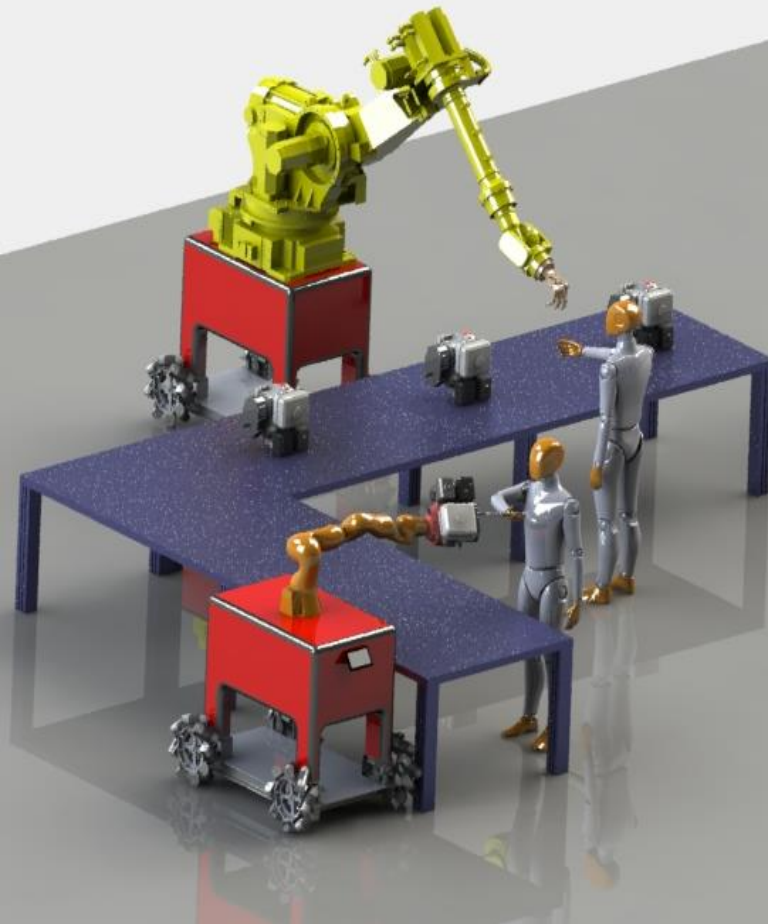


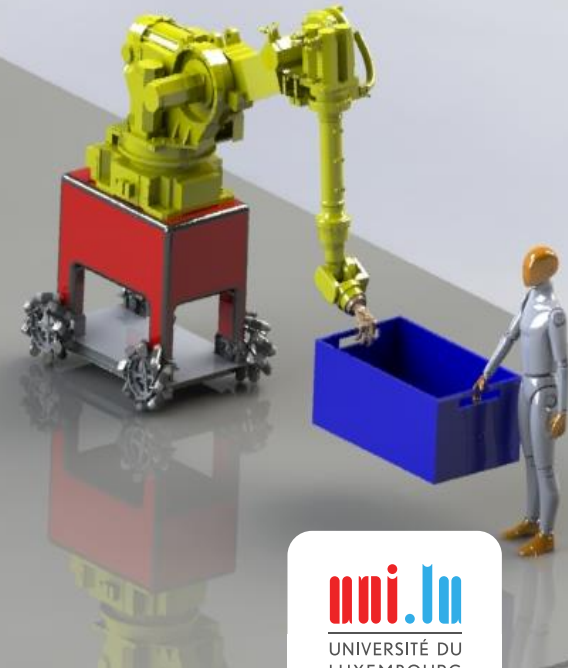
Value Stream Mapping (VSM) for Teaching and Research

Annual AIM Conference, Riga 2018



Agenda

- 1) Motivation
- 2) State-of-the-art
- 3) ISO norm
- 4) Teaching
- 5) Summary



Global interconnected supply chains networks (SCN)

■ Challenges

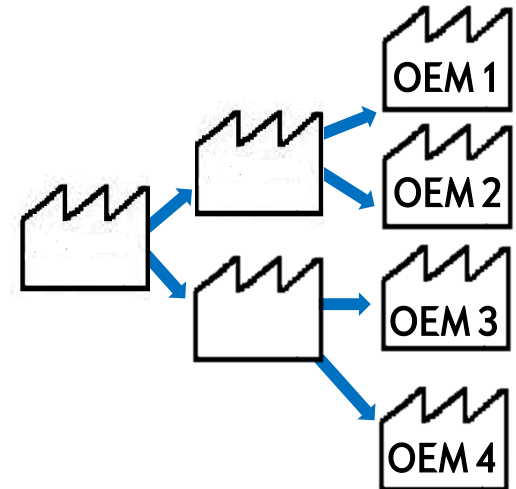
- Every customer has another definition of value stream
- b-2-b SCN have non-transparent value creation
- Different standards, different data transfer

■ Motivation

Develop open standard to visualize value stream

Provide a teaching module that enables students to understand complete plant

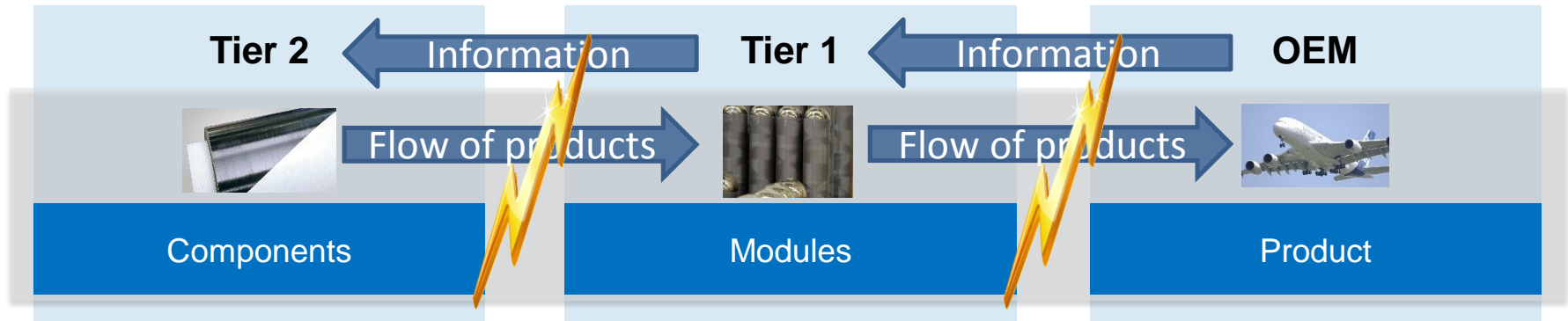
Share insights with AIM



Goal:

Common standard to identify waste in SCN for research & teaching

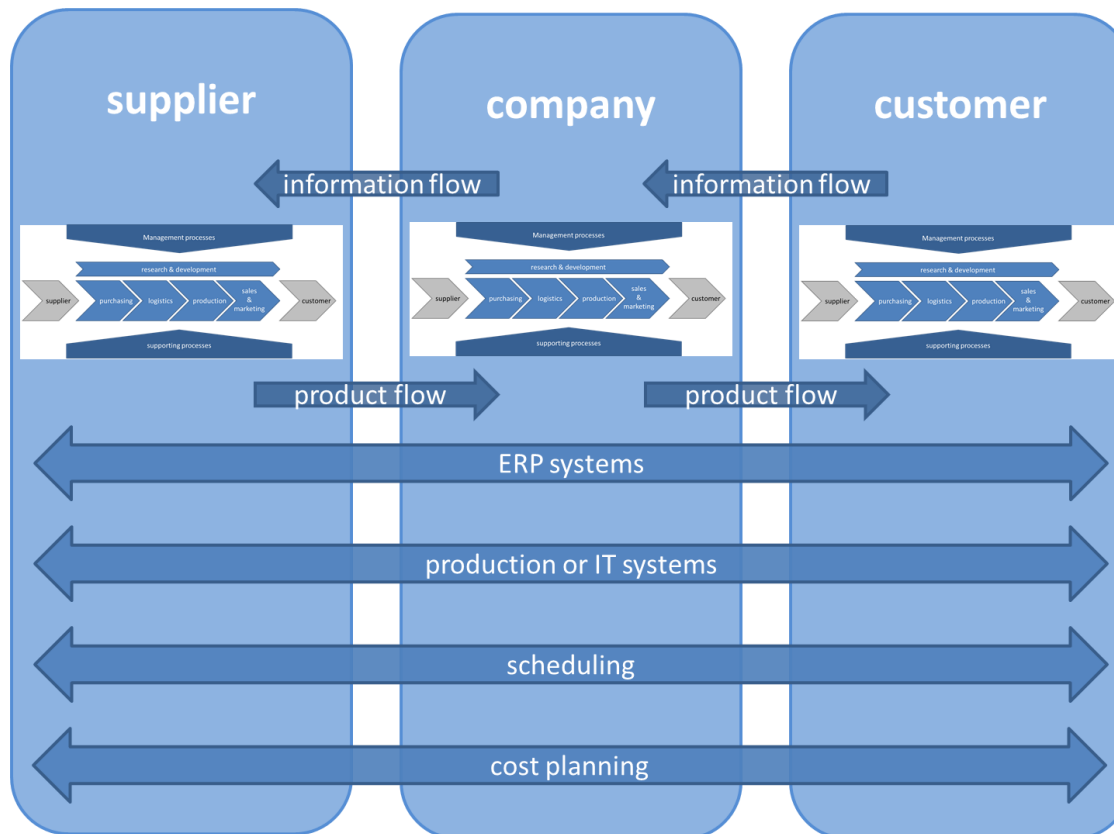
Example of a cross-enterprise supply chain



- Communication issues between departments and companies
- Production-relevant data are scattered within company or along the supply chain
- Limited transparency of production targets, like cost, quality, lead time
- Frequent customer changes lead to deviations of required materials, components and production processes

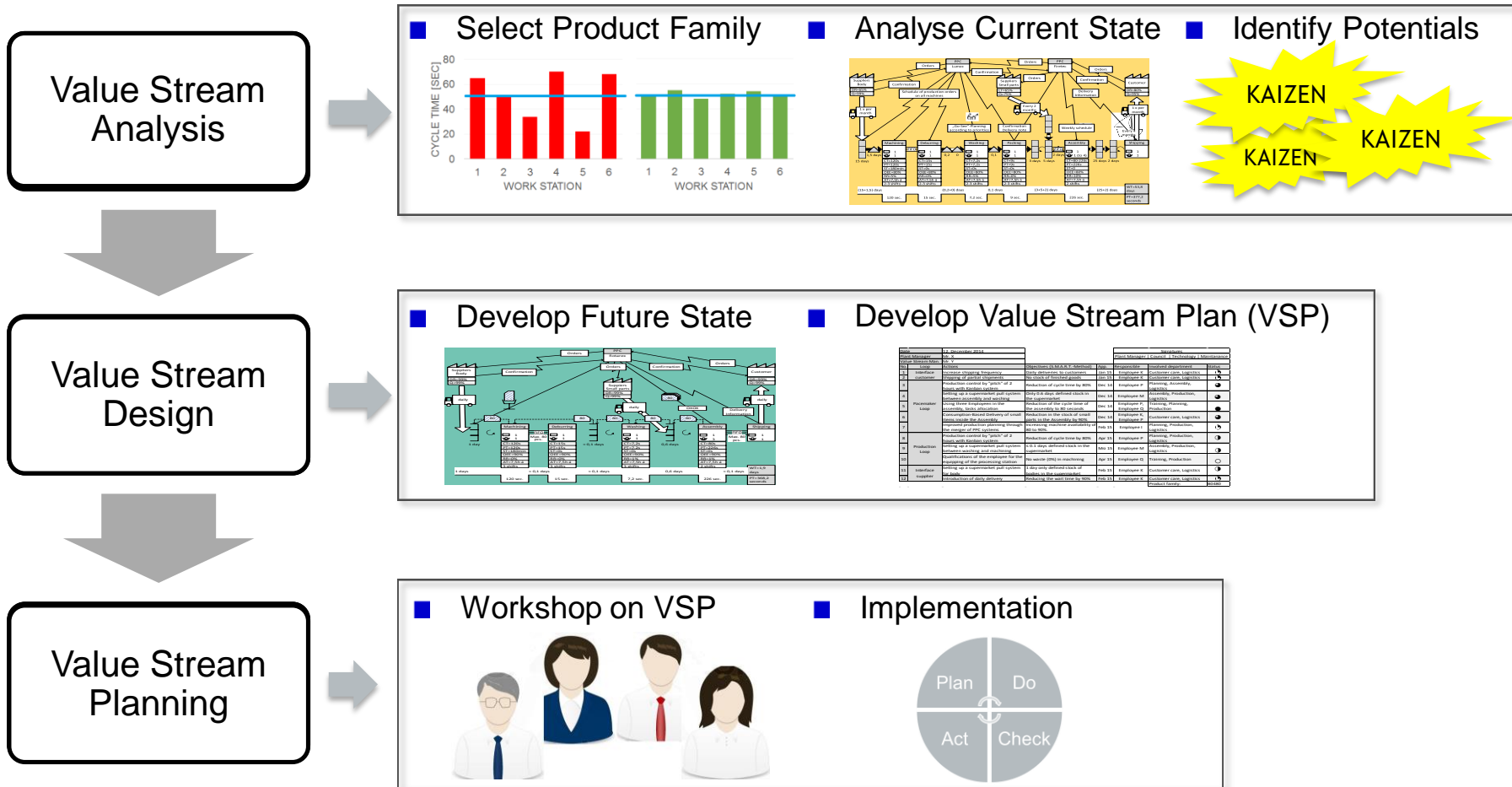
Example of a cross-enterprise supply chain

- Integrated flow of product and information reduces waste

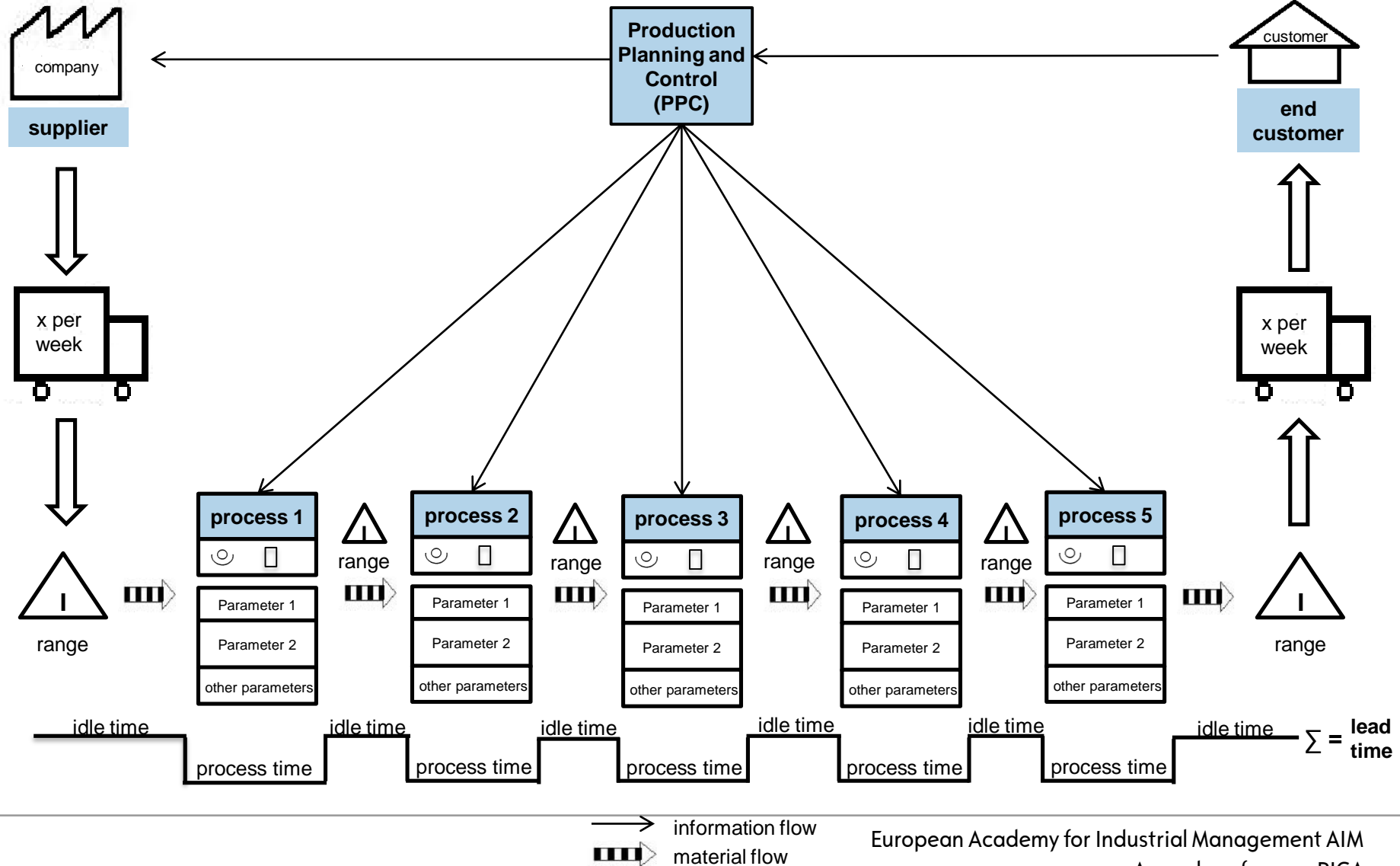


Basics of Value Stream Management (VSM)

Procedure

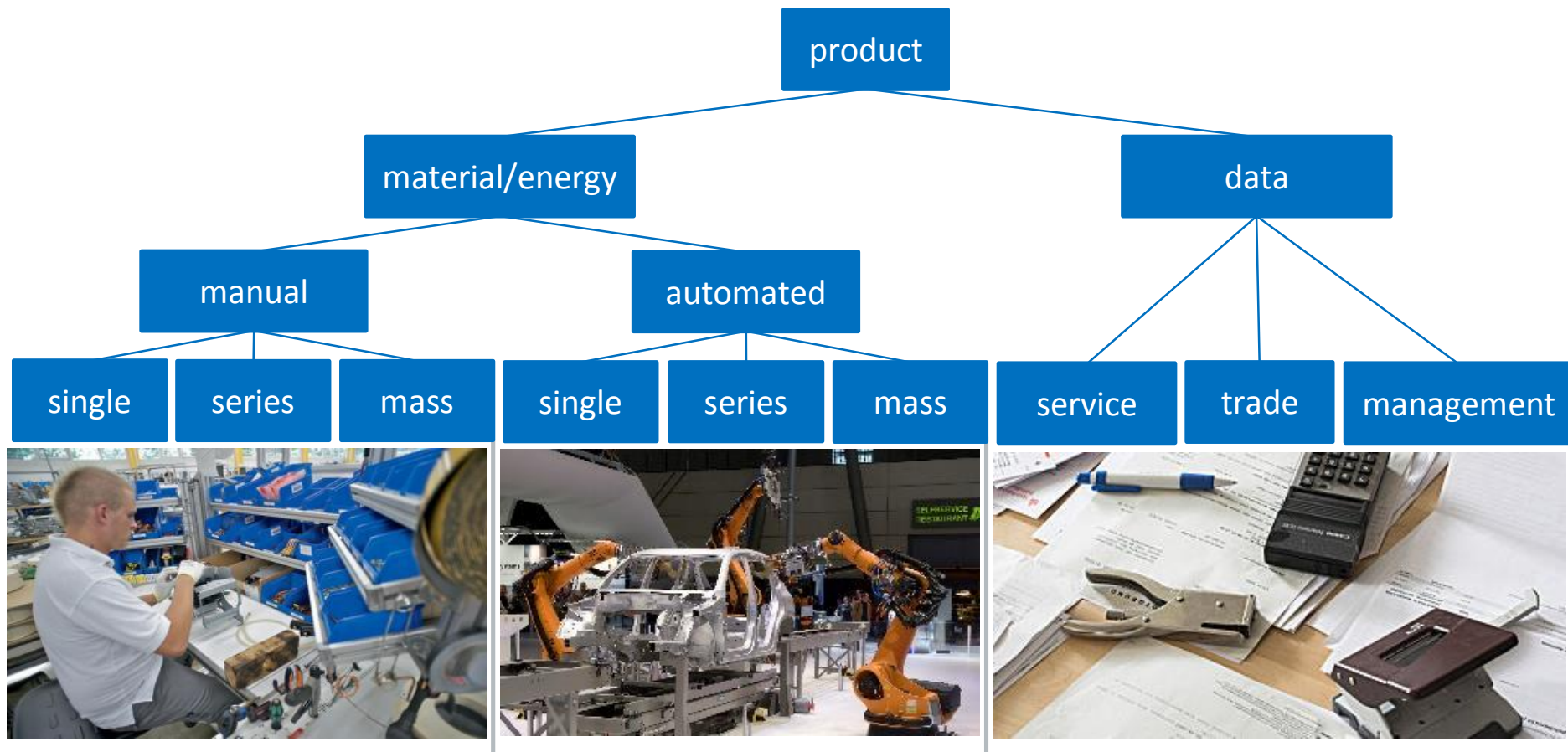


Value Stream Management (VSM) – value stream diagram



Value Stream Management (VSM)

Pre-requisite for a standard: Common method for all processes

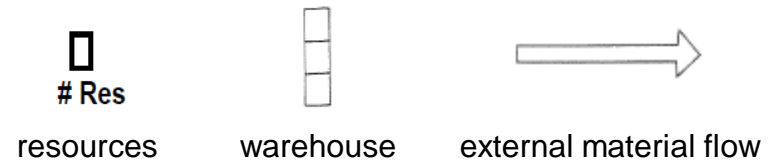


Source: *logistikknowhow, Ubisense, bsminfo*

Standardisation of Value Stream Management (VSM)

Standardization in four categories

■ Common symbols and terminology



■ Identical data sets

■ Calculation methods / formulas

| Prozess 1 | |
|-----------|---------------|
| # MA | # Res |
| PZ | Prozesszeit |
| #Wdhl | Anz. Wdhl. |
| WDZ | Zeit je Wdhl. |
| ... | ... |

$$\# K_{Var} = \text{Aufkunden} \left[\frac{BM_{Var}}{GM_{Var}} \right] \quad [1]$$

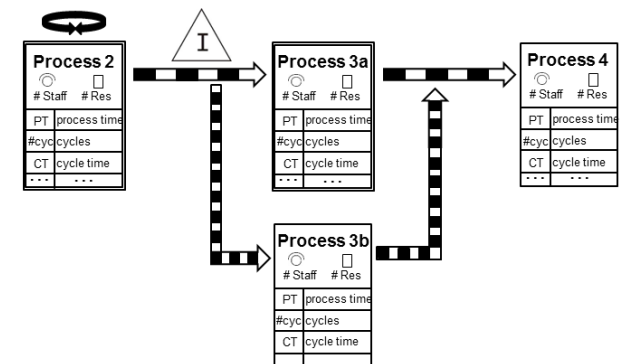
$$K = \frac{WBZ \cdot V_D}{TK} \cdot SF + \frac{SB}{TK} \quad [2]$$

number of Kanban, according to
Erlach or Klevers

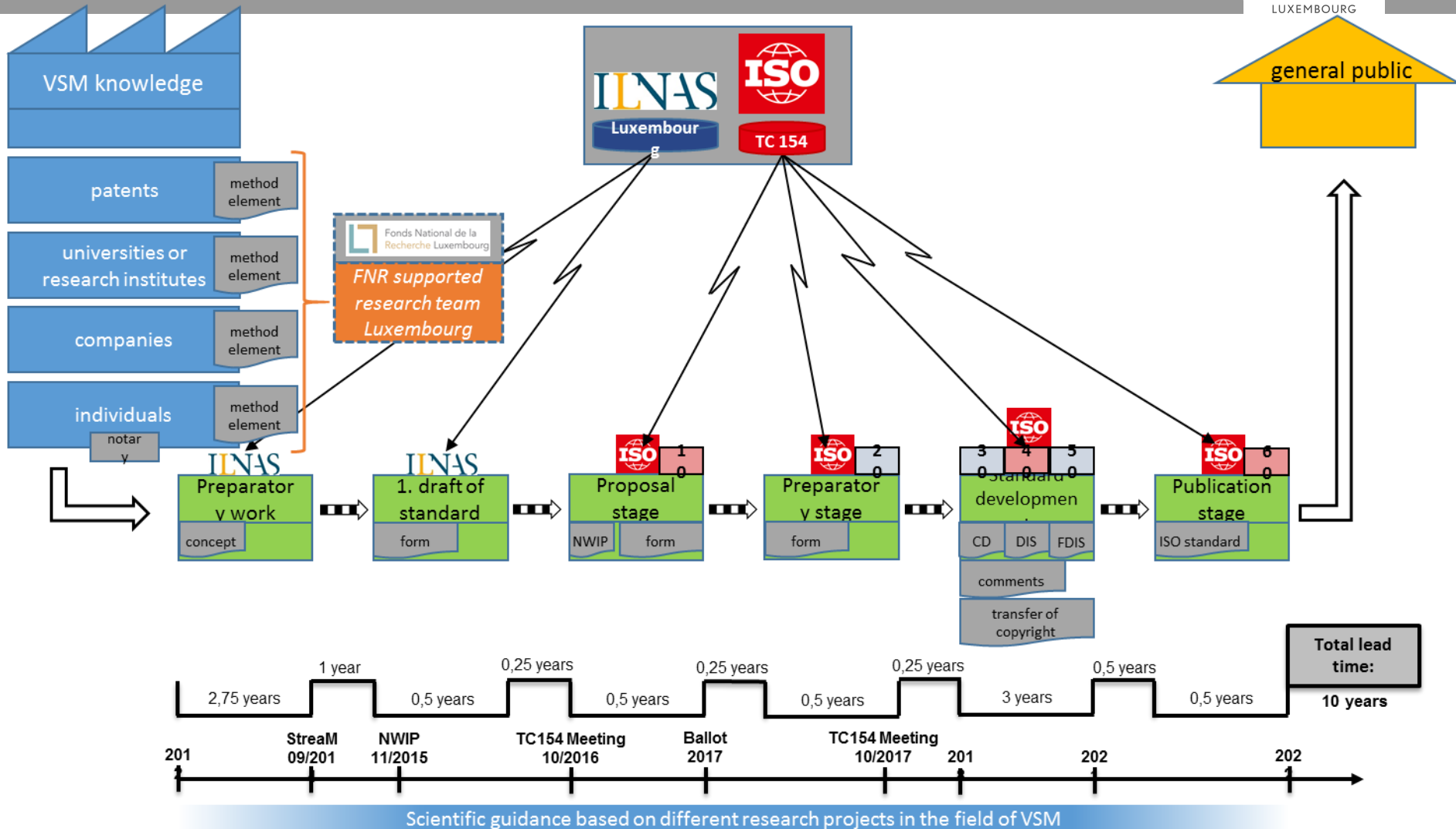
■ Value Stream diagram

Goal: International Norm

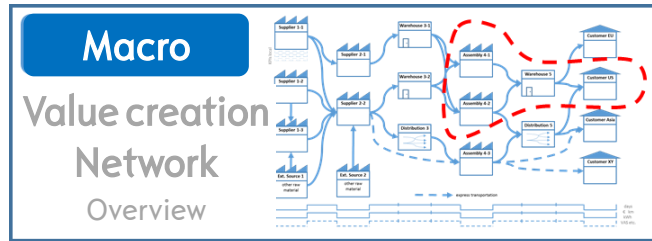
ILNAS



VSM-Standardisation of an administrative process

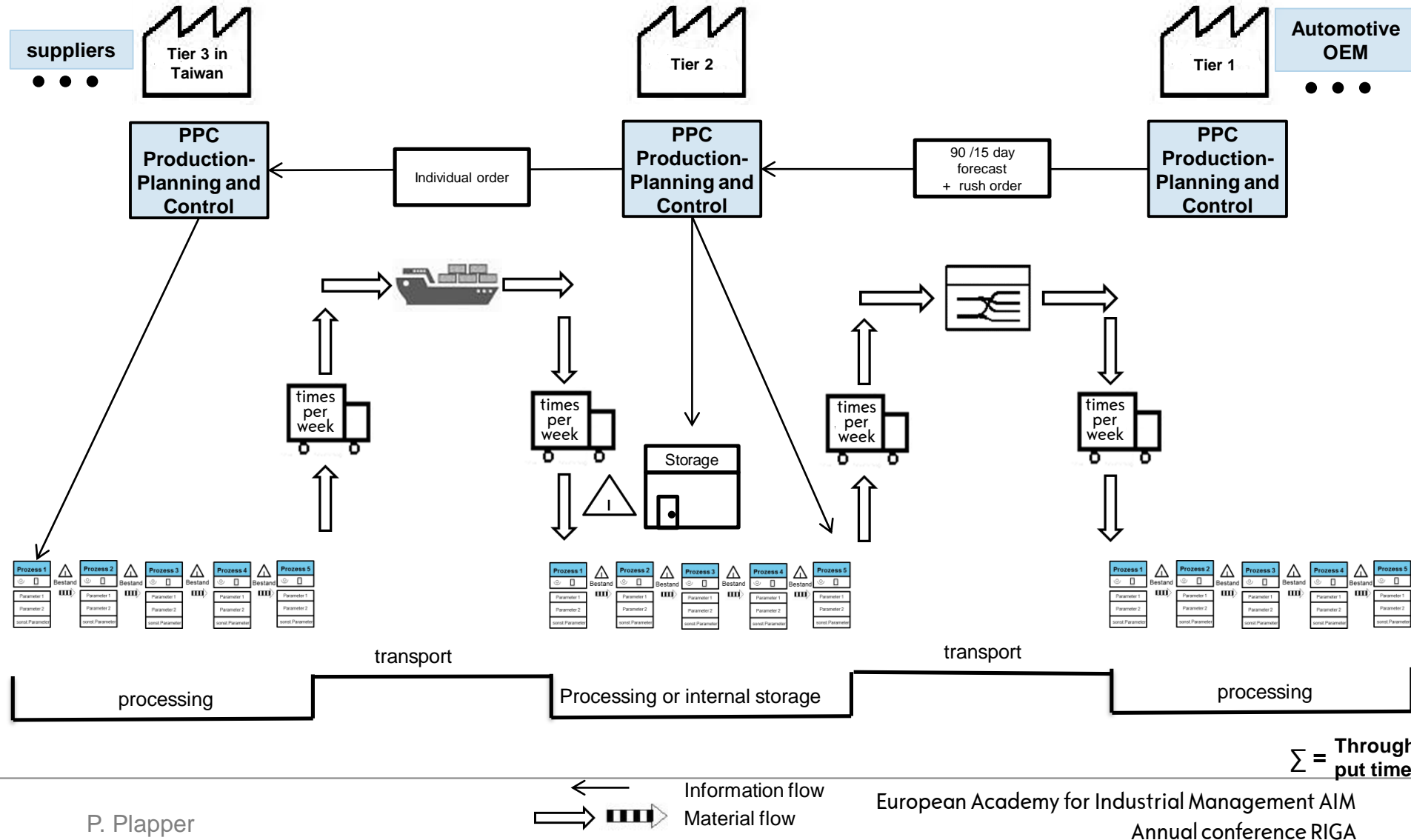


Value Stream: Different levels of value mapping



- Holistic optimization of Value stream
- Detailing according to focus of VSM area
- Global analysis vs. Detailed analysis of selected area of SCN
- Various criteria for analysis feasible. Like lead time, quality, cost

Value Stream Mapping for complete Supply Chain Network

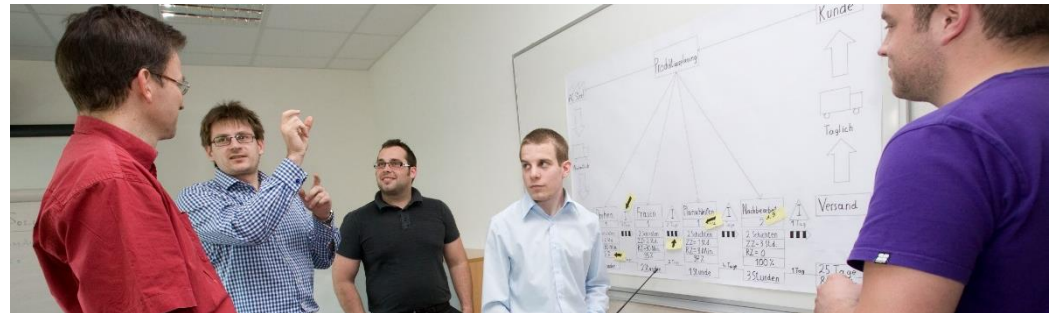


Teaching of VSM

1st classroom teaching



2nd exercise



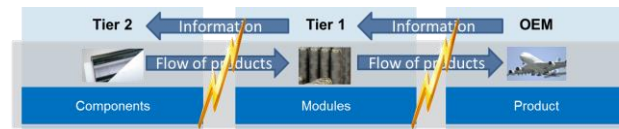
3rd industrial application



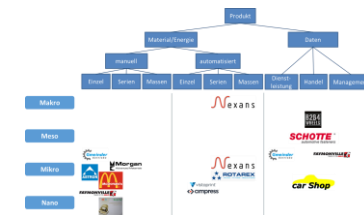
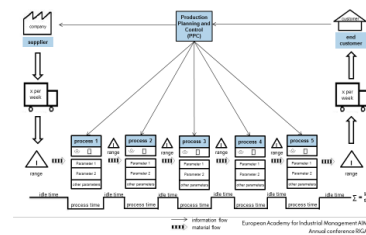
Summary

Standardised, common method for Value Stream Management (VSM)

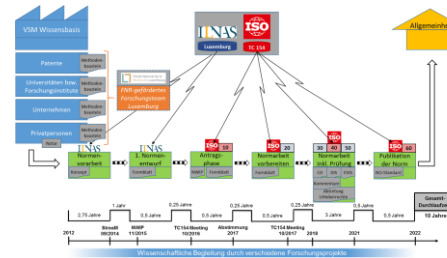
■ Motivation



■ State-of-the-art



■ ISO norm



■ Teaching

