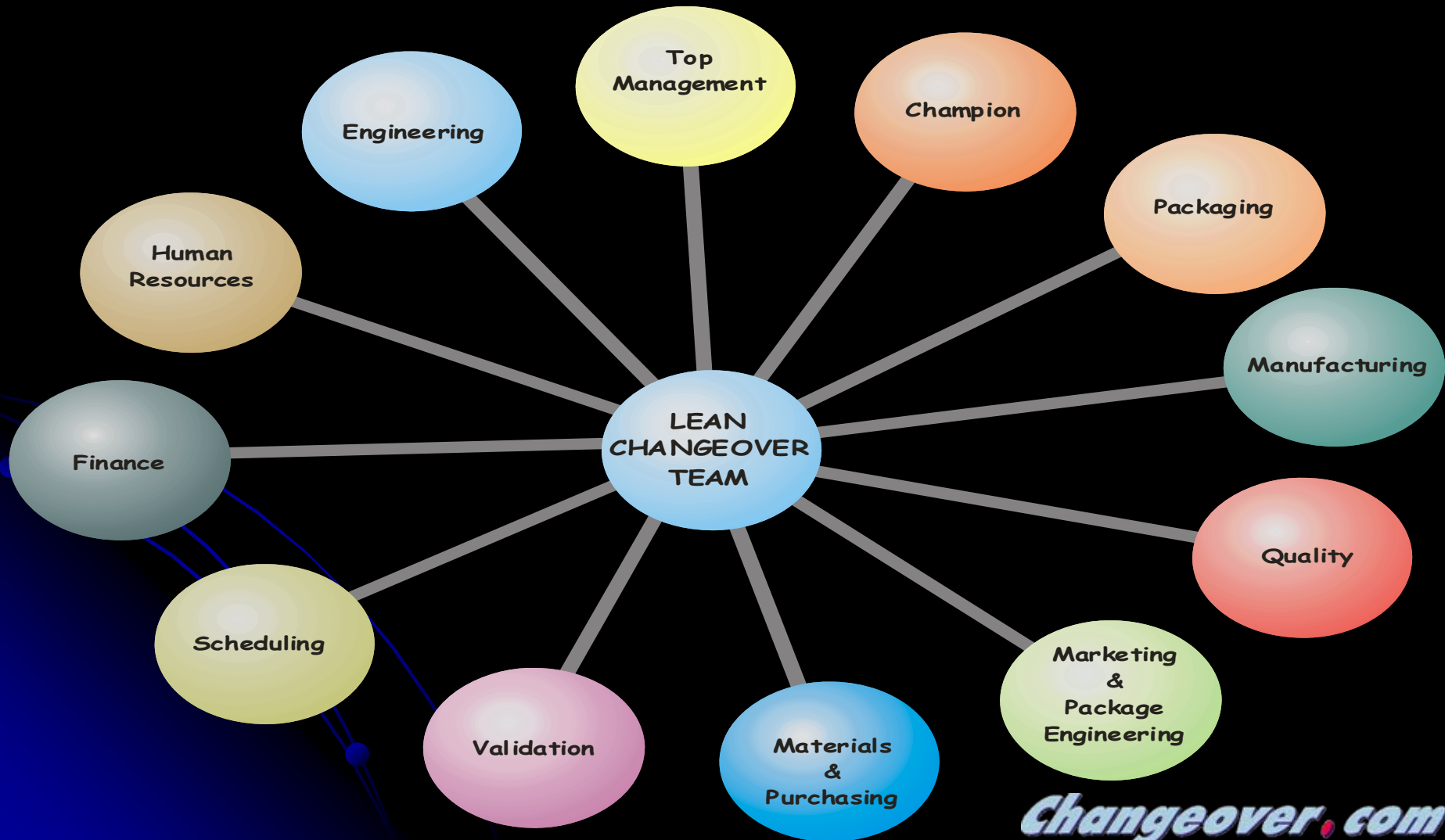
- Costs of changeover downtime must be known
- When benefits are known, costs can be justified
 - Cost of additional reactor vessel = \$100m
 - Cost of 30min/day downtime = \$100m/month
- **1 month payback**

Exactly!

- Changeover must be performed **exactly** the same time after time after time
 - Detailed SOPs + Checklists
 - Measurable adjustments



Players



In closing...

“People of accomplishment rarely sit back and let things happen to them. They go out and happen to things.”

Leonardo da Vinci



