

Introduction to Lean Thinking



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INTRODUCTION TO LEAN THINKING

Program:

- Introduction to the Lean Thinking philosophy;
- Evolution of the concept (from the *TPS* to *Lean*);
- The concept of *Value* and *Waste*;
- The seven principles of Lean Thinking and its application;
- Challenges and opportunities associated;
- Analysis of case studies.



INTRODUCTION TO LEAN THINKING

Extension:

- 14 hours

Method:

- Thematic exhibitions and discussions, practical exercises to illustrate the methods presented, analysis of case studies and analysis of situations presented by participants. Completion of practical work.

Course aims:

- Understand the role of each one in value creation, understand the need to think lean and implement practices that can reduce waste and create value.

PRESSURE FROM THE MARKET PLACE? **WHAT PRESSURE?**





"Let's stop and think. There must be an opportunity in this somewhere."

HIDDEN OPPORTUNITIES

- On average, 40% of the costs in any business is pure waste. Eliminating this waste allows the business to become more faster and flexible in the market, and reduce costs;
- We currently have an operating model, with techniques and tools well established that under the name of ***Lean Thinking***, help improve the overall efficiency of the Organization;
- For this opportunity to come true it requires to be done with people. Therefore, we need to attract, prepare, commit, deploy, and compensate people as they are a key element.



What Toyota says:

“We get brilliant results, with normal people, operating processes brilliantly.

... but many companies get mediocre results, with bright people in inadequate operating procedures.”

Toyota Executive, 2003



What is

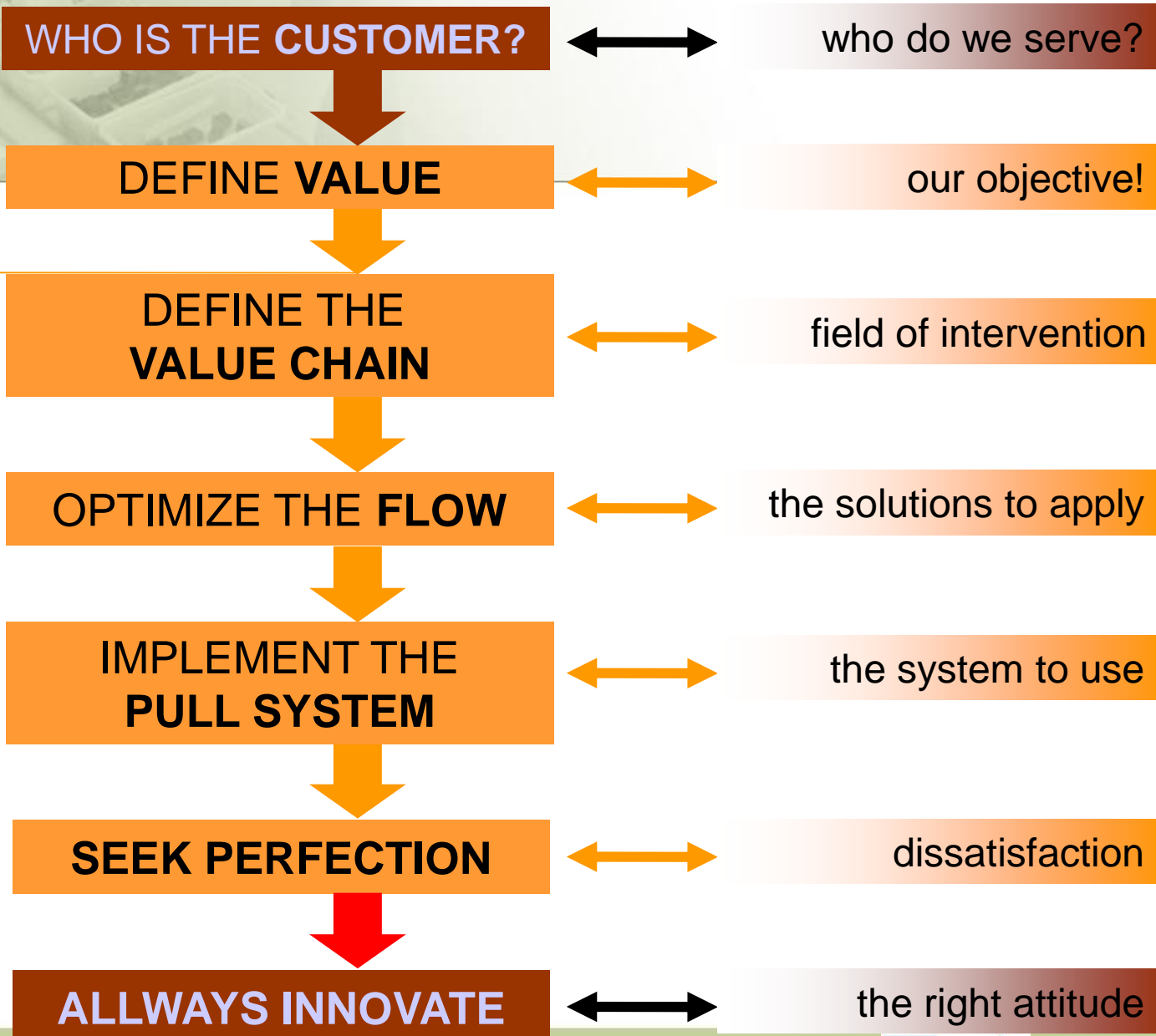
**LEAN
THINKING**



LEAN THINKING

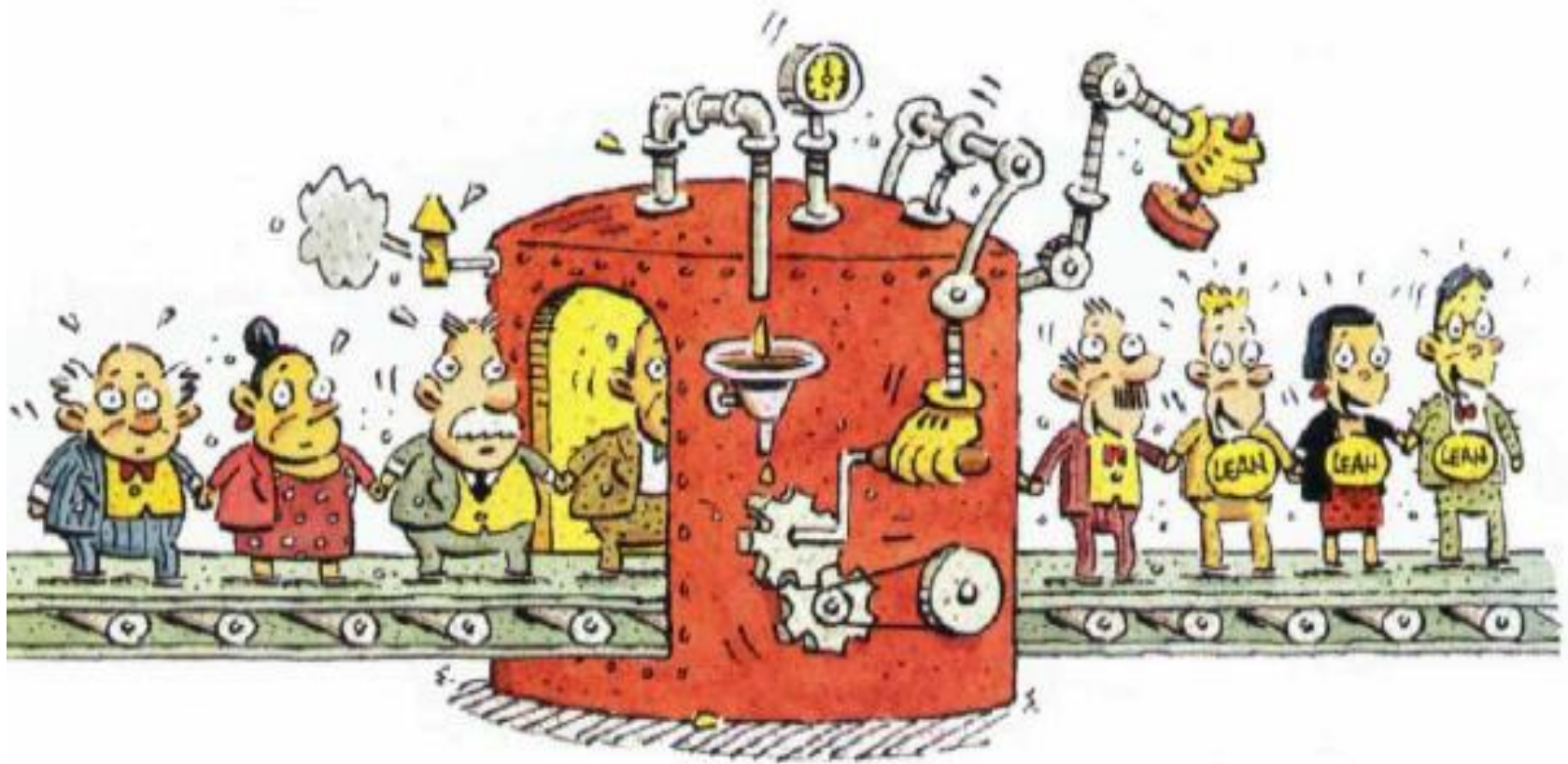
- The philosophy of **LEAN THINKING** has emerged as a management system whose objective is to develop processes and systems with a view to eliminating **waste** throughout the organization and creating **value** for all stakeholders;
- The term Lean Thinking was first used by James Womack and Daniel Jones in his reference work (Reprinted in: 2003);
- It is a new management paradigm based on simple and immutable principles. It is a challenge for all organizations (applicable to public institutions or private, or nonprofit);
- The emphasis is on customer satisfaction (final customer).

THE REVISED LEAN THINKING PRINCIPLES

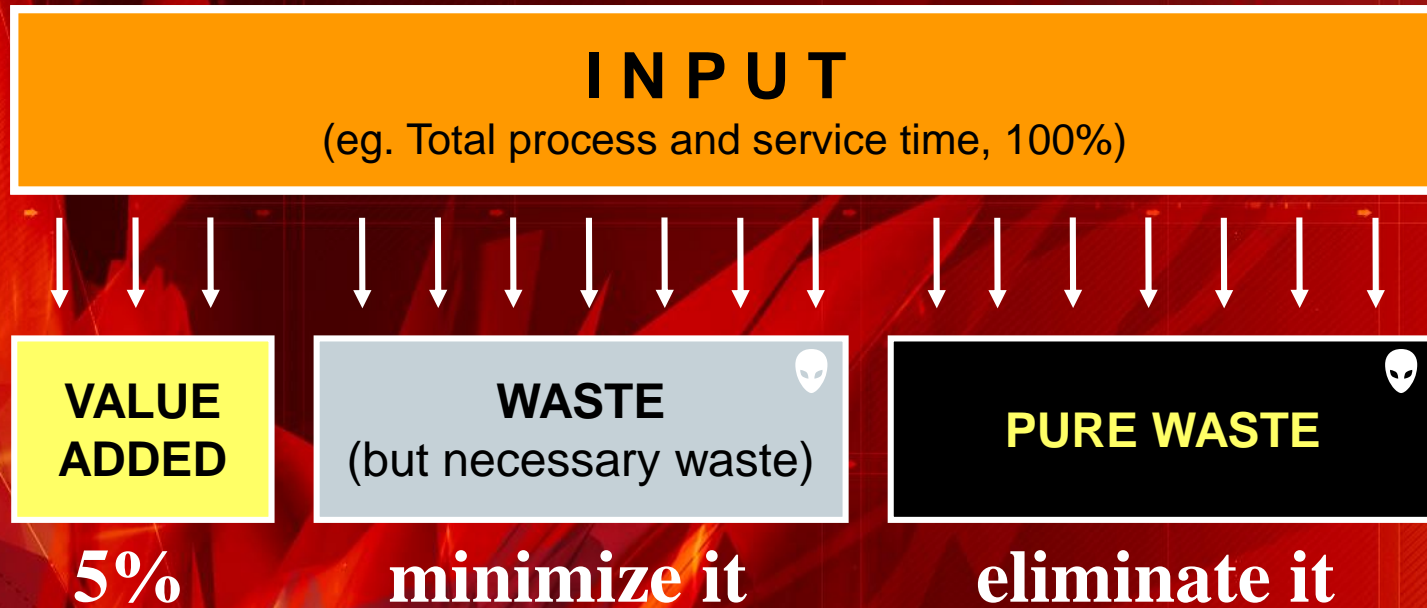


LEAN THINKING

The process of "clean" processes and people, ...



In organizations, only a small percentage of the activities adds value. The majority (> 90%) are wasted and as such should be eliminated.



Let's be **proactive!**

It is no longer 95% of waste, but 95% of improvement **opportunities!**



Controls



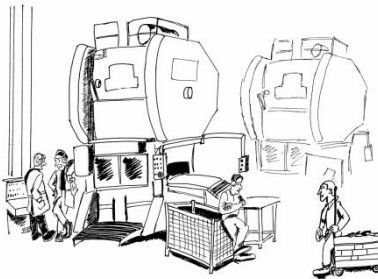
Excess of activities



Rework



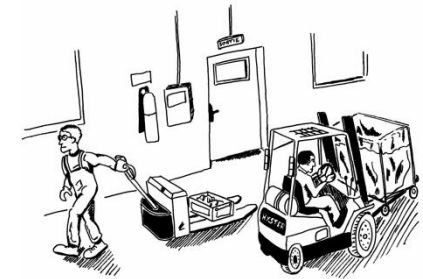
Stock



Machine failure



Movements



Transports

IS THIS FAMILIAR TO YOU?



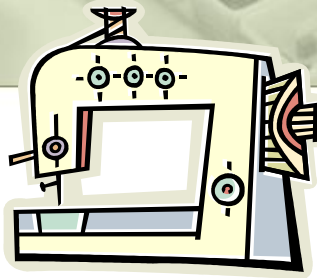
THE FAT IN ORGANIZATIONS

- In its day-to-day basis, lots of activities take place which are classified as waste (*muda* in Japanese terms);
- **How many of us do not do in perfection what is no need to be done?;**
- Who does not keep its people employed just for that, to keep them occupied?;
- This means more resources to produce and serve the same;
- The **fat** in organizations makes them sick, heavy, slow and low productivity not being able to generate wealthy for the society
- Just lean and agile organizations have opportunities to survive.

SIMPLE TOOLS SOME TIMES HARD TO IMPLEMENT

- **Scientific Method;** ;
- **Genchi Genbutsu** (go and see for yourself);
- **5W2H** (*what, why, who, when, where, how, how much*);
- **PDCA/SDCA** (*plan/standardize-do-check-act*);
- **3M** (*Muda, Muri e Mura*);
- **5(+1)S**;
- **7 classic quality tools**, ex:
 - Flow chart and Histogram;
 - ABC analysis (Pareto) and Ishikawa diagram;
- **TOPS/8D**
- **VSM** (*value stream mapping*);
- **Hoshin Kanri** (*policy deployment*).
- [...]

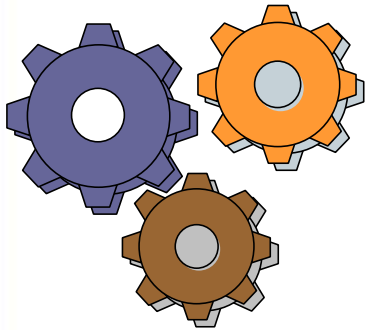
HOW TO BECOME LEAN...



Equipment



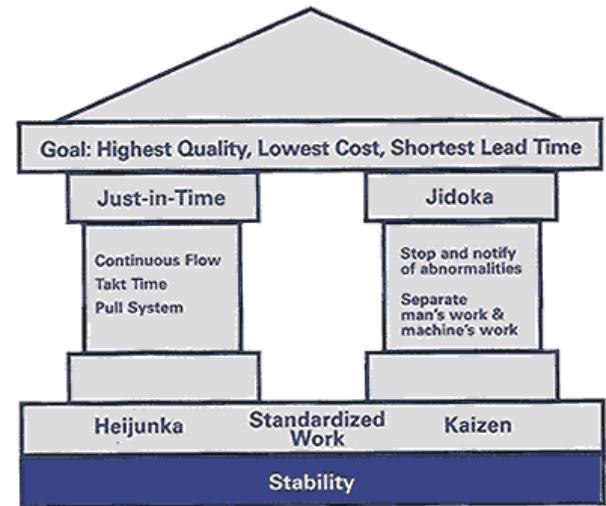
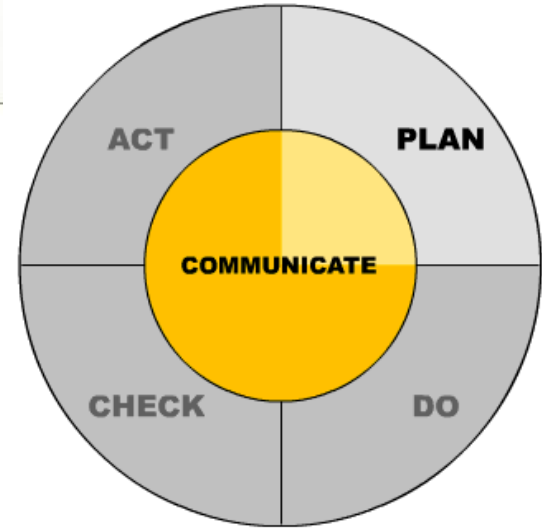
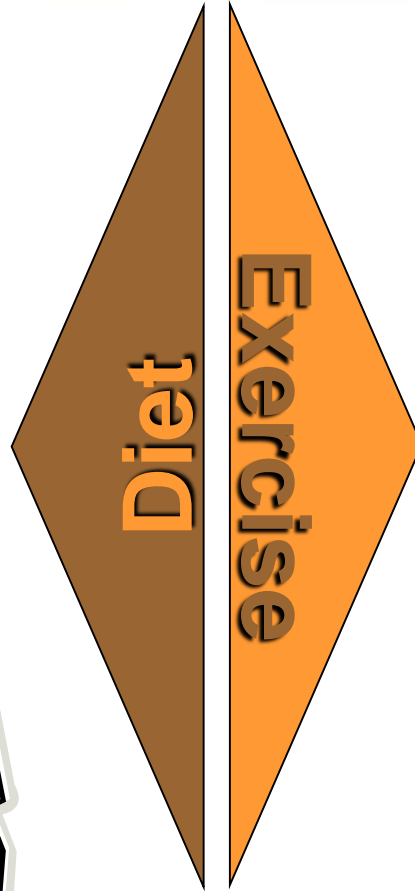
People's time



Materials/Parts



Space



THE TPS HOUSE

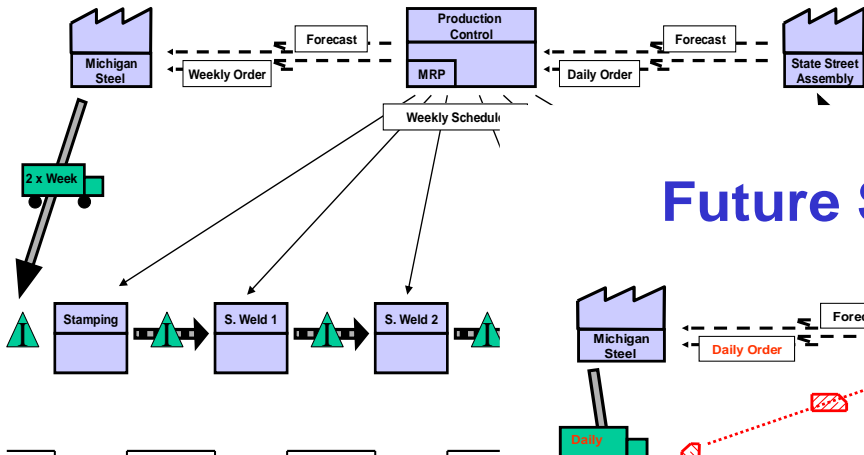
AREAS OF INTERVENTION



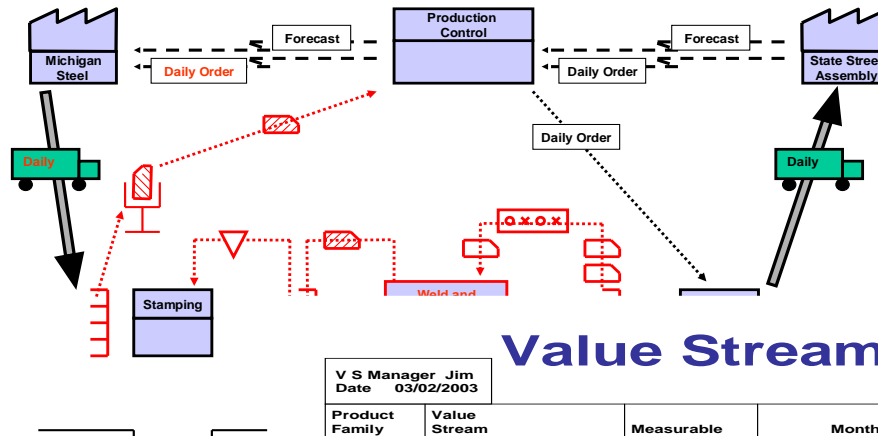
HOLISTIC AND COLLABORATIVE APPROACH TO ALL VALUE CHAIN

AND NOW?
FROM WHERE WE START?

Current State Value Stream



Future State Value Stream



Check progress and stability

Value Stream Plan

V S Manager Jim Date 03/02/2003		Product Family Steering Brackets							Person in Charge						
Product Family Business Objective	Value Stream Objective	Measurable Goal	Monthly Schedule												
			1	2	3	4	5	6	7	8	9				
Improve Profitability In Steering Brackets	Pacemaker *Continuous flow from weld to assembly *Kaizen to 168 secs *Eliminate weld changeover *Uptime weld #2 *Finished goods pull *Materials handler routes	Zero WIP < 168 s/t < 30 sec c/o 100% 2 days FG Pull Schedule	█	█	█										John Dave Sam Mike Sue James
	Stamping *Stamping Pull *Stamping changeover	1 day inventory + pull schedule batch size 300/160 pieces c/o < 10 min					█	█	█						Fred Tim
	Supplier *Pull coils with daily delivery	daily delivery < 1.5 days of coils at press											█		Graham

Make the right questions!

EXPECTED RESULTS

- Reduction of **lead time** 70-90%;
- Reduction of **cycle time** 50-80%;
- Reduction of **response times** > 75%;
- Reduction of **product development** 70%;
- Reduction of **quality costs** 80%;
- Reduction of **footprint** 30-50%;
- Reduction of **operating costs** 50%;
- Improvement in **customer service** > 90%;
- Improvement in **participation and morale of the people**;
- **Increase productivity** 15-55% per year;
- Reduction of **stocks** (ex. WIP) > 70%;
- Improvement on **investment return** > 90%.

**ANY SIMPLE PROBLEM CAN
BECOME INSOLUBLE AFTER
A REASONABLE NUMBER OF
MEETINGS**

It is your choice..

KEEP IT SIMPLE, THINK LEAN!