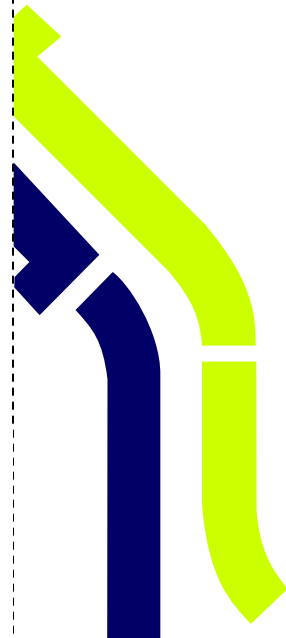


# Lean Production Systems Implementation in Germany

Univ.-Prof. Dr.-Ing. Uwe Dombrowski  
Dipl.-Ing. Isabel Crespo, Dipl.-Wirtsch.-Ing. Stefan Schmidt

31<sup>st</sup> Conference of the European Academy on Industrial Management  
Braunschweig, Germany, 24<sup>th</sup>-27<sup>th</sup> September 2009

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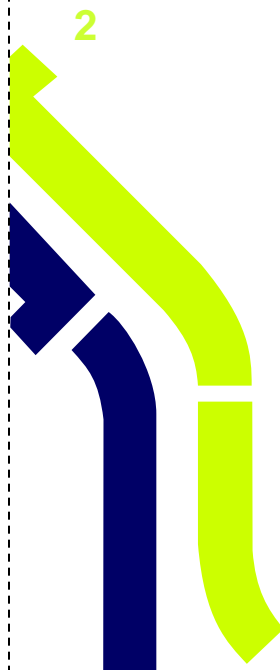
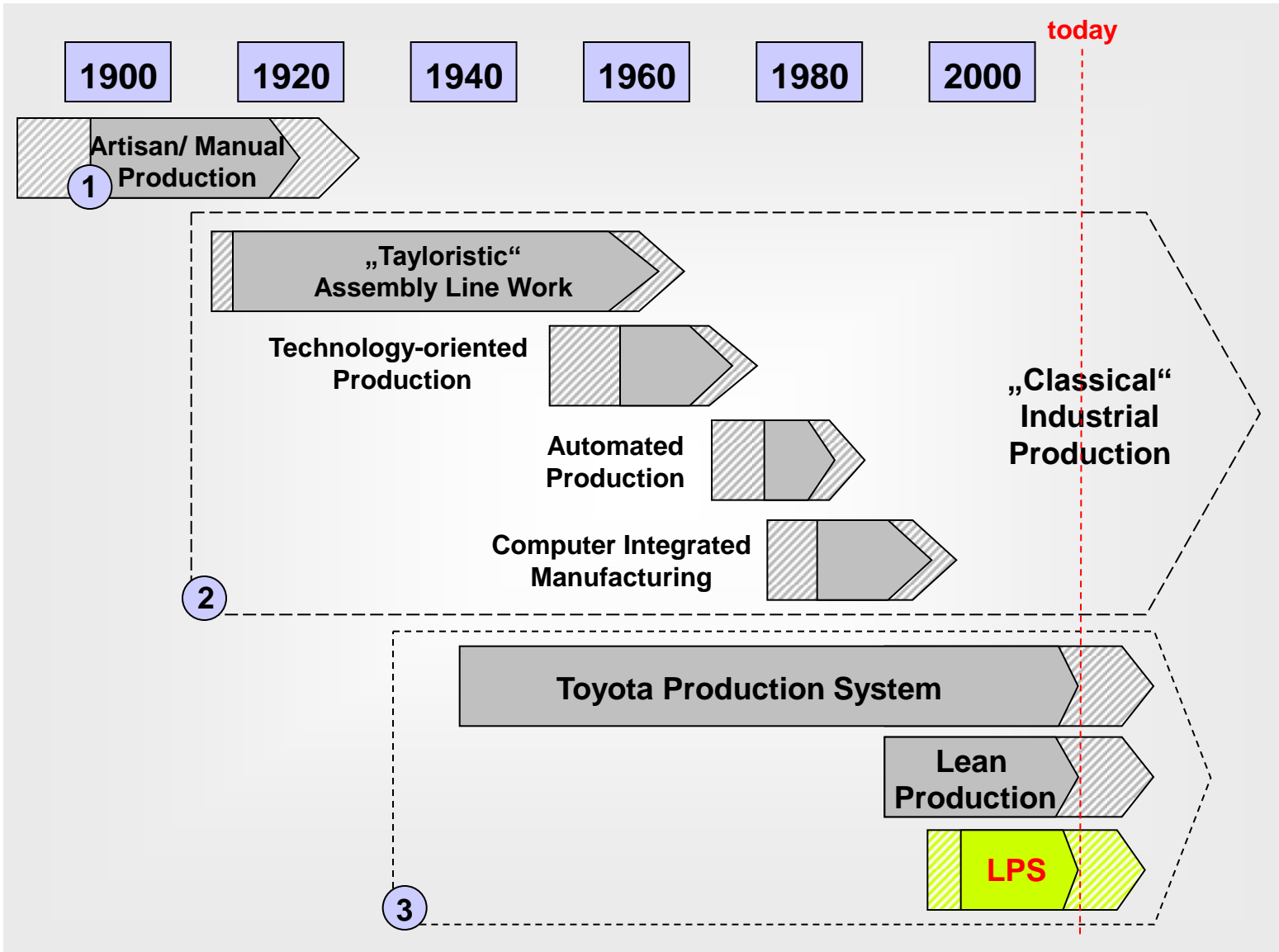


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# Development of Production Systems

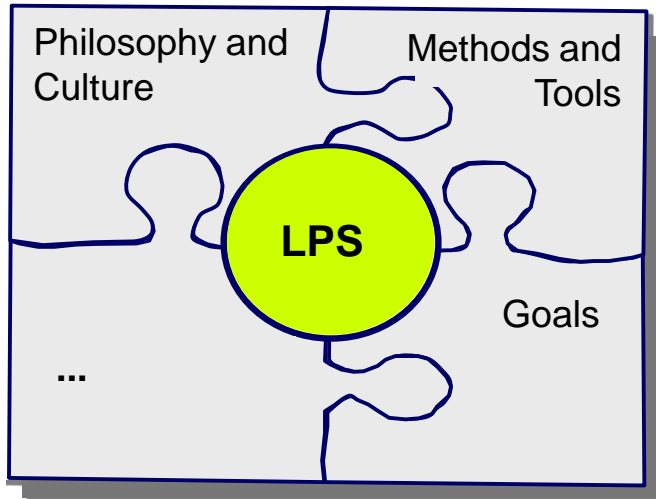


# Definition of Lean Production Systems

## A Lean Production System (LPS) is...

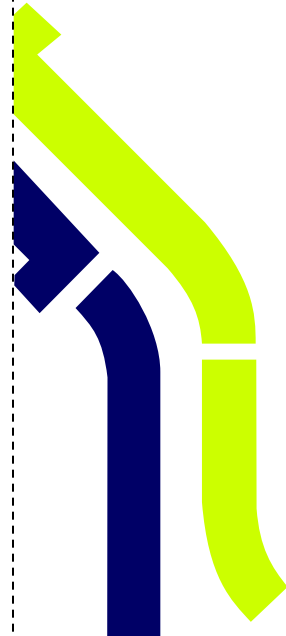
... an enterprise-specific compilation of rules, standards, methods and tools, as well as the appropriate underlying philosophy for the comprehensive and sustainable design of production. An LPS enables an enterprise to meet the requirements of today's business environment, taking into account organizational, workforce-related and economic aspects.

*Source: Dombrowski*

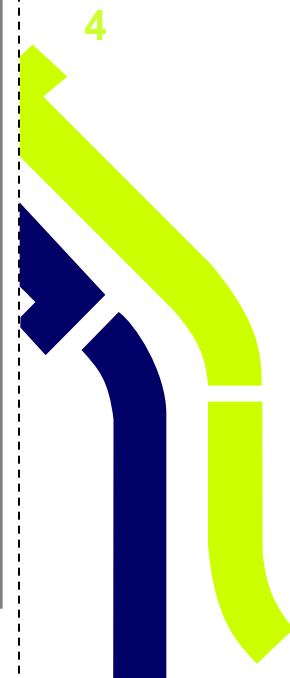
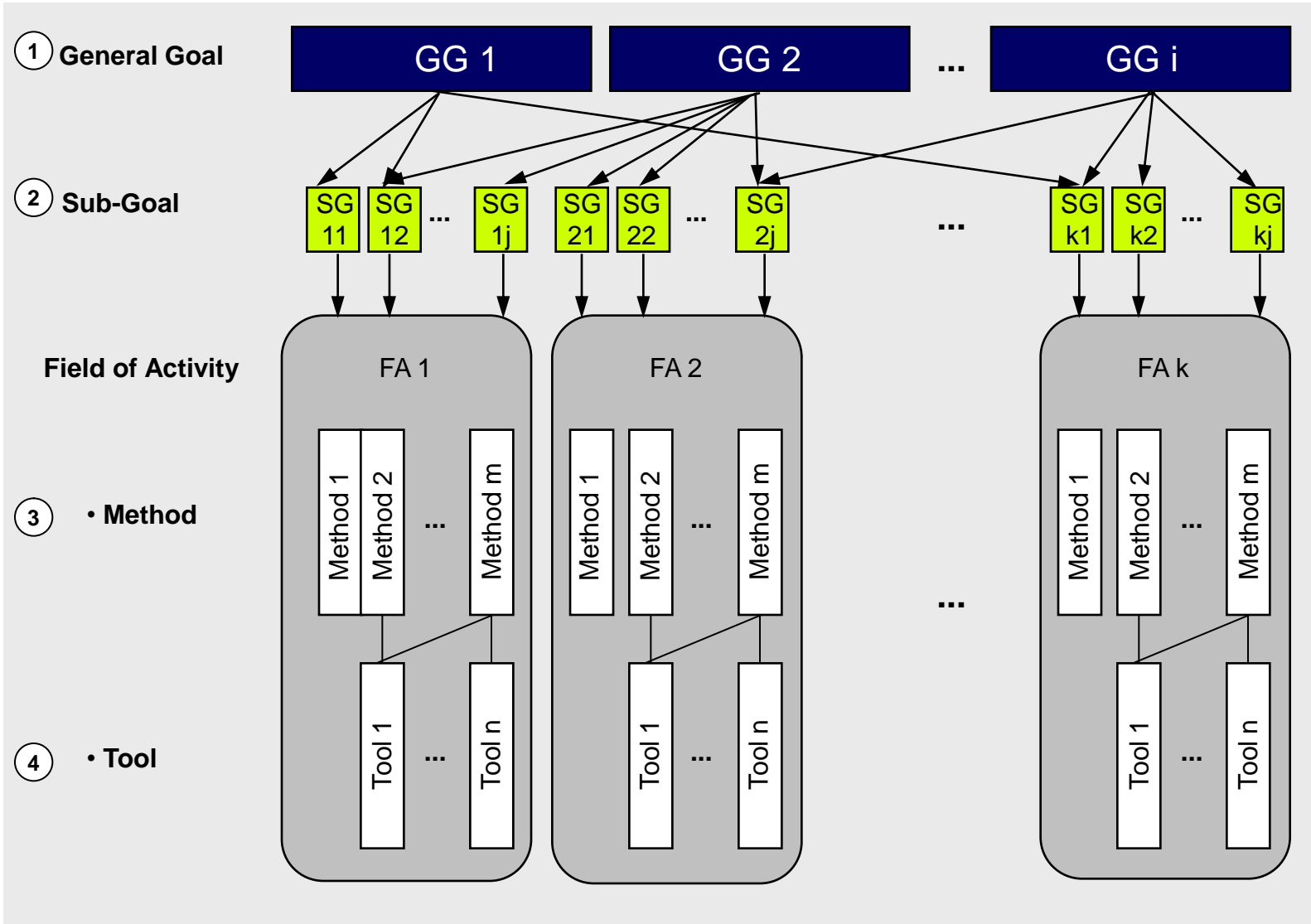


The implementation of an LPS is not just a regular rationalization project, but a fundamental change in the organization and culture of an enterprise.

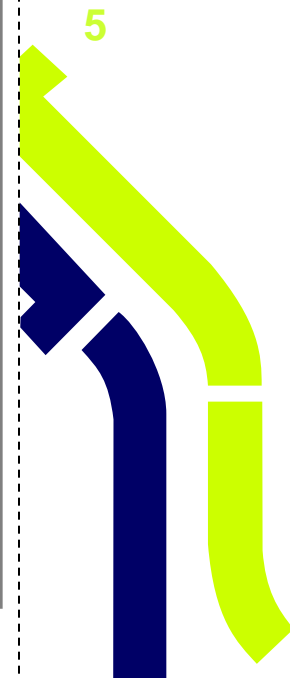
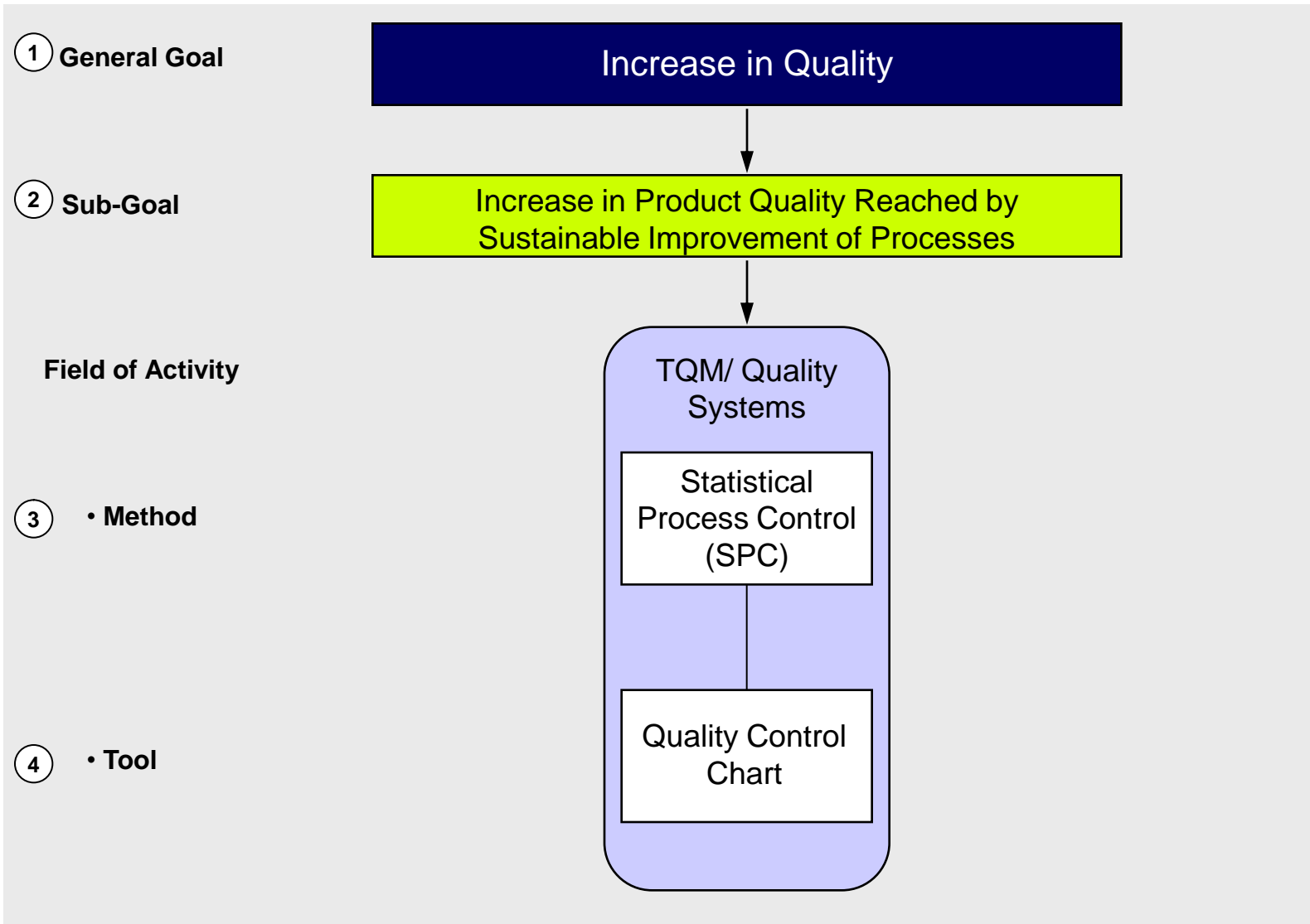
*Source: Salwiczek*



# Structure of Lean Production Systems

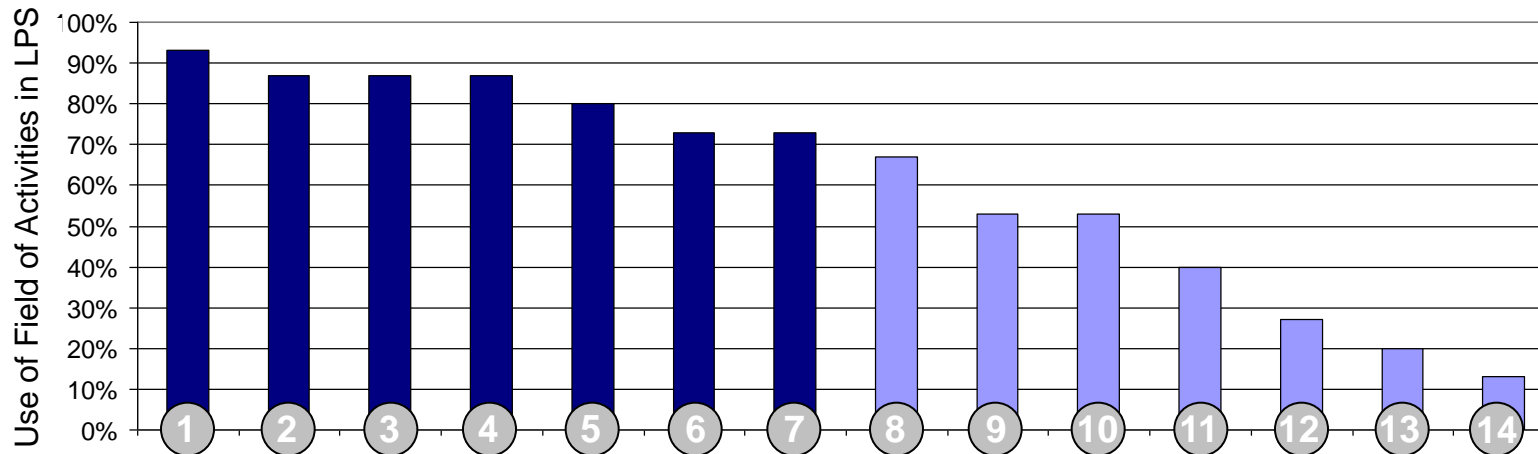


# Example for the Structure of Lean Production Systems



# Analysis of the LPS Structural Design

## - Database 17 LPS global enterprises -



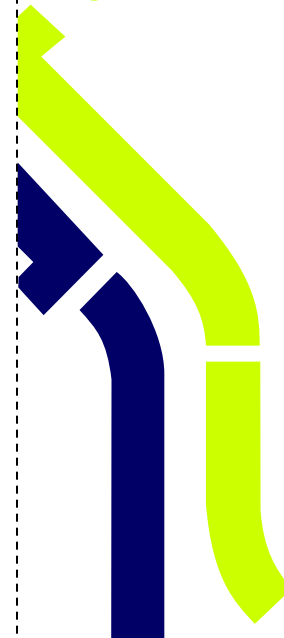
The following Fields of Activities are part of least 70% of all analyzed LPS:

1	Team Work	93 %
2	JIT/ Kanban	87 %
3	TQM/ Quality Systems	87 %
4	Visual Management	87 %
5	Continuous Improvement Process	80%
6	Total Productive Maintenance	73%
7	Human Resources Management	73%

Further Fields of Activities are:

8	5 S-Housekeeping	67 %
9	Standardization	53 %
10	Leveling/ Mixed production	53 %
11	Technology/ Manufacturing processes	40 %
12	Environment Protection	27 %
13	Process Orientation	20 %
14	Product Design	13 %

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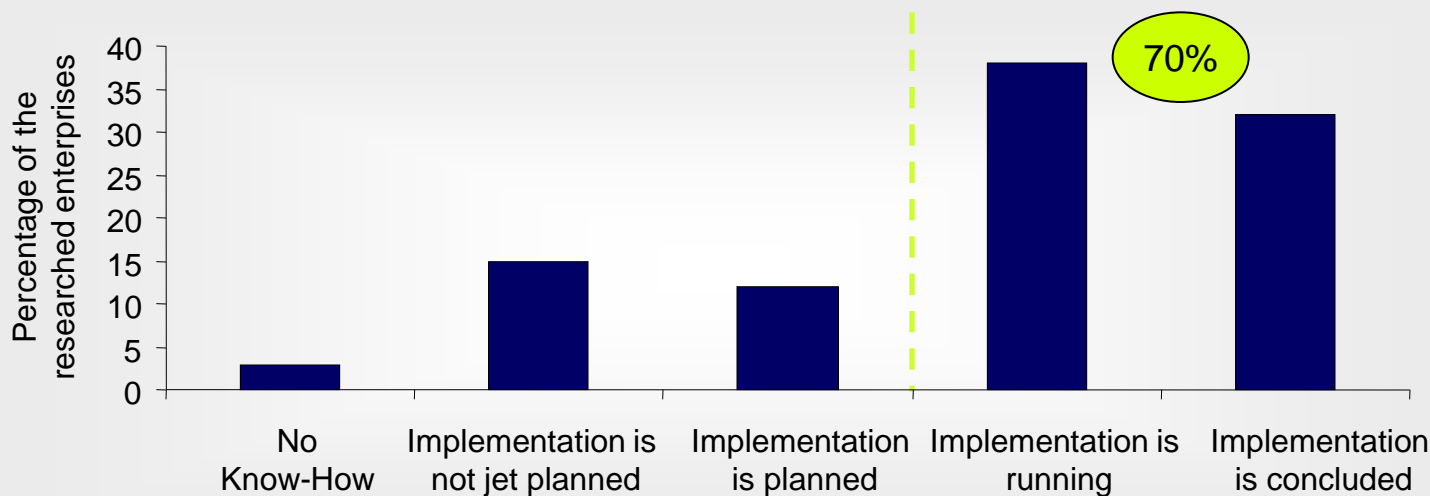


# Current Status of LPS Implementation

## - Results of a Nationwide Survey in German Production Enterprises, August 2007-

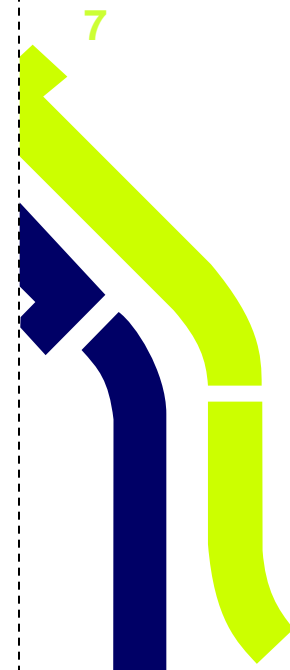
- 27 enterprises in different industry sectors and with different sizes have participated in this survey.
- 56% of the analyzed enterprises belong to the automotive supplier industry and the mechanical engineering industry.
- 77% of the researched enterprises are large-scale enterprises. Only 22% of the researched enterprises are small and medium-sized enterprises.

Source: Kessler

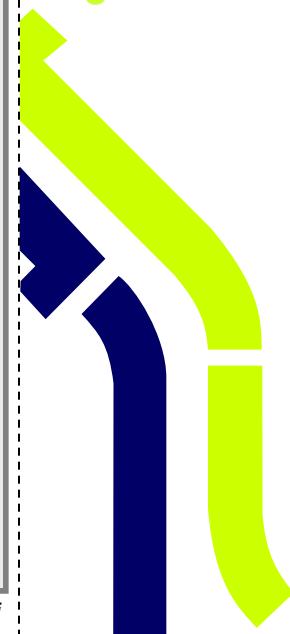
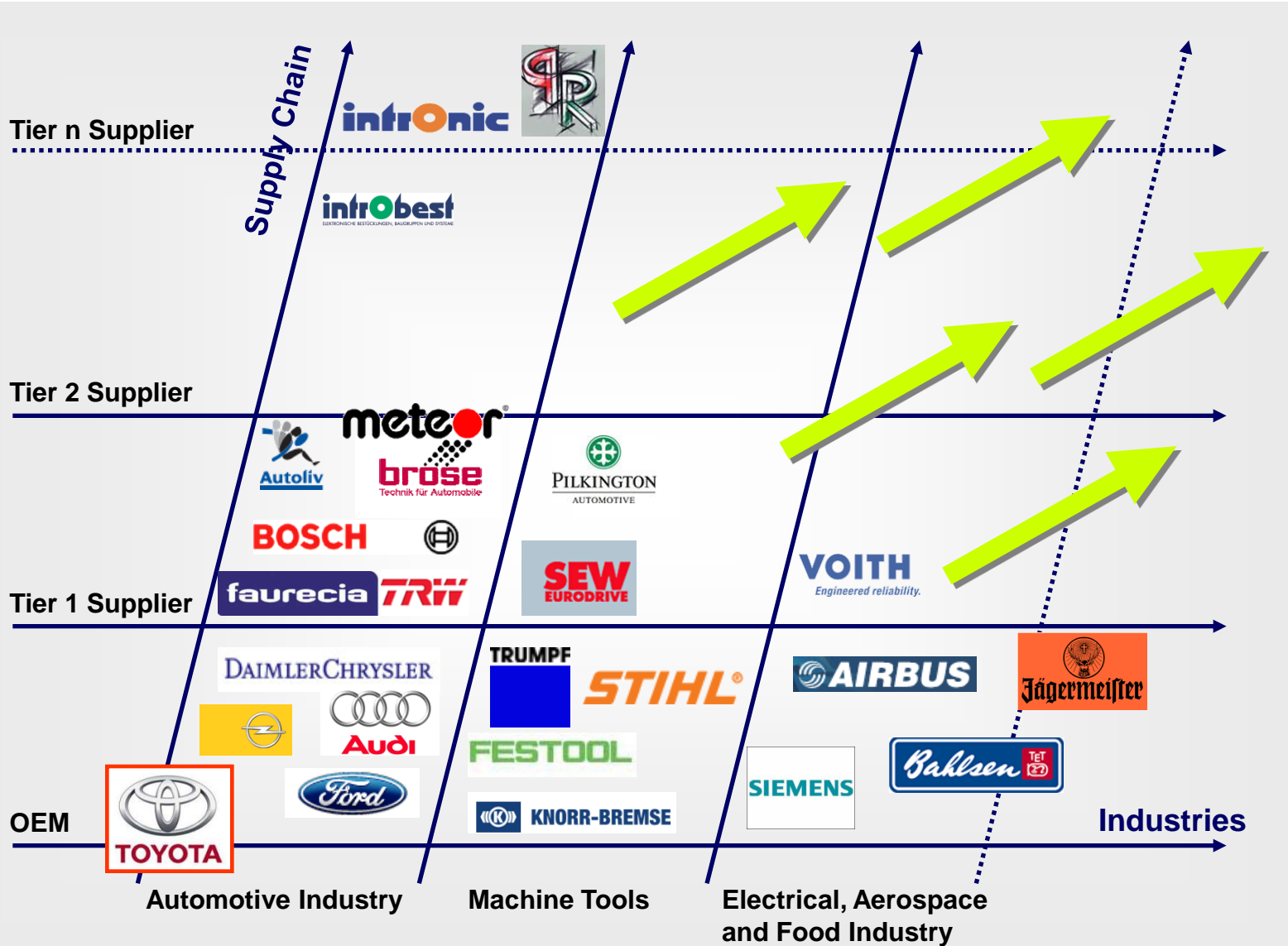


Source: Kessler

➔ Almost all researched enterprises (70%) have implemented an LPS or are in the implementation phase.



# Spread of LPS Implementation





# Successful Enterprises in Germany Implement Lean Production Systems



Winner!

- 2008** BMW AG, Dingolfing
- 2007** Siemens AG, A&D AS EWA TOP, Amberg
- 2006** Rational AG, Landsberg/Lech
- 2005** Cherry GmbH, Auerbach
- 2004** Siemens AG, Automation & Drives, Erlangen Plant
- 2003** Fujitsu-Siemens Computers GmbH, Augsburg

Source: Die Beste Fabrik

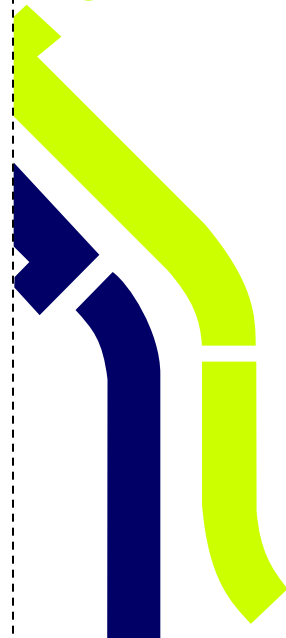


Winner!

- 2008** Festool GmbH, Neidlingen
- 2007** Robert Bosch GmbH, Automotive Electronics Division, Ansbach Plant
- 2006** Siemens AG, Automation & Drives, Erlangen Plant
- 2005** Johann Winklhofer & Söhne GmbH & Co KG, Landsberg/Lech
- 2004** Siemens AG - Medical Solutions, Forchheim
- 2003** Siemens VDO Automotive AG, Babenhausen

Source: Die Fabrik des Jahres

Alle these **successful enterprises** have implemented a Lean Production System (or at least parts of an LPS) during the last years!

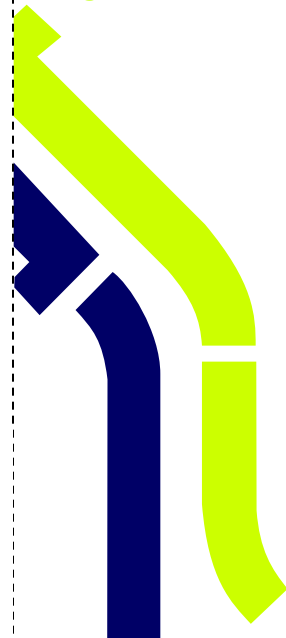


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