

# Lean Thinking: The Long View

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# What Does Lean Mean?

- Creating more value for customers with fewer resources by eliminating waste! (More value with less human effort, time, capital investment, defects and rework, hassle, injuries, etc.)
- Creating more productive, satisfying and stable work environments for employees. (Lean is not mean!)
- Creating success – profits and growth – for employers/companies.



# Where Did Lean Come From?

- Toyota, beginning in the 1930s.
- Building on earlier European and American efforts – interchangeable parts (France), flow production Ford/US); standardized work (US).
- Complete business system – product and process development, supplier management, production, customer support, general (lean) management – introduced by late 1960s (50 years ago!)
- Lean production and management are successors to craft production with traditional management and mass production with modern management. (Manage by process rather than relationships or results/objectives.)



# World of 1979 in the US and Europe

- Mass production (Ford) with modern management (GM) the world standard.
- Big leap from craft production with traditional management.
- Mass producers still successful.
- Disruption by lean producers just emerging.



# World of 1998 in Brasil

- Mass production – Fiat Belo Horizonte!
- Traditional management in most firms!
- Disruption, starting with Honda motorcycle plant in Manaus.
- But Toyota (Taiichi Ohno himself!) had been perfecting lean production in the Sao Bernardo Land Cruiser plant since 1958!



# World of 2019

- Widespread diffusion of lean tools and methods in many industries – manufacturing, finance, software, construction, healthcare, mining – in many countries including Brasil.
- Most advanced in production followed by product and process development; least advanced in supplier management, customer support and general management.
- Lots of tools and methods; limited lean thinking!



# The World of the Future: The Long View

- My most fundamental point: To spread and sustain lean thinking we need to focus on management and its four key tasks:
  - ✓ Create basic stability in every value-creating process. (With lots of problem solving – temporary countermeasures and permanent countermeasures.) (See Art Smalley's four types of problems.) Create and sustain the standard!
  - ✓ Steadily improve every value creating process. (With lots of kaizen (PDCA) in the context of A3 analysis.) Raise and stabilize the standard!
  - ✓ Periodically rethink value and how to create it. (Hoshin planning with kaikaku.) E.g. Toyota transitioning from making cars to providing mobility!
  - ✓ Steadily increase the capability of every manager and every worker to do the work and improve the work.



# Some Challenges: How to Kaizen Management

- Lean practice is a line management responsibility.
- But is usually approached as a consultant/staff activity.
- Lean thinking depends on steady management – minute to minute (team leader), daily (front-line supervision), periodic (higher-level management.)
- Usually approached as lean campaigns conducted by staffs with heroic senior leaders and little attention to kaizen for management.
- We need more farmers and fewer cowboys; more lean managers and fewer heroic leaders!
- The lean team – continuous improvement, operational excellence, quality, industrial engineering – needs to coach line managers to the point that they can manage and improve every process.





# More Challenges: What to Say About Software

- Software may or may not be “eating the world”, but we need to have a lean message and method or face irrelevance.
- Lean inspired agile and scrum.
- We now need to move to a world of lean software development for:
  - ✓ Massive rather than small packages (e.g., autonomy for cars versus apps for iPhones)
  - ✓ Robustness to avoid interaction effects and unintended harm (e.g., autonomy for Toyotas versus the next revision of Apple’s iOS.)
- Toyota is hard at work on TPS for software development.
- EI&T in Sao Jose dos Campus is leading the way in lean software development for financial services and search!
- How would lean thinkers develop good, lean software?



# More Challenges: Stance Toward Automation

- Lean thinking calls for eliminating waste before automating.
- But we are not opposed to automation in principle.
- The automator's dream is full automation now.
- Experience shows that automation always takes longer and costs more than innovators claim.
- Much experimentation now with “cobots” to help humans with tasks rather than completely replacing them. “Robotics with a human touch.”
- Toyota has been applying karakuri to its production operations: simple devices, without power or software, to supply needed materials to workers who never need to leave their work stations.



# More Challenges: Creating Lean Employers

- The world needs to move from outsourcing, off-shoring, and the obligation-free gig economy, to the steady creation of capability in every employee in stable communities of lean practice.
- Toyota still the model: No layoffs in the Great Recession; continuous capability building in every employee manager (through lean practice.) Employees steadily create more value to protect their jobs.
- For the long term: Work be automated but the planning and improvement of the work will be the indirect work of humans.
- Is there a work crisis? Not to worry just yet – there is always more value to create and remember the demographic curve (and the needs of the planet too)!



# A Final Challenge: Addressing the Environment

- Lean to date has largely decreased the cost and increased the quality of goods and services for individuals. And that's a good thing
- In taking the long view, we see that increasing attention will be needed to community goods, notably the environment.
- Lean is not inherently “green”: If we find ways to reduce the cost of cars by 50% and individuals decide to buy twice as many cars, we may hurt the environment rather than help.
- But, if we find a way to reduce the cost of a current car by 50% by applying lean thinking, we can easily afford to add the new technologies (including for alternative low/no carbon energy) needed to make cars “green”.
- Thus lean's role is to no enable the adoption of environmentally friendly products without consumers paying a penalty in their standard of living.



# Prognosis for Lean Thinking: The Long View

- Who knows? Lean thinkers don't believe in forecasts; instead they shorten lead times! But here's what we do know:
  - ✓ The future depends on you (not me)!
  - ✓ It depends on you creating and sustaining a community of lean practice (inside companies and as associations of professional managers), to share experiments (with A3s), provide courage, and advance more rapidly.
- That's the work for you individually and Disculta Lean collectively.
- I wish you the best with your hard but rewarding work!
- And...if you do great things, I would love to put you in a book!

