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LEAN THOUGHTS

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Principles of Lean

The following is an edit from a discussion thread recently on the NWLean Blog

Michel Baudin of MMTI responds to Mark and attempts to answer some of his questions. "I agree with you that no statements about lean should be treated as gospel. Lean manufacturing is not a religion but an engineering and management discipline strictly based on rationality and scientific methods. Its implementation requires creativity, observation and experimentation, but not faith. Taiichi Ohno, Shigeo Shingo, Sakichi and Kiichiro Toyoda were human beings, not gods, and nothing they did, said or wrote should be treated as sacred. The proper way to show them respect is to study and review their work critically, but not to revere it.

The pillars and other metaphors were just devices they came up with to organize and communicate what they had done to their growing work force. Our needs are different. Among other things, we need principles to figure out how to implement lean

manufacturing in industries other than cars, such as, for example, frozen lasagna. Many of the specific tools that Toyota developed over the years to solve its car making problems are not applicable to frozen lasagna. To find out what lean manufacturing means for frozen lasagna, you need to abstract underlying principles from car-specific tools, and then redeploys these principles in the form of other tools that apply to frozen lasagna.

With this purpose in mind, I have found the following principles actionable:

1. **People are the main driver of productivity.**
2. **The key to profits is on the shop floor.**
3. **All manufacturing is repetitive.**
4. **The work must flow through the shop.**
5. **Improve, don't optimize.**

This was the short version. Now, for further explanation:

1. **People are the main driver of productivity.**

In some industries, such as semiconductors, many executives refuse to consider that the way operators are used on the shop floor matters. To them, people are cheap compared to equipment, and they are ready to use more than necessary as insurance that the equipment will keep running. The fact is that even expensive equipment is easier to replace than the people who know how to program, run, and troubleshoot it. ***A competitive advantage does not come from the possession of equipment but from excellence in using it, and this requires taking advantage of everything people have to offer, both muscles and brains.*** This requires them to feel trusted, respected, and challenged, which does not happen if they are treated like a disposable commodity and underutilized. The right pace and variety of work, engaging the individual without burning him or her out, impacts both productivity and quality.

2. **The key to profits is on the shop floor.**

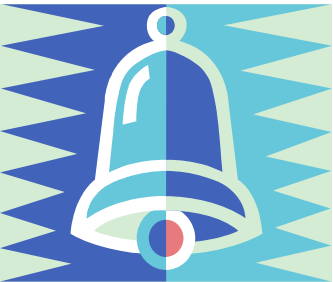
Again, many executives will disagree with this statement, on the grounds, for example, that getting a product to market first is more important than making it cheaply. Their mistake is to assume that it doesn't matter how the shop floor works ... *next page*

LEAN CONSORTIUM MEMBERS:

- CFN Precision
- CGL
- CTS Canada
- EATON Cutler Hammer
- KRAFT
- LA-Z-BOY- Residential
- MESSIER-DOWTY
- MORRISON LAMOTHE
- ORENDA
- NESTLE WATERS CANADA
- STACKPOLE



Where "Lean Thoughts" Become Reality



when your objective is fast time to market for new products. As much care is needed to set up a factory that will whisk through new products effectively as to reduce the production costs of a mature product. Waste does not usually take the form of big lumps that can be trimmed away, but rather is "marbled" through the manufacturing process, and can only be eliminated by paying attention to what happens at every step. Attention to shop floor detail is a strategy.

3. All manufacturing is repetitive.

This too is controversial. "We make to order and every unit is custom-engineered," we hear. But when we dig into the process we find that all units are identical until the last operation and customized only then. In all manufacturing operations, there is some form of repetitiveness, which may not be obvious but must be sought out in process design. Being flexible, or agile, means being able to make whatever customers want, but it does not require the manufacturer to be actually able to make what anybody might order. It is sufficient to make what customers actually do order. Most of them order from a small range of options, that you produce repetitively on lines dedicated by product or product family, and for the few who actually order specials, you set up a separate, small-scale job-shop. Taking advantage of the structure of the actual demand enables you to appear infinitely flexible without incurring the cost of being so.

4. The work must flow through the shop.

The equipment and layout must be designed around the flow of work through the shop and not the other way around, to eliminate the "hurry-and-wait" pattern for materials and the "stop-and-go" pattern for equipment and people. You must match actual production rates at each operation to the Takt time, and move work between operations one piece at a time or in small lots with frequent setups. Transfers of parts from suppliers or between lines within the plant must be on a "pull" and not a "push" basis.

5. Improve, don't optimize.

Engineers are trained in school to seek optimal solutions. The optimum, however, only exists within a mathematical model, and once you have reached it, by definition, no further improvement is possible. On the shop floor, there is no optimum and no limit. You can and should always improve operations, right up until the plant closes. I am curious to know what other lists of principles members of this group have come up with".

Be Yourself

A pastor entered his donkey in a race and it won. The pastor was so pleased with the donkey that he entered in another race and it won it also.

The local paper read:
PASTOR'S ASS OUT FRONT.

The Bishop was so upset with this kind of publicity that he ordered the pastor not to enter the donkey in any more races.

The next day the local paper headline read:
BISHOP SCRATCHES THE PASTOR'S ASS.

This was too much for the Bishop, so he ordered the pastor to get rid of the donkey. The pastor decided to give it to a nun in a nearby convent.

The local paper, hearing of the news, posted the following headline:
NUN HAS THE BEST ASS IN TOWN.

The Bishop fainted.

He informed the nun that she would have to get rid of the donkey so she sold it to a farmer for \$10.

The next day the headlines read:
NUN SELLS ASS FOR \$10.

This was too much for the Bishop, so he ordered the nun to buy back the donkey and lead it to the high plains where it could run free.

The next day the headlines read:
NUN ANNOUNCES HER ASS IS WILD AND FREE.

Alas the Bishop was buried the next day.

MORAL OF THE STORY???

Being concerned about public opinion can bring you much grief and misery and even shorten your life. So, be yourself and enjoy life. Stop worrying about everyone else's ass and you'll live longer.

Tour Workshop Conference
 Consortium Event Schedule



January	February	March	April	May	June
<p>T</p> <p>Wednesday 25 Eaton Electrical, contact Joe Fisher, JoeRFisher@eaton.com</p>	<p>T</p> <p>Wednesday 15, CFN Precision, contact Barry Wood, bwood@cfn-inc.com</p> <p>W</p> <p>Date & location TBA Your own "STEP Diagnostic" to create Vision, Mission and Direction Contact Richard Kunst Richard.kunst@la-z-boy.com</p>	<p>T</p> <p>Wednesday 22, Nestle Waters, contact Mariela Castano mcastano@perriergroup.com</p>	<p>T</p> <p>Wednesday 19, CTS Corp., contact Bob Garces, Bob.Garces@ac.ctscorp.com</p> <p>Consortium Shareshowcase Saturday 29 Kraft Oakville. Contact Cindy Grolleman cindy.grolleman@stackpole.com</p>	<p>T</p> <p>Wednesday 17, Stackpole CSD, contact Don Barber Don.Barber@stackpole.ca</p> <p>W</p> <p>Date & location TBA "Compartmentalize the Noise" * Daily Report-outs * Standard work for Leaders Contact Richard Kunst Richard.kunst@la-z-boy.com</p>	<p>T</p> <p>Wednesday 21, Morrison LaMothe, contact Tony Vita tvita@morrisonlamthe.com</p> <p>C</p> <p>AME Regional Conference Mon 12 to Thurs 15 K-W Ontario Contact www.ame.org</p>
July	August	September	October	November	December
	<p>W</p> <p>Date & location TBA "Establish Anchors" * VSWI ... Visual Work Instructions * TPM ... Total Productive Maintenance Contact Richard Kunst Richard.kunst@la-z-boy.com</p>	<p>T</p> <p>Wednesday 20, Kraft Foods, contact Hanif Jivraj hjivraj@Kraft.com</p>	<p>T</p> <p>Wednesday 11, Stackpole PMC, contact Cindy Grolleman cindy.grolleman@stackpole.com</p> <p>C</p> <p>AME National Conference Mon 16 to Friday 20 Dallas, Texas Contact www.ame.org</p>	<p>T</p> <p>Wednesday 15, Messier-Dowty, contact Mike Smith Mike.Smith@Messier-dowty.on.ca</p> <p>W</p> <p>Date & location TBA Your own "Get Organized" * 5S+1 Contact Richard Kunst Richard.kunst@la-z-boy.com</p>	