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# How to use the Lean Methods inside warehouses



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Flexibility in warehouses / Eindhoven / 17. April 2012

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## Agenda

- The origin of Lean
- Lean Warehousing:  
The Lean application in logistics warehouses

# The origin of Lean

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- Japan at the end of the second world war
  - Reconstruction of the industry without financial help
  - Japanese companies tried to access the global market without any financial help
- In the 80s the MIT evaluated Japanese production systems and compared them with other systems in Germany and the United States
  - Worldwide, these studies characterised the term „lean“
  - From these comparisons in the MIT studies, based on the Japanese production systems, the term “Lean” coined around the world

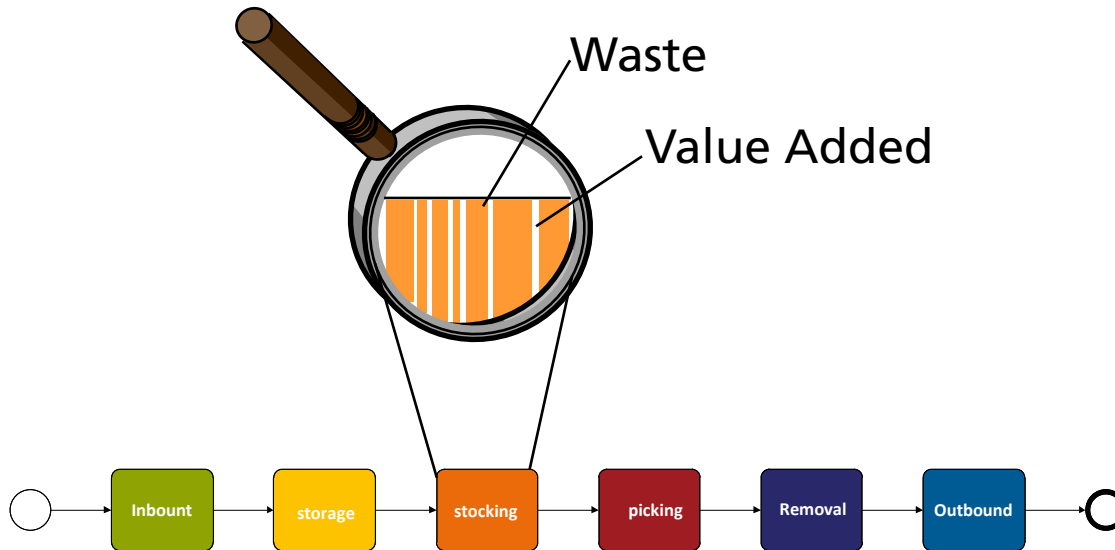
# The Lean-meaning & -consequences

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- What it is about
  - Unite know-how and responsibility
  - Work together in networks
  - Prevent waste and defects
  - Harmonise processes
  - Attempt continual improvement
  
- Observed consequences
  - flat hierarchy
  - More responsibility and know-how at the „base“
  - reduced waste
  - Improved internal communication and external communication with customers and suppliers as well
  - Orders will be started after the pull-principle

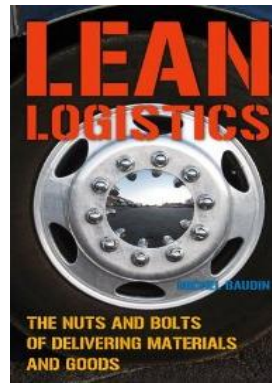
# Types of waste



- The customer is unwilling to pay for waste
  - Transportation
  - Inventory
  - Motion
  - Waiting
  - Overproduction
  - Over Processing
  - Defects
  - Unused Potential
- Eliminate all types of waste and use the gained time and resources value added

# Lean Warehousing

- Transfer the lean principles to logistics
  - Individual compilation of lean methods for a „logistic- production system“
  - Usage of lean methods and tools for CIP



- Reasons for Lean Warehousing
  - CIP
  - Standardisation
  - Prevention and Elimination of waste
  - Synchronised processes
  - Employee qualification
  - Preventive defects management
  - Visualisation

# Lean warehousing potentials

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- Process reliability
- Reduced process costs
- Low cost for capital employed
- Raising quality as well as improved of other service-aspects
- Exhauste the potential of employees
- Enhance the satisfaction of employees

# Lean warehousing challenges

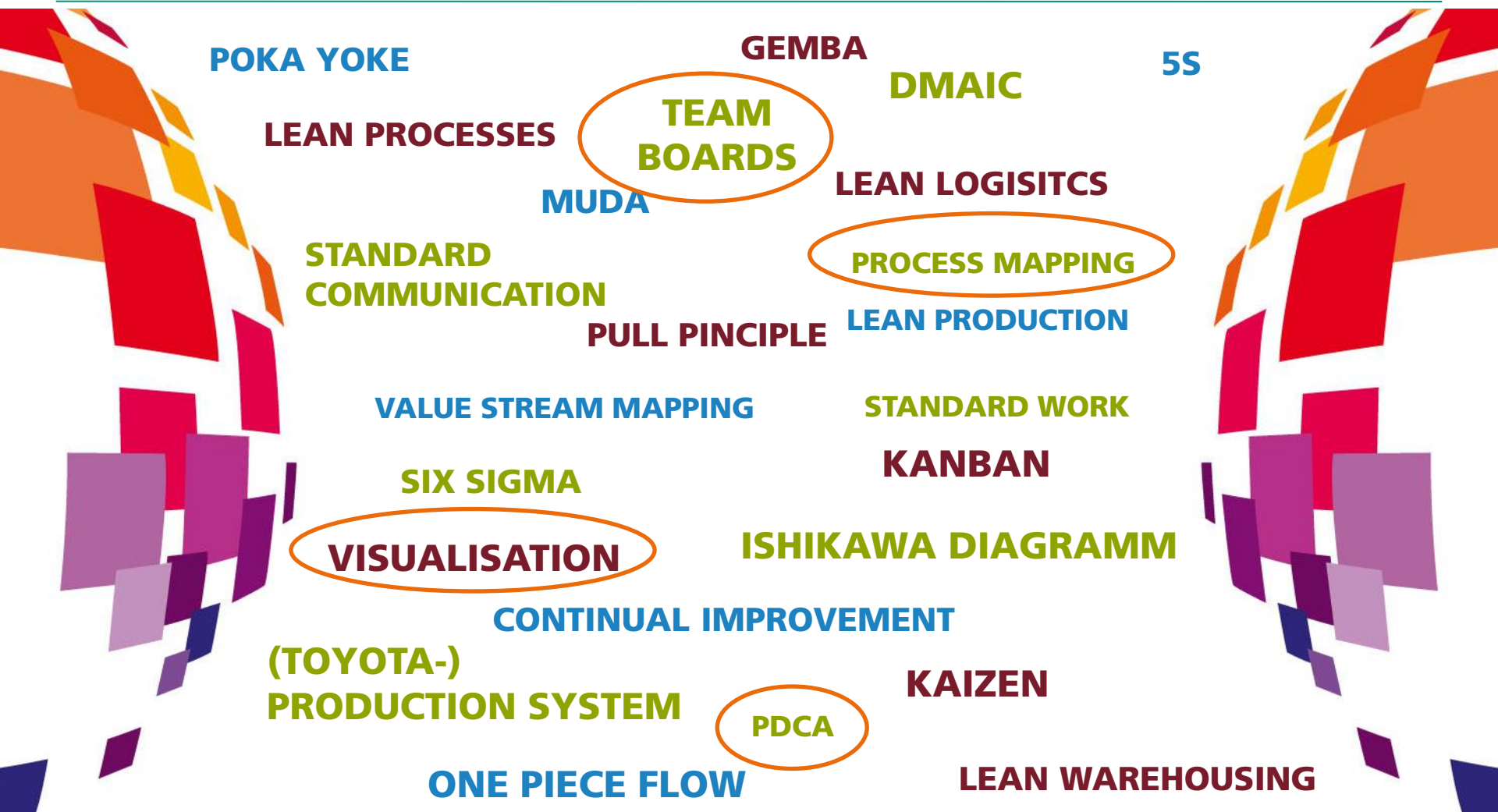
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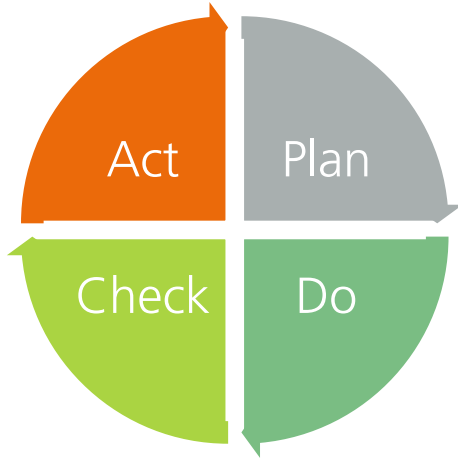
- Transferring of Japanese management-principles
- Management changes the roles: from chief to consultant
- Highly qualified employees
- Conflict between rationalisation and employee participation
- Long-term thinking towards short-term corporate objectives
- Professional change management is inevitable for change process



# Selection of lean-tools and -methods



# Lean Warehousing: PDCA-cycle



- **Plan**
  - means the cognition, the analysis of the current status as well as developing a new concept
- **Do**
  - contains the practical optimisation of the concept with realisable and simple instruments at the workplace
- **Check**
  - studies the results and in the case of success release it as standard
- **Act**
  - means the implementation across a broad front



PDCA-cycle supports the sustainability in projects

# Lean Warehousing: team-boards



- Team-boards contain following elements
  - Overview about weekly or daily updated key figures  
Weekly or daily
  - CIP activities
  - A3 Reports
  - Employee information
  - work instruction
  - etc.

➡ Total transparency of the whole system

- At any time
- For anybody

# Lean Warehousing: Process-Mapping



- First record of actual processes with shop-floor involvement
- Joint discussion of the process
- Visualization of relationships and the time course
- Analysis of the process and a common identification of weaknesses
- Process transparency understanding



Involve your shop-floor workers because they know the process

# Lean Warehousing: Visualisation



- Offline-visualisation
  - work instruction
  - signs
  - Etc.
- Andon-boards on the level of the control stand and the shopfloor
  - Visualisation of the workload
  - Visualisation of actual and the allocated time
  - Visualisation of process problems



Support by a variety of visualisations

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“Perfection is not attainable.  
But if we chase perfection we can  
catch excellence.”

Vince Lombardi  
(American Football Coach )





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# Thank you for your attention.



# Contact Person



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