April 23, 2007
Volume 6, Issue 15

LEAN THOUGHTS

Richard Kunst
Tel: 519 590 9944
E-mail: Richard.Kunst@La-Z-Boy.com

SOME THOUGHTS ON...

ISHEKAWA CHARTS

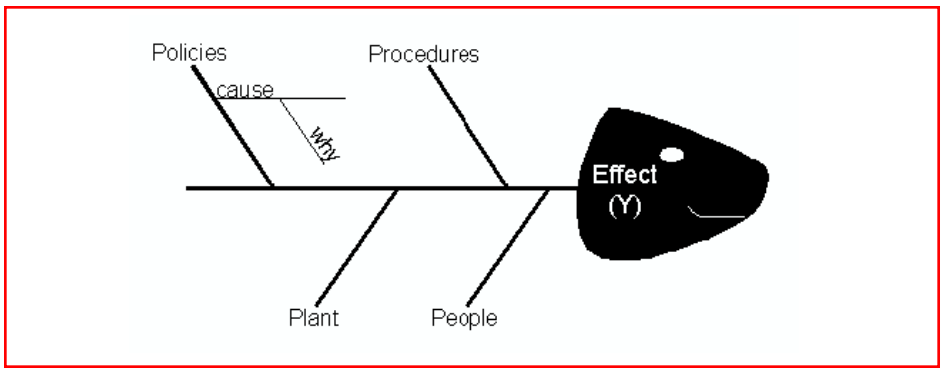


Figure 1: Fishbone Diagram Example

The Ishekawa Chart is sometimes called a Fishbone chart or diagram. It is a simple yet powerful tool for identifying the potential sources of problems. One form has a horizontal line naming the problem at the right. Four lines branch off at 45 degree angles with major groups of possible causes of the problem. These are labeled "Machine", "Method", "Man" and "Material".

Each of the angled lines has horizontal lines running to the left or right detailing possible causes.

As an example, let us consider a rotary capper such as a Consolidated or Pneumatic Scale. Let us assume that the problem is that caps are not being tightened consistently. The major horizontal line would be labeled "Inconsistent torque".

Branching off the horizontal at about a 45 degree angle would be category lines or "bones". There should be at least 4 labeled Man, Machine, Materials and Method. In some cases there might be more than four, say for environment.

A series of horizontal lines then comes off each of the bones. All possible causes are listed on those lines.

All possible causes of the inconsistent torque would be listed in oneof the four categories.

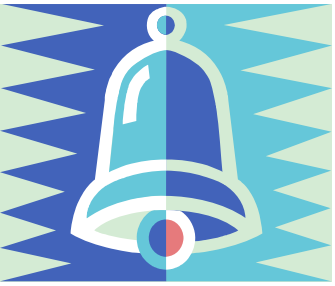
The "Materials" bone will list such potential causes related to materials or components. Examples could include:
-Deformed bottles
-Oversized caps
-Excess mold release on the bottle or other causes
-Poor quality glue

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



"Man" related issues include anything related to or caused by personnel operating the machine. This can include
-Improper setup or cleaning prior to the production run
-Failure to keep the machine clean during the run
-Improper technique in checking the cap torque. In other words, the torque might be appear to be inconsistent but the problem is that the
operator is not checking it properly.

"Machine" can cover a wide range. It is important to remember that it is not only the capper itself but includes anciliary equipment as well. Machine problems include:

-Damaged or worn parts
-Vibration
-Overheating
-Damaged toque tester. The torque may be OK but the tester may be
indicating a problem.

"Method" includes all problems related to the way in which the capper is operated:

-Speed may not be properly set. This could be a setup problem or it could be a problem of the operator varying the speed during operation.
-The speed of other machines up and downstream may not be properly set causing problems with the capper
-Over or underfilling the cap hopper can sometimes cause problems.

The above is meant to be illustrative not definitive. Those of you will cappers will probably identify some things I have left out or never experienced some of the things I mentioned. The Ishekawa chart needs to be tailored to each piece of equipment as well as each major problem.

There is also an issue of where to catagorize things. Is improper setup an "man" or a "methods" item? It could be classed as either or both. It could even be categorized as a "machine" problem if the machine does not readily lend itself to repeatable setups.

The best time to develop an Ishekawa chart is either before or after a problem occurs. A way to approach this is to develop a blank chart template. A series of templates would be prepared for each machine. To continue with our capper example, a series of blank charts would be prepared with one each for "Inconsistent Torque", "Bottle Jam", "Bottle breakage" and other major problems.

Some of the items could be filled in ahead of time simply by talking with the mechanics and operators. To the extent that this can be done, great. The charts should also be viewed as a work in progress. That is, as new problems arise, they should be added to the charts. The charts should be kept in close proximity to the machine to allow ready access when troubleshooting.

In my experience, a lot of time is spent reinventing the wheel in troubleshooting. A tool like the Ishekawa chart provides a means of capturing the information and providing a starting point the next time
a similar problem occurs.

Reprinted from the April edition of Quick Changeover
http://www.changeover.com

Hey, working at GE is not for everybody – But what can we learn from them? The answer is… all we want to. The 'leadership engine' written a few years ago by Noel Tichy, introduced the concept of Jack Welch's leadership producing engine at GE. It became more credible, when it was revealed that Jack was putting 'his action where his words were' as he was the only CEO in the list of 500 top Fortune companies who spent 30% of his time on staff development – good old employee development and growth. No other leader came close. While Jack's legacy is still evolving, the succession plan he engineered to replace himself is looking more credible with every victory of his successor, Jeff Immelt. Jeff just rang up an 8% profit improvement this year as markets tighten.

Take the time to look at the wisdom below about the lessons learned in process improvement – and extract what you feel could work for you - from the leaders at the locomotive works in Erie PA:

GE 'lessons learned'… *on the road to process improvement*

- **Stay steadfast and focused,** with a balanced and flexible approach to process improvement and a long-term strategic perspective.

- **Make transformation visible** and work extra hard to build enthusiasm and engage all levels of the organization; and, in fact, encourage leaders to demand more of themselves and their teams.

- **Recognize that cultural change will likely be more difficult than the technical challenges.** Shifting the way employees view and do their work is critical. Since they are the ones closest to the process, give them a voice in our efforts to achieve and sustain meaningful improvement.

- **Align process work to improve the quality and speed of "customer facing" processes**. This will require us to work across functions and sites in different ways.

- **Demonstrate business impact quickly**, developing "showcase" projects/models within our own company that deliver breakthrough bottom-line results.

Consortium Event Schedule

Tour Workshop Conference

January	February	March	April	May	June
T **Wednesday 24** **Eaton Electrical,** contact Joe Fisher, JoeRFisher@eaton.com **W** **La-Z-Boy Corporate Monroe MI** **February 14 & 15** **Enterprise Value Stream Mapping** **How to use the VSM tools to map admin processes.** Contact Richard Kunst for info. Richard.kunst@la-z-boy.com Register at www.ame.org	**T** **Wednesday 14,** **CFN Precision,** contact Paul Kaulback, pkaulback@cfn-inc.com	**T** **Wednesday 21,** **Nestle Waters,** contact Mariela Castano mcastano@perriergroup.com	**T** **Wednesday 18,** **CTS Corp.,** contact Bob Garces, Bob.Garces@ac.ctscorp.com **C** **Lean Design & Development Conference** **Wed 18 to Fri 20** Chicago Contact www.iirusa.com/lean	**T** **Wednesday 16,** **Stackpole CSD,** contact Don Barber Don.Barber@stackpole.ca **Consortium Shareshowcase** **Saturday 05** **CGL Guelph.** Contact Cindy Grolleman Grolleman@canada.com or Dave Deskur daved@cglmfg.com	**T** **Wednesday 20,** **Morrison LaMothe,** contact Tony Vita tvita@morrisonlamthe.com **C** **AME Regional Conference** **Mon 18 to Thur 21** Edmonton, Alberta Contact www.measureupforsuccess.com
July	**August**	**September**	**October**	**November**	**December**
		T **Wednesday 26,** **Kraft Foods,** contact Hanif Jivraj hjivraj@Kraft.com	**T** **Wednesday 10,** **CGL Manufacturing** contact Dave Deskur daved@cglmfg.com **C** **AME National Conference** **Mon 29 to Friday Nov 2** Chicago Contact www.ame.org	**T** **Wednesday 14,** **Messier-Dowty,** contact Mike Smith Mike.Smith@Messier-dowty.on.ca	**T** **Wednesday 12,** **Orenda,** contact Brenda McIntosh brendamcintosh@orenda.com