# 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





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# The origin of Lean


- Japan at the end of the second world war
  - Reconstruction of the industry without financial help
  - Japanes companies tried to access the global marktet 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





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# The Lean-meaning & -consequences

- 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



Bildquelle: © P.Kirchoff / PIXELIO



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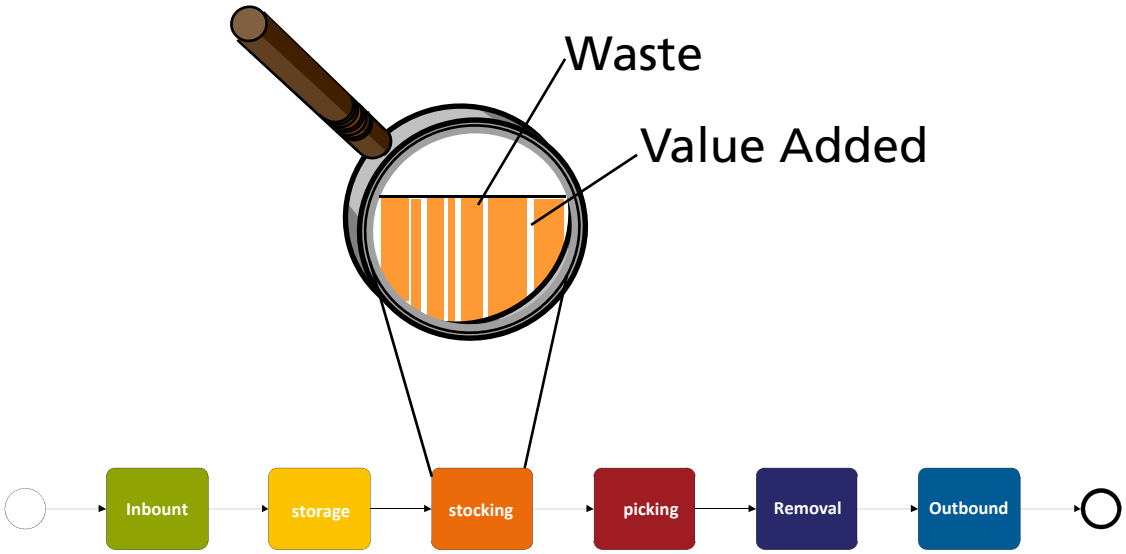
# Types of waste




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





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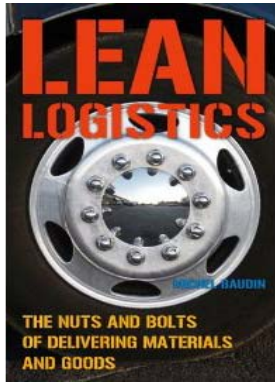
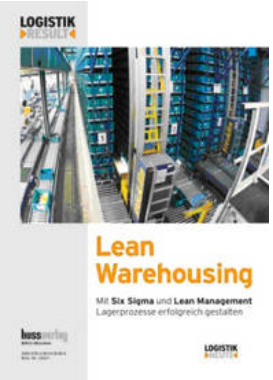
# Lean Warehousing

- 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 Elimantion of waste
  - Synchronised processes
  - Employee qualification
  - Preventive defects management
  - Visualisation



Quelle: Lean Warehousing; H. Augustin; ; Huss Verlag; 2009



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# Lean warehousing potentials

- 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





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# Lean warehousing challenges

- Transfering 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



Bildquelle:lifestylefreedomclub.com



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# Selection of lean-tools and -methods

POKA YOKE

GEMBA

5S

DMAIC

LEAN PROCESSES

TEAM BOARDS

LEAN LOGISITCS

MUDA

STANDARD COMMUNICATION

PROCESS MAPPING

PULL PINCIPLE

LEAN PRODUCTION

VALUE STREAM MAPPING

STANDARD WORK

KANBAN

SIX SIGMA

VISUALISATION

ISHIKAWA DIAGRAMM

CONTINUAL IMPROVEMENT

(TOYOTA-) PRODUCTION SYSTEM

KAIZEN

PDCA

ONE PIECE FLOW

LEAN WAREHOUSING



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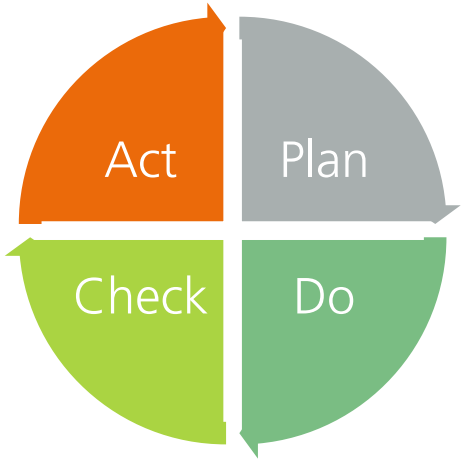
# Lean Warehousing: PDCA-cycle




- 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





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# 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





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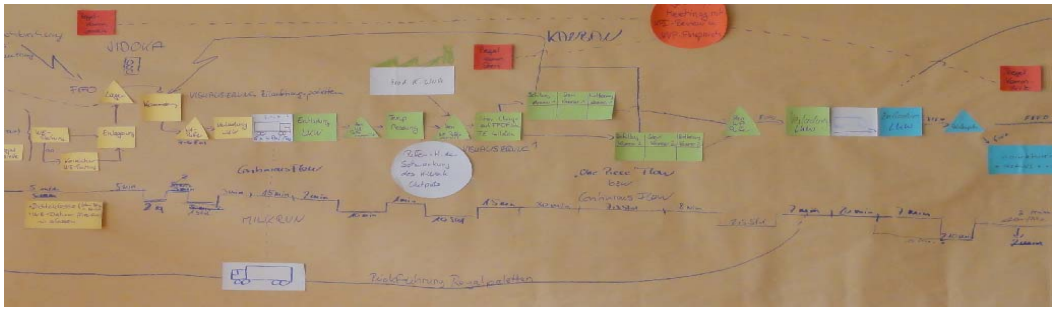
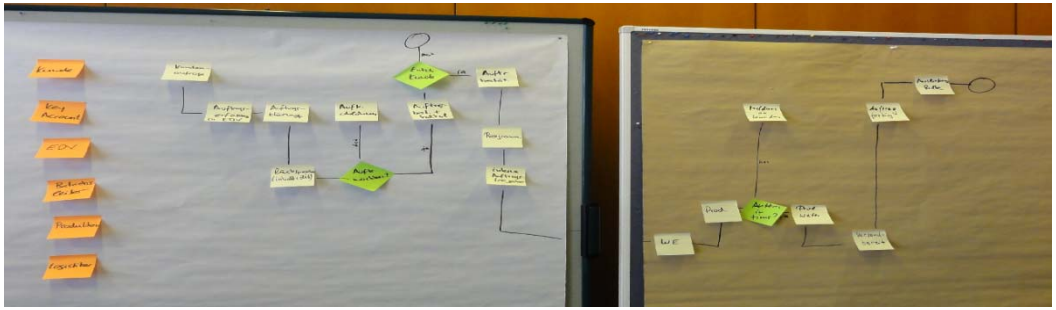
# Lean Warehousing: Process-Mapping





- 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





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# 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.



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# Contact Person


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