Welcome to the Lean Journey
## an experience report at Thales

Chicago – July 15th 2010 – Olivier Terrien

What?

THALES

Defence

50%

- Air
- Land
- Naval
- Joint

Aerospace & Space

25%

Security

25%

THALES

Lean

USA: 2,200

Canada: 1,200

Latin America: 660

France: 34,300

UK: 8,200

Germany: 4,500

Spain: 2,100

Italy: 2,600

Netherlands: 2,000

Belgium: 950

Australia: 3,600

South Korea: 1,370

Others: Saudi Arabia: 730 / China: 390 / South Africa: 340 / Switzerland: 290 / Singapore: 240 / India: 200 / Austria: 200 / Norway: 180 / Portugal: 160 / Poland: 130

THALES

R&T means 20% of Thales turnover

More than 68,000 people

Facilities in 50 countries

Copyright © Nobel Web AB 2007
Photo: Hans Mehlin

Copyright © 2010 by Michel Baujard, Harry Gilles, Olivier Terrien, Roger Martin, Edmond Tonnellier

THALES

Why?

THALES

System Engineering & Product Development Time spent

reporting   problems backlog document rework   meetings e-mails …
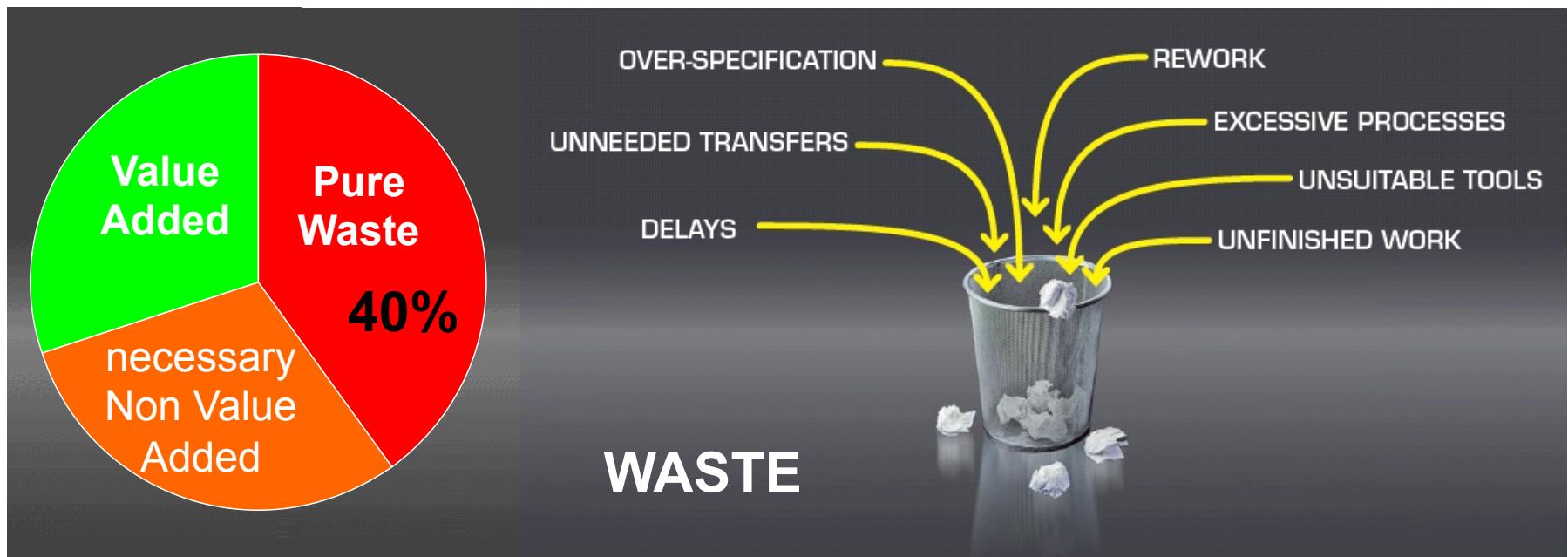
40% of pure Waste, 30% of necessary Non Value Added !

THALES

Current Value Stream

Over Processing · Unsuitable tools · Defects · Funnel · Delays · Availability

VA | NVA | Waiting

small improvement · *improvement* · *large improvement*

Optimised Value Stream

VA | NVA | Waiting
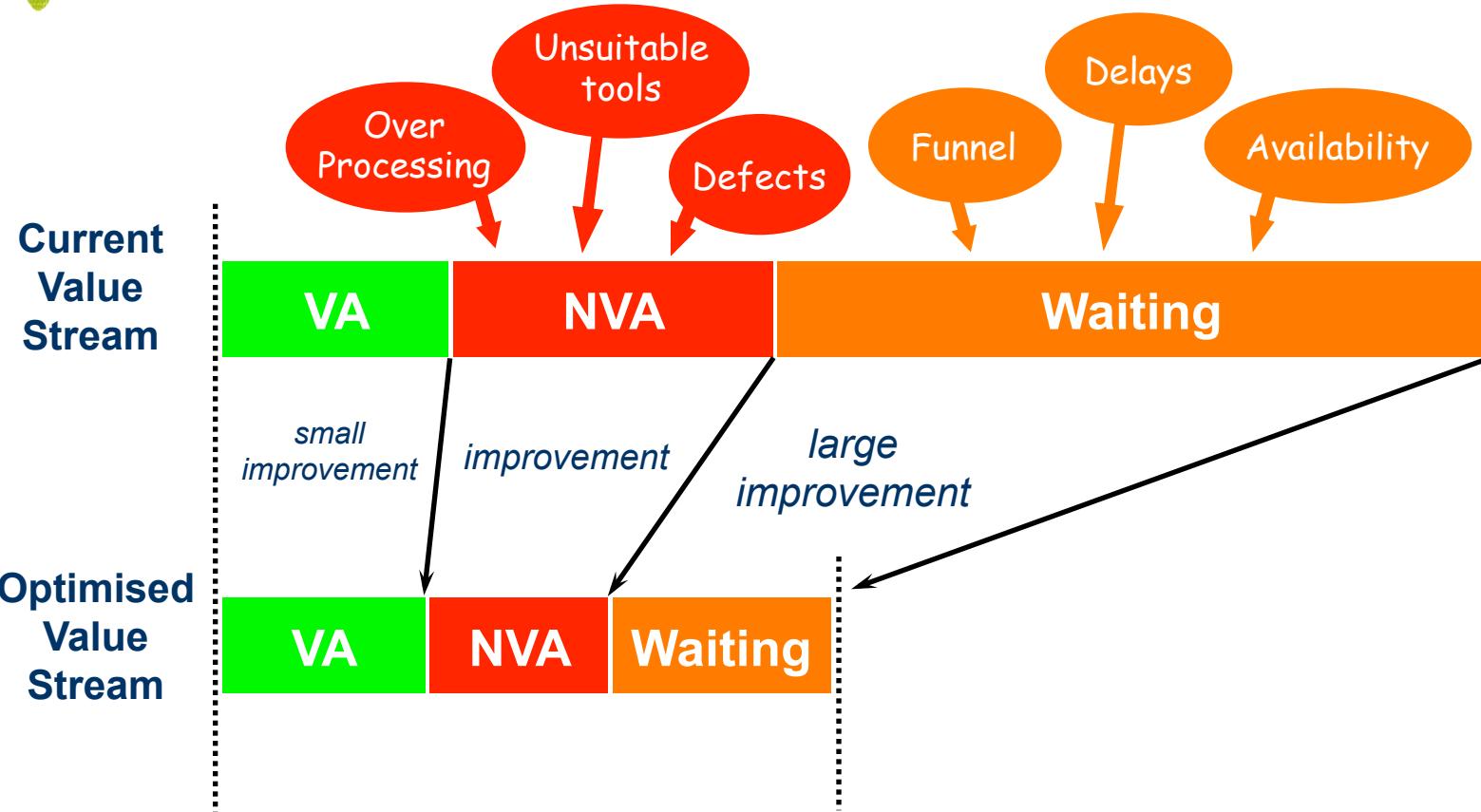
Make waste visible to improve Value Streams

THALES

How?

THALES

Step 1

Define

A charter to define the scope and the stakes of the workshop

A team of 5 to 10 cross-functional representatives

## Select a cross-functional team with an operational objective

THALES

Step 2

Measure

Facts to describe and quantify the current value stream
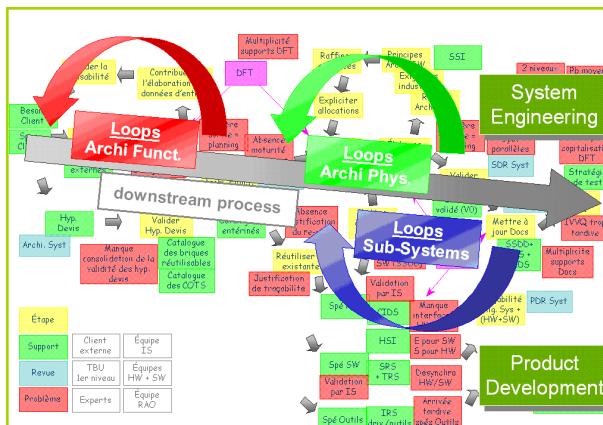
A visual identification of wastes, iterations, interactions and inefficiencies

Use available and reliable data to evaluate the performance

THALES

Step 3

Analyse

An identification of root-causes to solve real problems

4 axis to improve the new program :

→ Reinforce the functional and architectural approach

→ Reduce the number of requirements managed by SE
(while insuring the global coherence of the new system)

→ Build and validate a « full function » architecture
(espacially, define as early as possible the interfaces between functions)

→ Involve PD activities (HW & SW) during up-stream tasks

A shared vision of the future state (target)

## Focus on fact-based root cause analysis

THALES
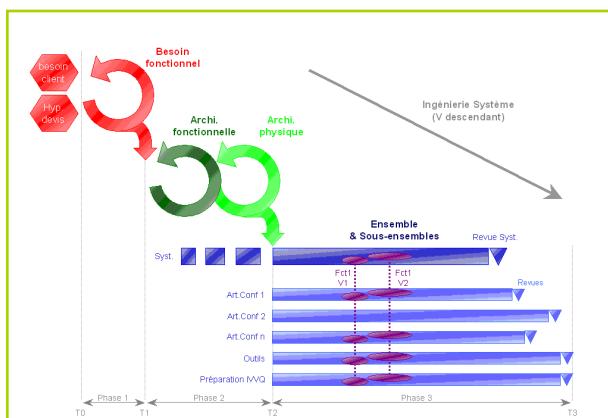
« An ideal state in a perfect world (future process) »

Step 4

Improve
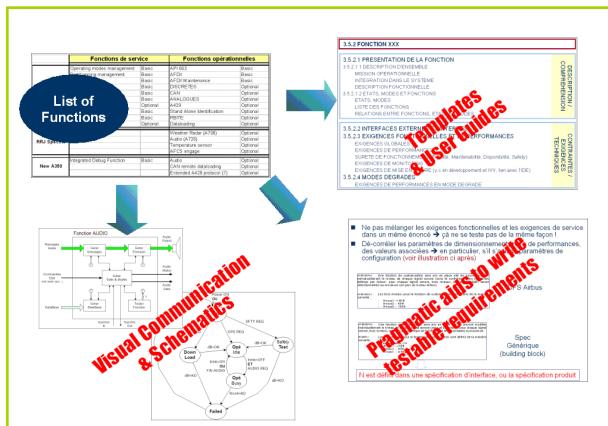
A collection of best practices to help SE activities

Priotorize, implement and pilot the best possible solutions

THALES
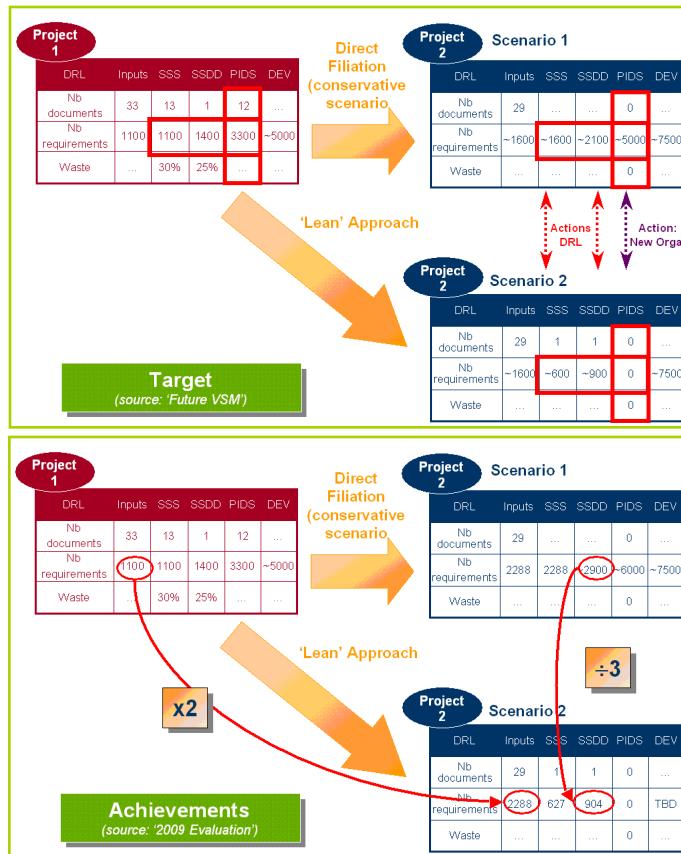
A KPI dashboard to focus on results

Solutions under control and concrete achievements

Step 5

Control

Ensure that changes are sustained after project completion

THALES
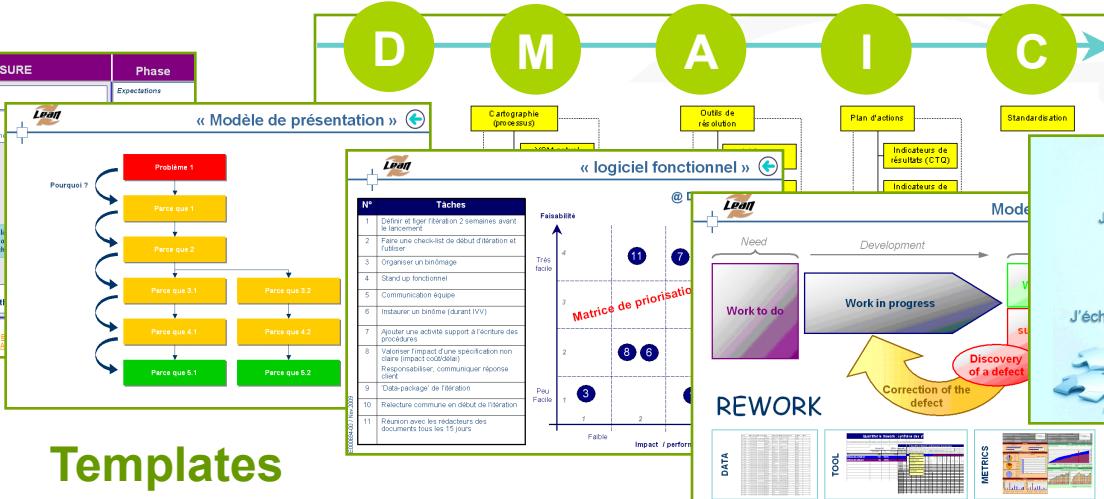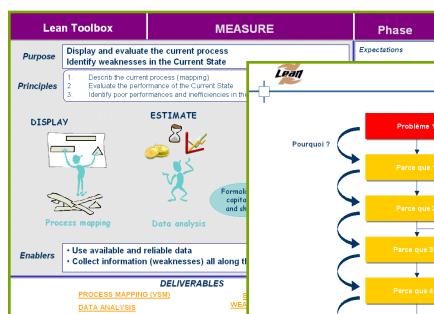
User guides

Templates

50 Lessons Learnt

Models

Lean on intranet

Paris, 23 Sept 2009

Stockholm, 26 May 2010

Chicago, 12 July 2010

Contribute to set an international standard: Lean Enablers for SE

THALES

How many?

THALES

workshops

110 local workshops since 2008
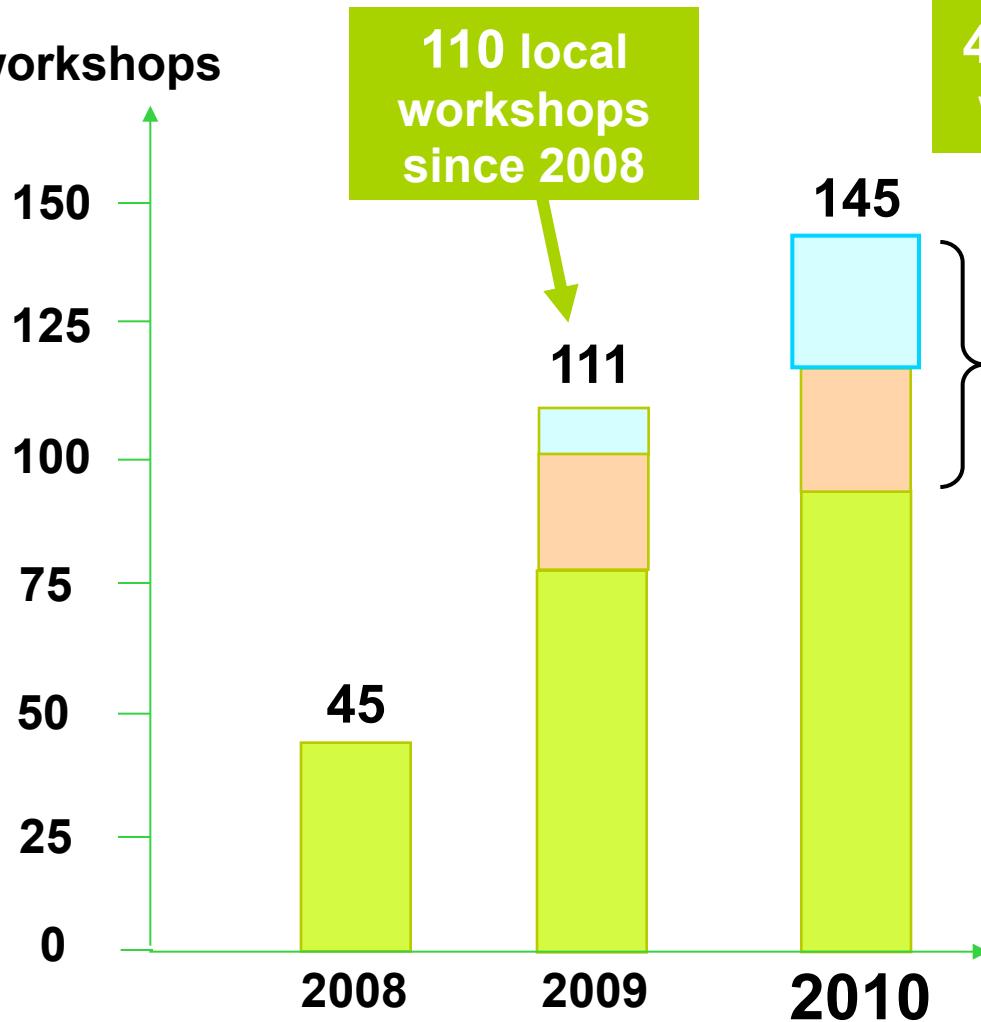
40 identified or active workshops for 2010

Identified
Active
Achieved

145

111

45

150
125
100
75
50
25
0

2008   2009   **2010**

> **140** awareness for managers

> **130** people trained

> **500** people involved

Thales University Passport Training

THALES

Where?

THALES
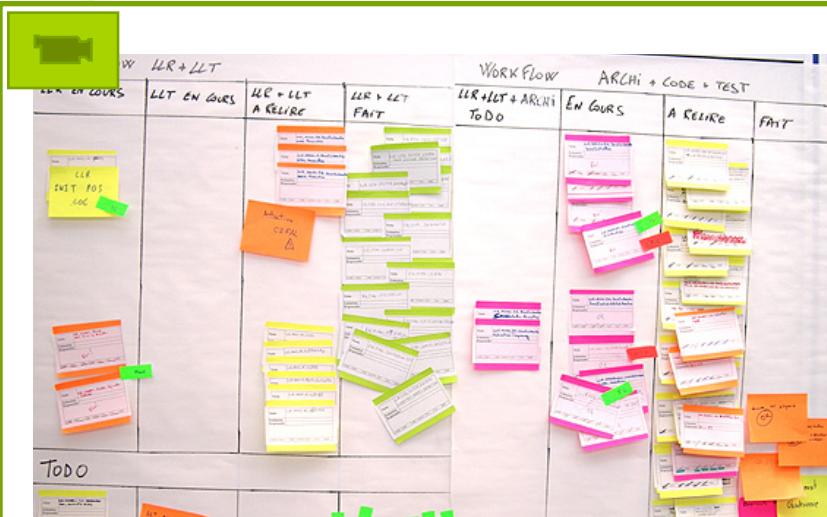
Video 2'

Power of the team
Kanban for Software
Customer focus
Visual Management

May 2009

System Engineering Convention
Lean Enablers in
System Engineering

A pragmatic approach, involving employees and managers

THALES

Categories	Typical implementation	110 Lean workshops
Transition between phases of a project	Bid > Product Development Development > Production	10%
Interfaces between disciplines	Hardware / Software; System Engineering / Software or Hardware Tools or Benchs Prototypes	30%
Product maturity	Obsolescence Requirements stability	5%
Integrated team	Product Integration Verification Validation PERT	30%
Processes	Sequential / Iterative / Recurrent	10%
Out of Company	Customers / Suppliers / Partners	5%
Systemic	Project Reporting Quality assurance	10%

Standardize Lean workshops not solutions

THALES

When?

THALES
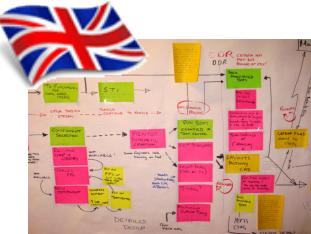
Business Impacts

Video 2'

- **Customer focus & responsiveness**
- **Fewer mistakes & reduced rework**
- **Cultural change & empowerment**
- **Tangible savings, low cost**
- **Secured/reduced development cycle time:**

Cycle time

-20%

THALES

Who?

THALES

The proactive network of Lean ambassadors

TCF TUK TAS TUS ...

Project Leader

Lean Expert

Deputy

on-site Lean coach

Lean Engineering Team

Thales University
Thales EPM
...
Systems Engineering
Technical Directorate

SE Leader

UK Leader

THALES

Q & A

New Lean Game

The Lean Journey
by THALES

Play the zero-waste game!

By **THALES** Aerospace

THALES