



13 & 14 october, 2011

Paris, France

Kaizen spirit in design work

Dr Michael Ballé



Kaizen spirit in design work

Dr. Michael Ballé

The lean perspective

- If you focus on producing value for your customers and engaging your people in eliminating waste
- Sales will go up
- Profit and cash will increase sustainably

Lean is built on mutual trust

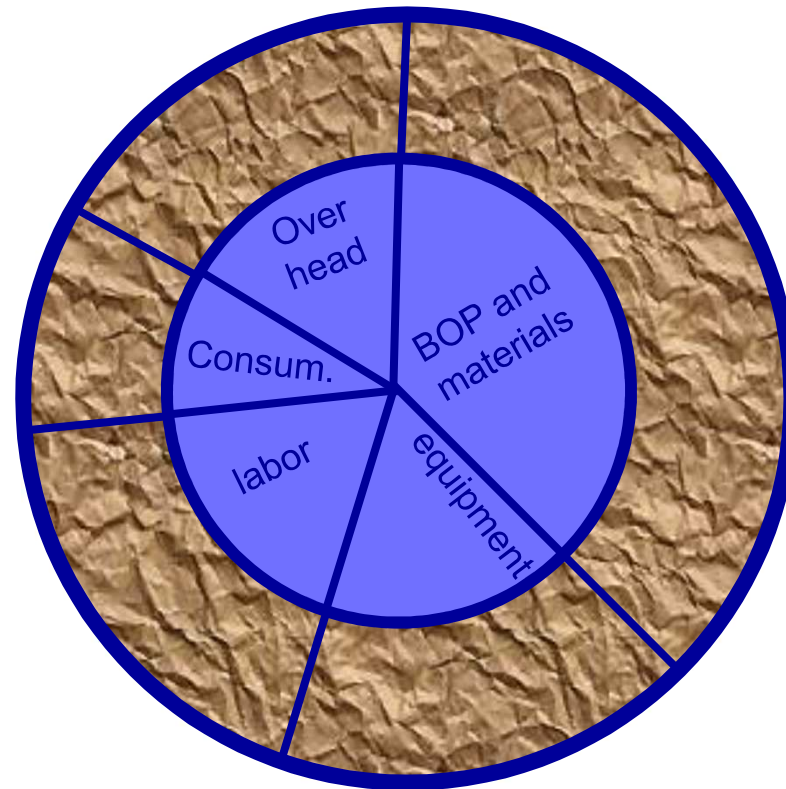
- Trust from customers that your products will give them complete satisfaction, reliably at a good price
- Trust from employees that they will work in a safe and stable environment, where they have an input on running and designing the workplace

LEAN = KAIZEN + RESPECT

KAIZEN = Improving our own work step-by-step to better understand technical processes and make smarter decisions

RESPECT = Taking into account people's opinions and supporting them to succeed in their own work and in working with others in the value chain

Kaizen is eliminating waste



Waste is all the unnecessary cost created
by our wrong ideas and wrong decisions

Design work generates waste

CUSTOMERS:

Added cost for customers when the product doesn't solve their problem completely or when they have to compensate, fix and maintain it

MANUFACTURING:

Added cost to the manufacturing process in terms of Bought Out Parts (weight and supply chain), oversized investment to realize the product and unnecessary labor because too difficult to assemble

ENGINEERING:

Misunderstandings that generate conflict, long feed-back loops and reworks, unsolved problems that pop up right at start of production and, in the end, technical solutions that don't satisfy customers or manufacturing

Ahh!

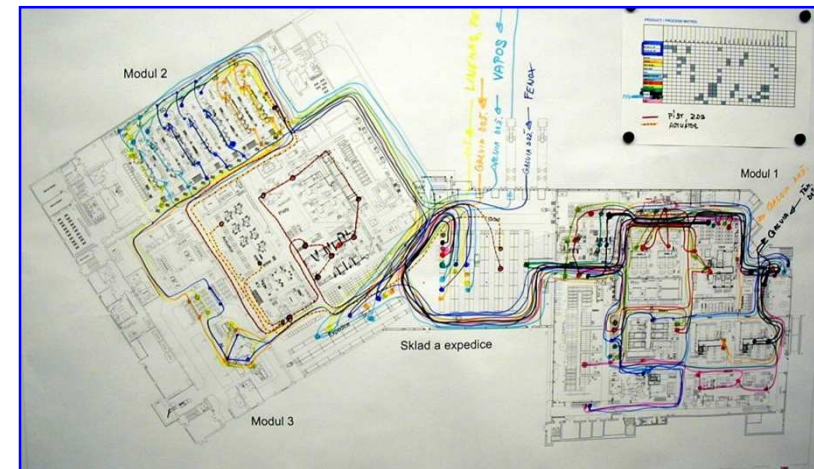


GRR!

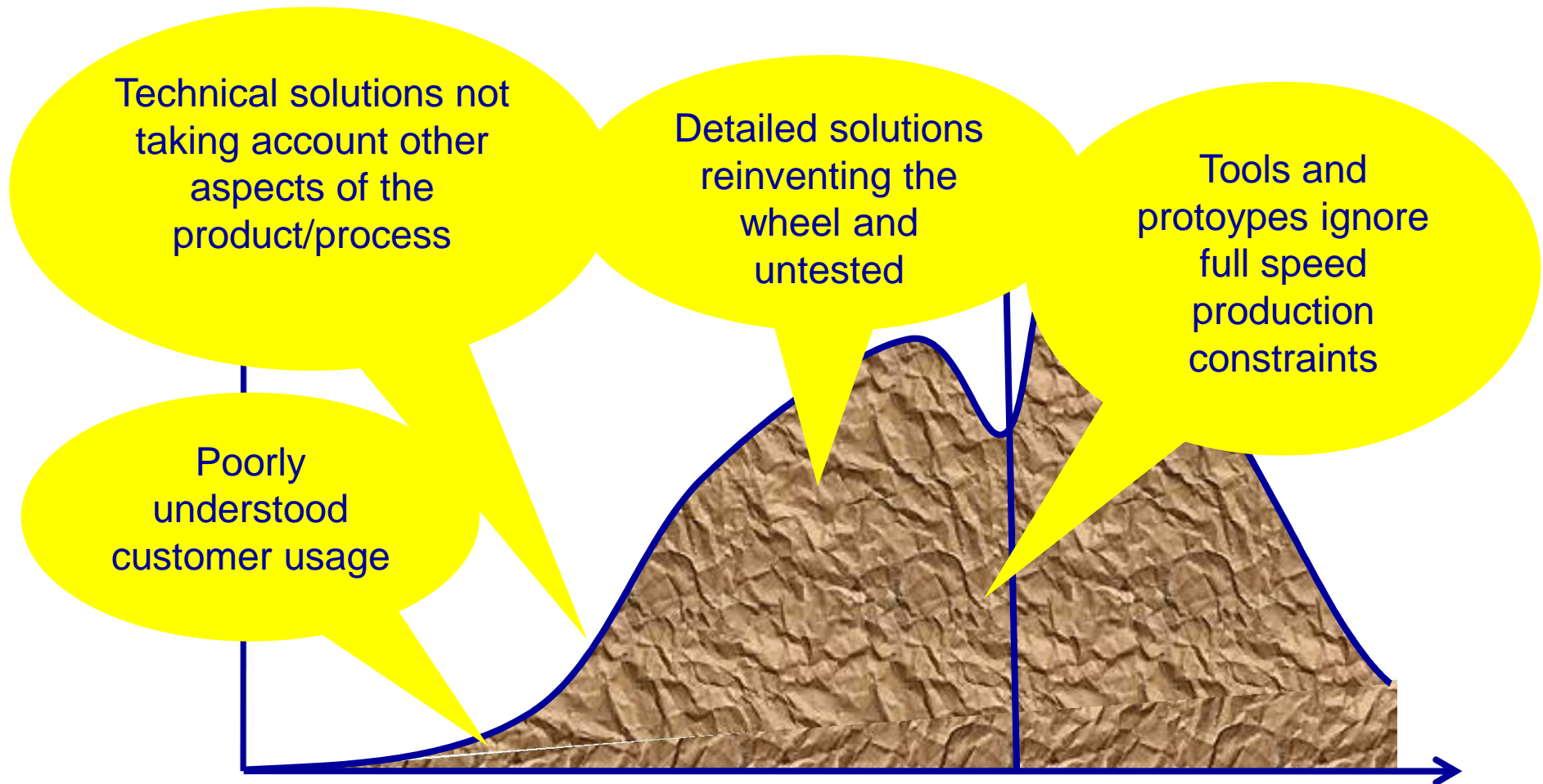


MANUFACTURING

- Too many expensive parts
- Too many difficult operations
- Over-complex, over-sensitive technical processes
- Over-complex flow
- Over-complex supply chain

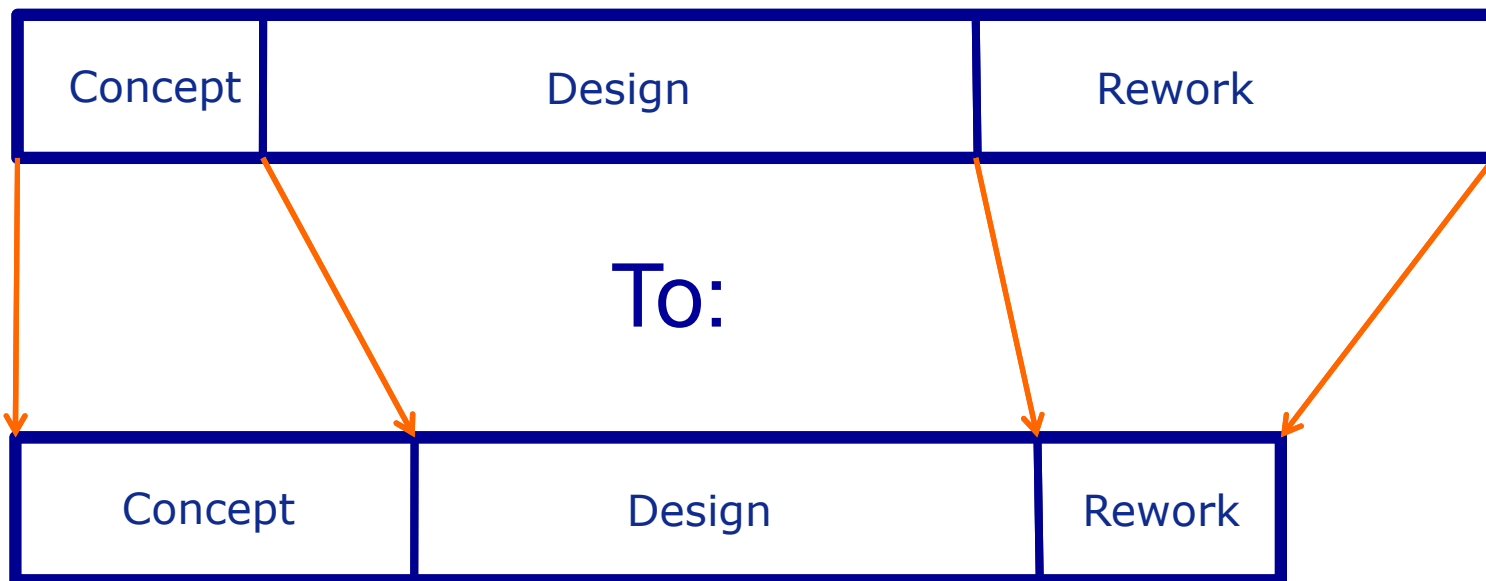


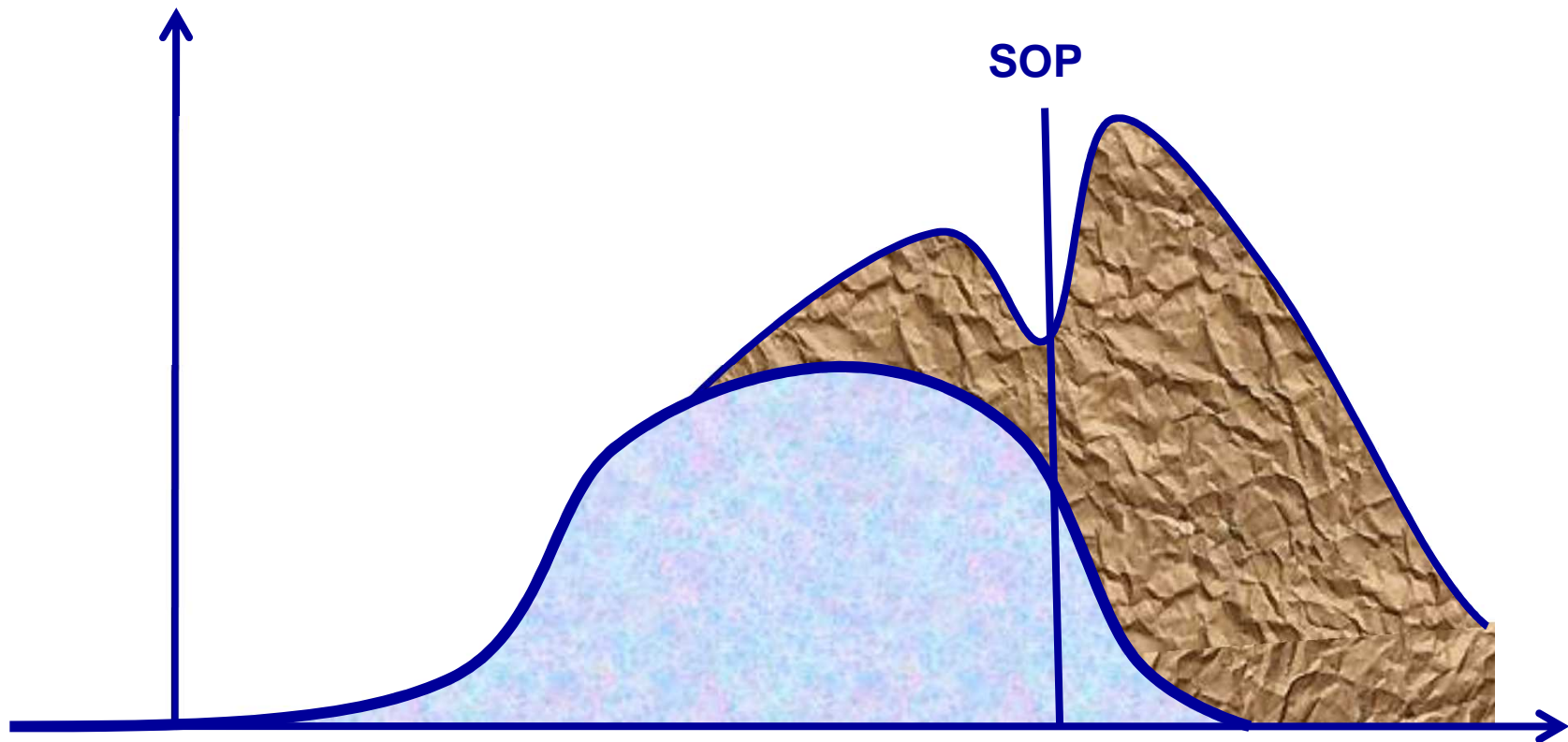
ENGINEERING



Lean design strategy

From:





Sure, but HOW?

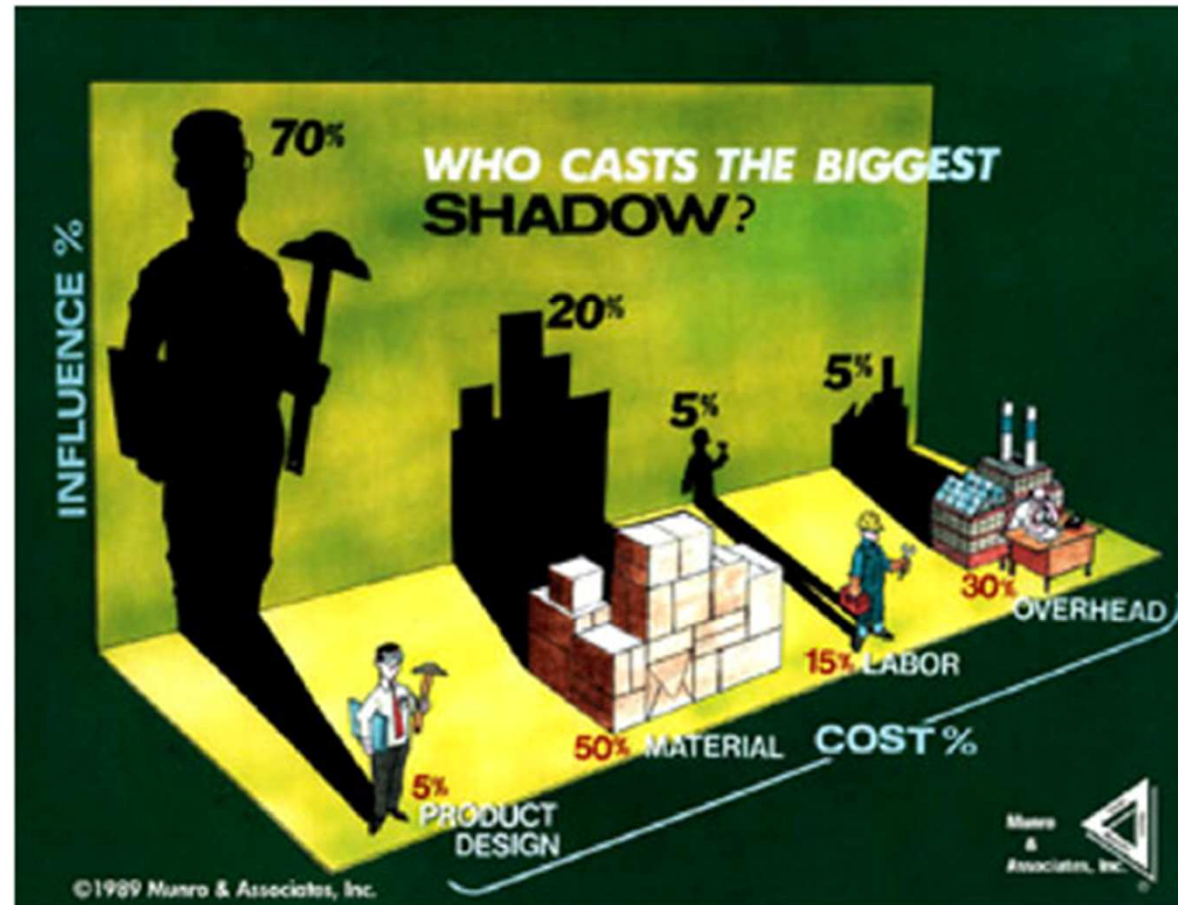
JOB = WORK + KAIZEN

Kaizen gets people thinking

About the waste THEY create
because of their technical
choices

About what to challenge and
what NOT (standards)





Looking for waste

**I learn to analyze
my own work in
detail**

**To better
understand the
waste I generate
for others**

**Root cause
problem solving
teaches me to
think deeply
about my work**

**And to better
work with others
to solve design
problems**

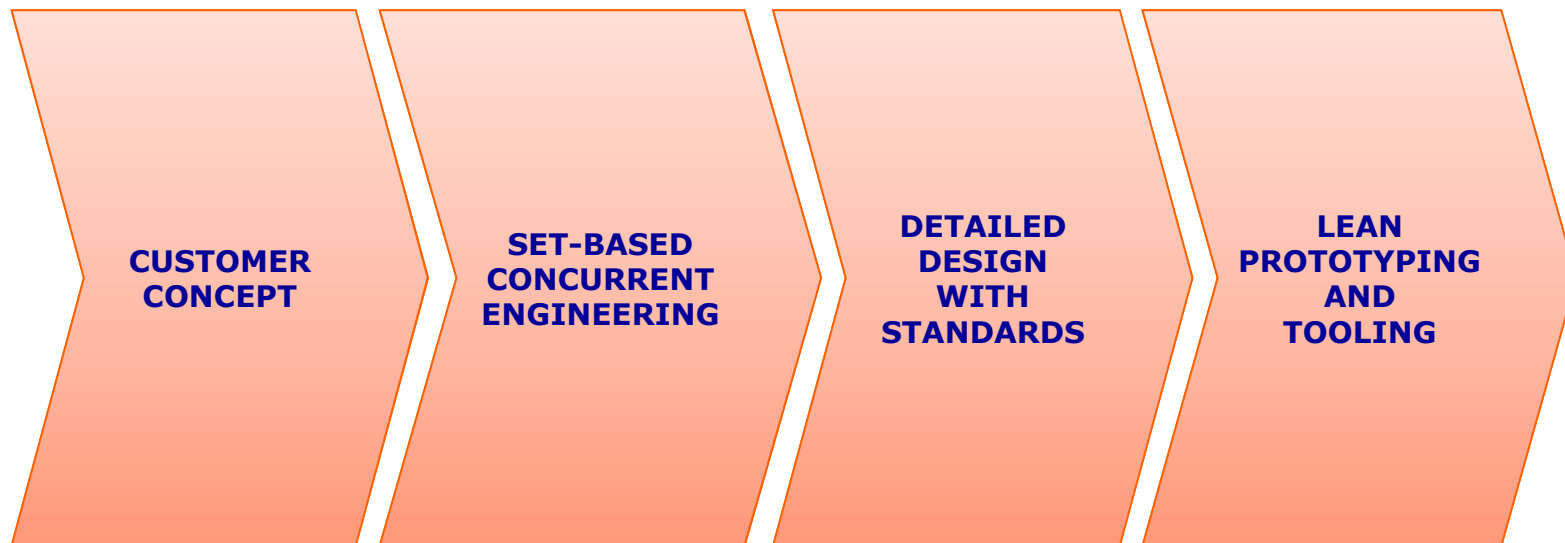


Kaizen tools



- Kaizen tools are analytical tools to help recognize waste
- Summarize problems as gaps to standards
- Investigate the root cause
- And study our countermeasures

Four phases



Takt time

What is the product
takt time? The
innovation takt time?
Where do we want to
take the product?



Concept paper

Our target customers want
to solve their -----
problems:

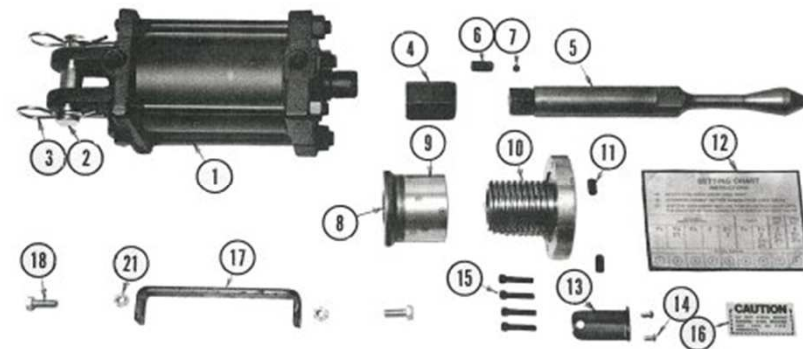
How well do we
understand our
customers?

They want	YET:
Light	Strong
Fast	Quiet
Many features	Handy

What will be our key
technical and
organizational challenges?

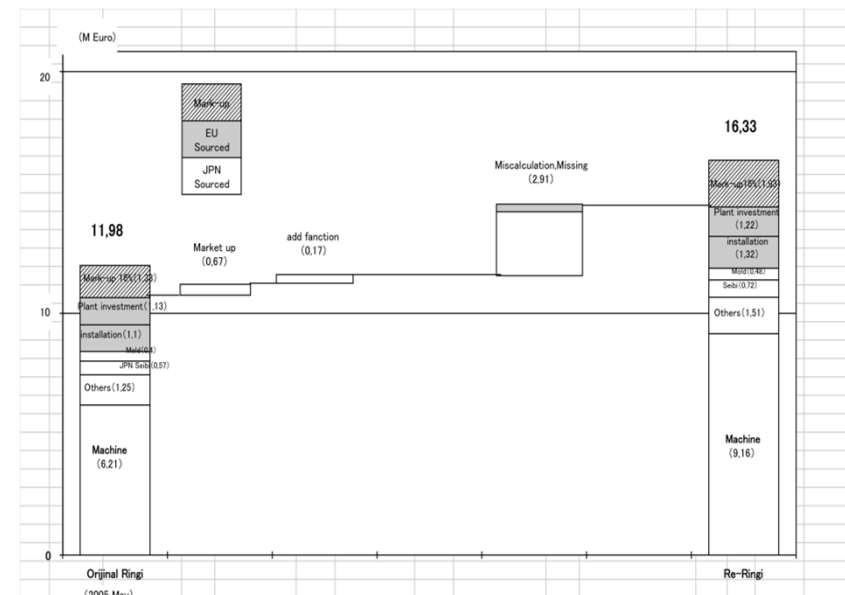
Tear down

How well do we
understand our
competitors?



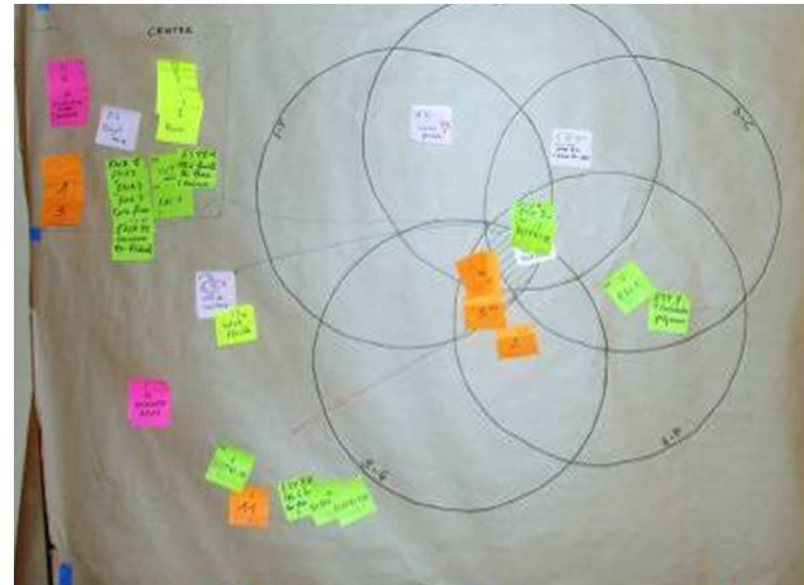
Target cost

Can we sell at market cost and make a profit?



Set based concurrent engineering

Exploring the design space on critical issues to avoid endless feed-back loops



Design standards



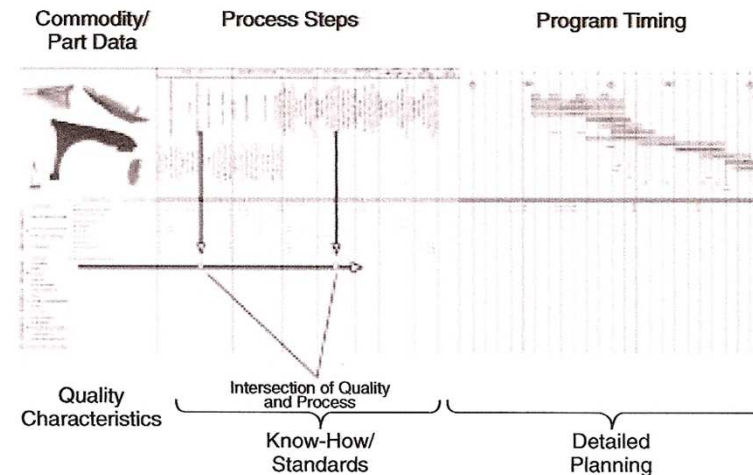
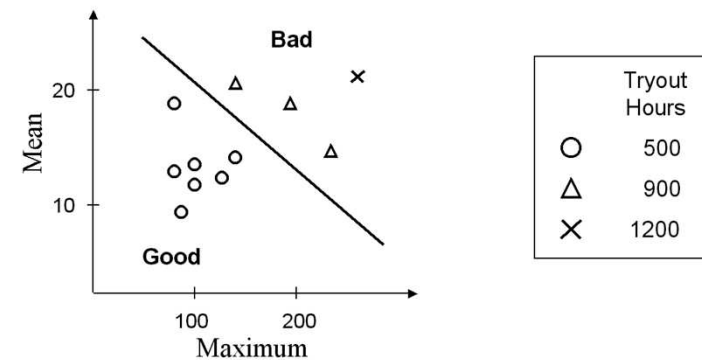
Toyota Checklist Example



Standards are what we KNOW about:

- Architecture
- Interfaces
- Parts
- Technical processes
- Design

- Section length ratio of rear quarter panel.



Slow build

Assembling the
product part by part
to look for kaizen
opportunities



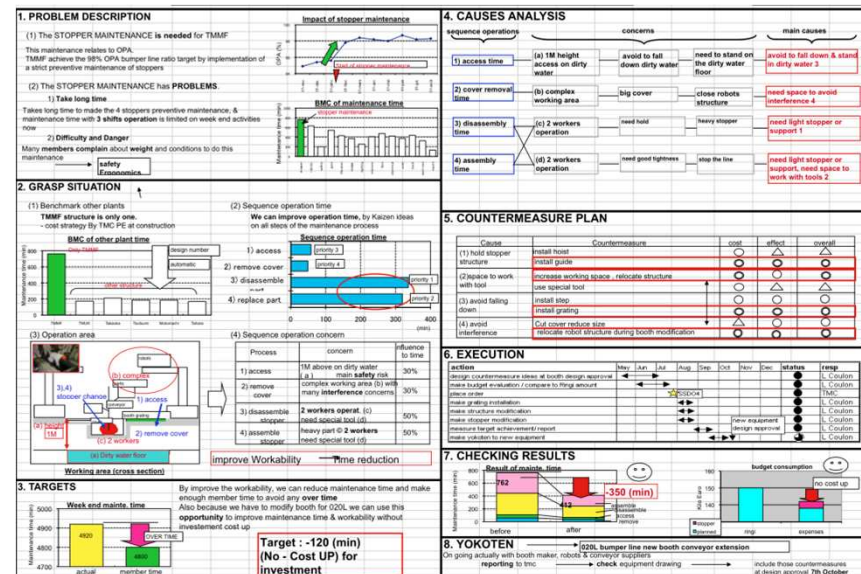
Production preparation

How will the cell
work for operators
and flow of
components?

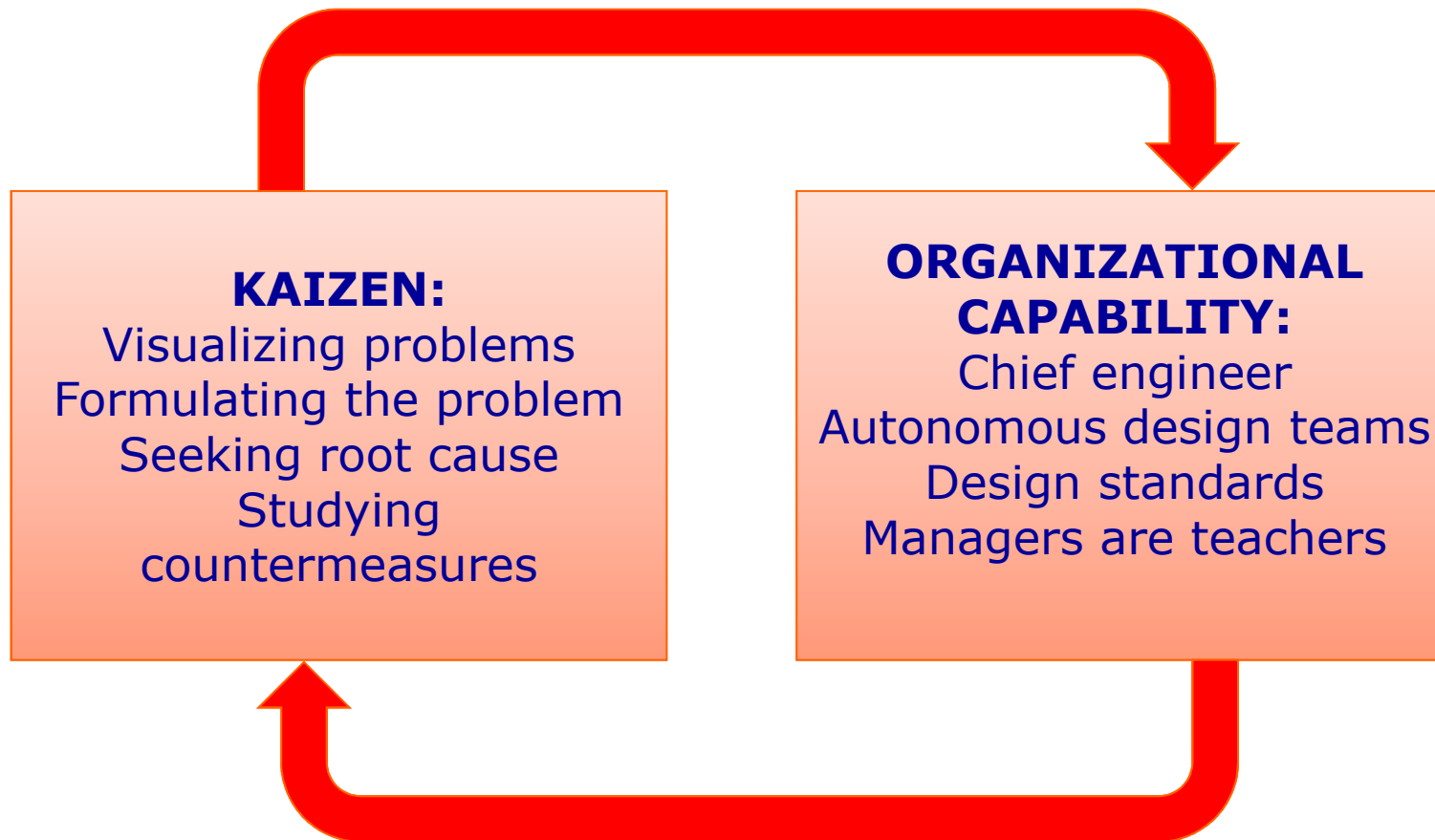


A3 problem solving

Have we thought this through?



Kaizen always produces greater insight



A leadership paradigm shift

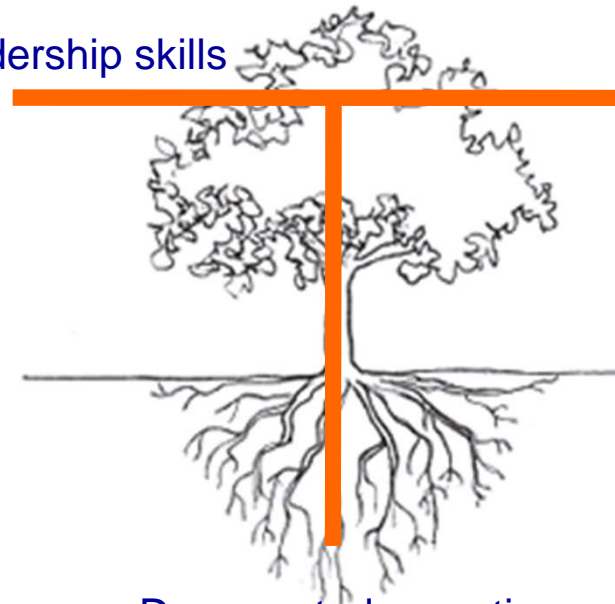
People make great designs, not systems

A managerial revolution

MANAGERS = TEACHERS

Challenge, open mind, teamwork

Broadening leadership skills



Deep rooted expertise



13 & 14 october, 2011

Paris, France

www.lean-it-summit.com



Operae Partners
Operational Excellence