Standardisation in Companies and Markets

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  - Economics: Markets
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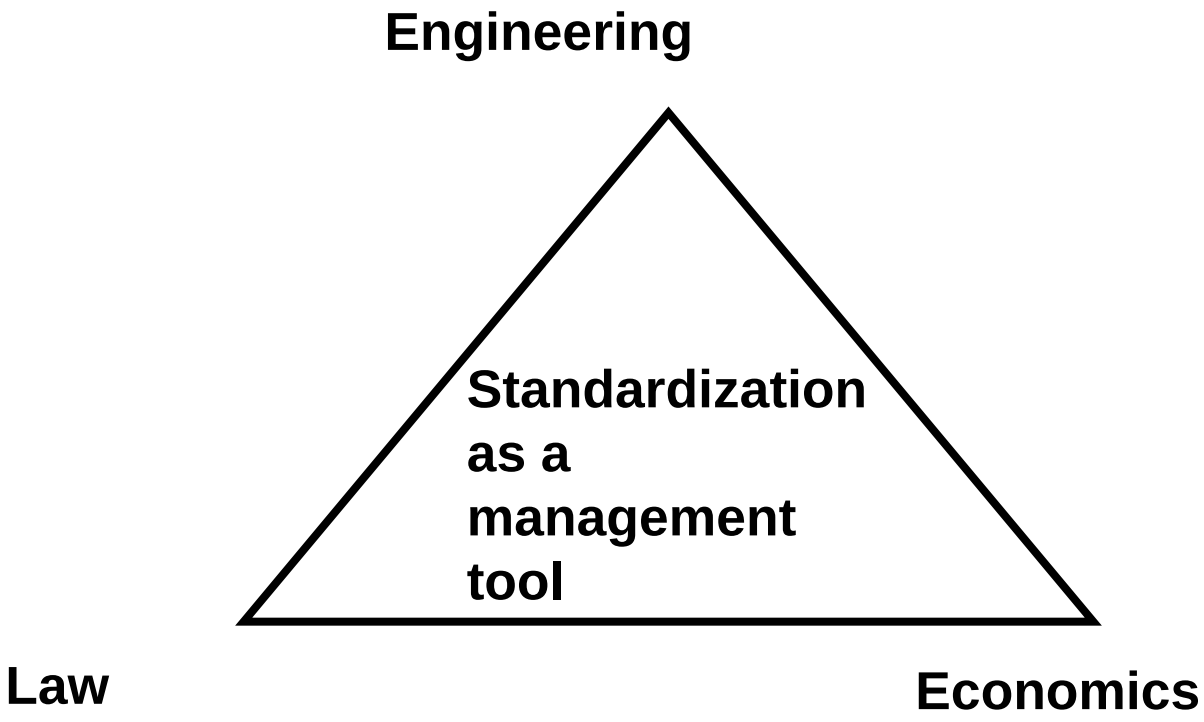
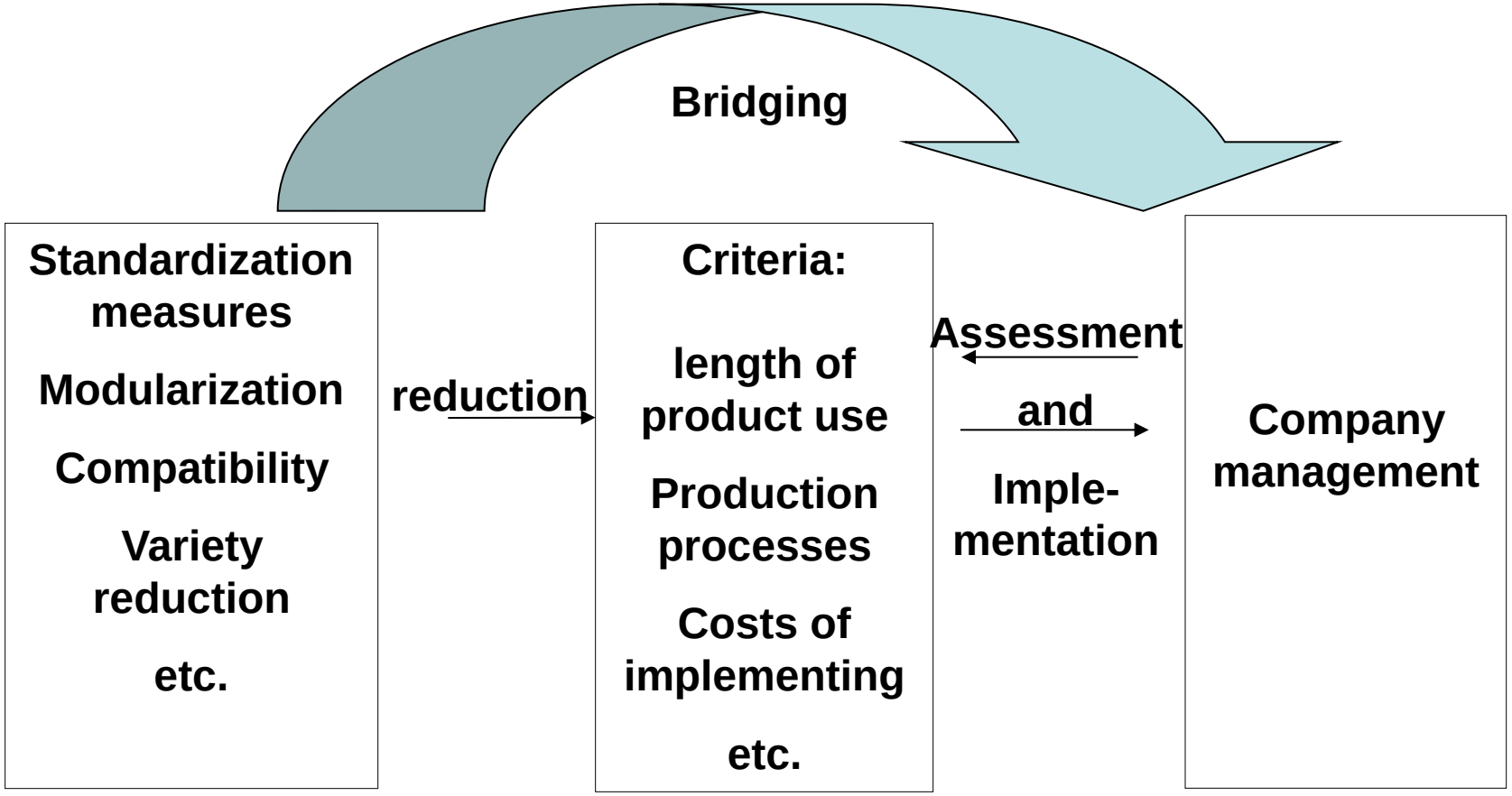
Academic Triangle of Standardization

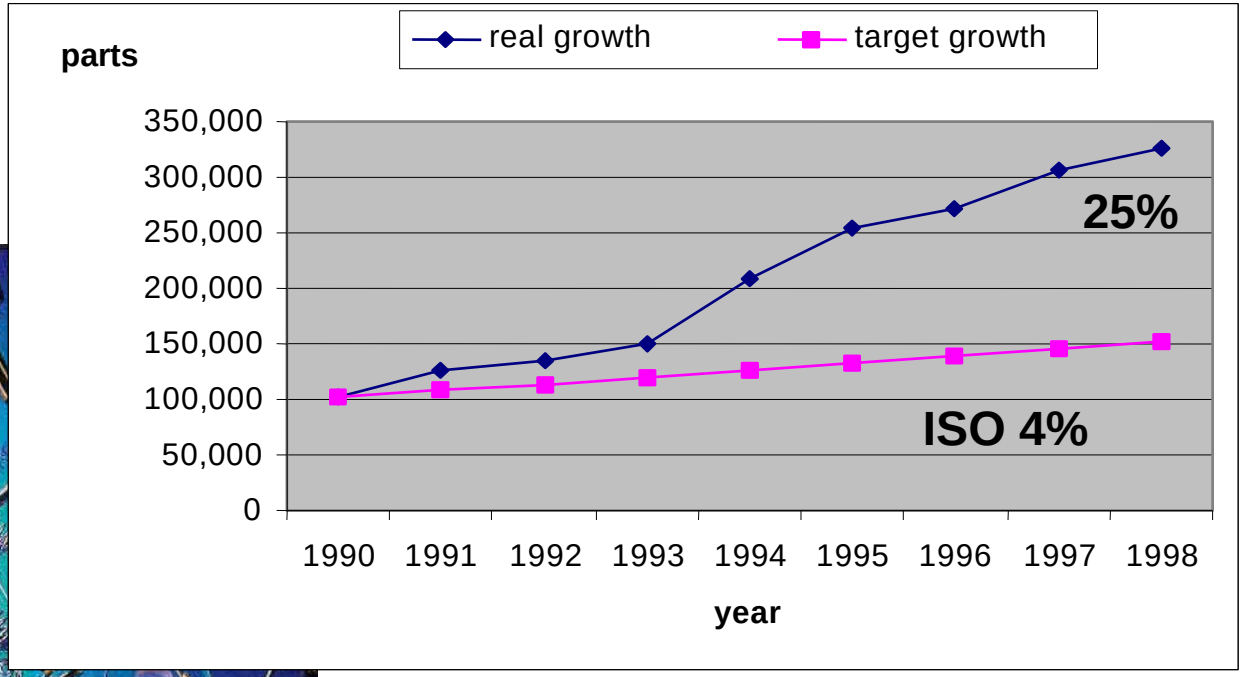



Bridging
Standardization measures
Modularization
Compatibility
Variety reduction
etc.
reduction
Criteria:
length of product use
Production processes
Costs of implementing
etc.
Assessment
and
Imple-mentation
Company management

Economic Effects of Standardization

- reduce external effects
  - enviromental, health, safety standards
    - CE marking
- reduce transaction costs
  - quality standards
    - ISO 9000ff.
  - compatibility standards
    - technical interfaces
- economies of scale
  - variety-reducing standards
    - modularization of products

Growth in the number of material master data compared with the ISO rate



Examples for price relations in the aircraft industry between drawing and standard parts

Type of component	Price for drawing part	Price for standard part	Ratio
Washer	16.04 DM	0.128 DM	125.3
Bolt	6.30 DM	4.43 DM	1.4
Set screw	50.95 DM	1.11 DM	45.9
Screw	42.45 DM	17.83 DM	2.4
Pivoting bearing	588.75 DM	37.70 DM	15.6
Bush	15.00 DM	4.50 DM	3.3

The variety growth rates are distributed in a range from 2% up to more than 10% per year. There are only very few material classes with products like micro-circuits in which a larger annual increase in variety growth was found.

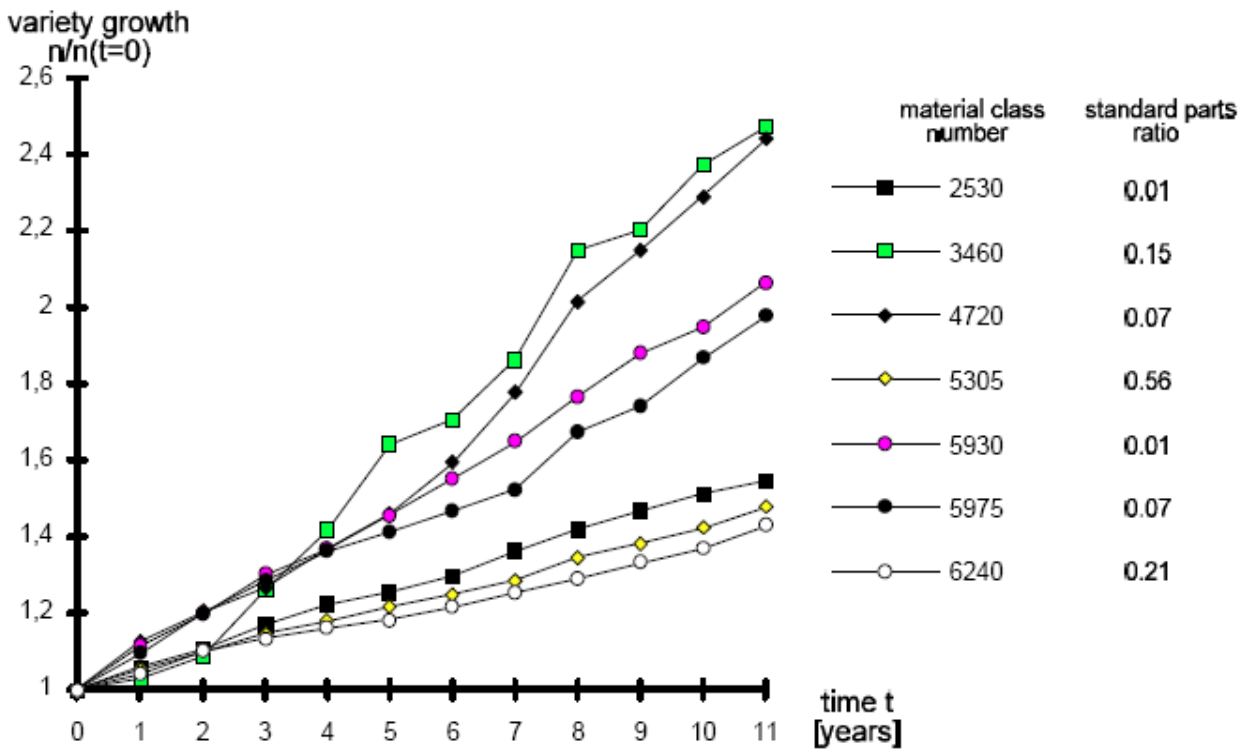
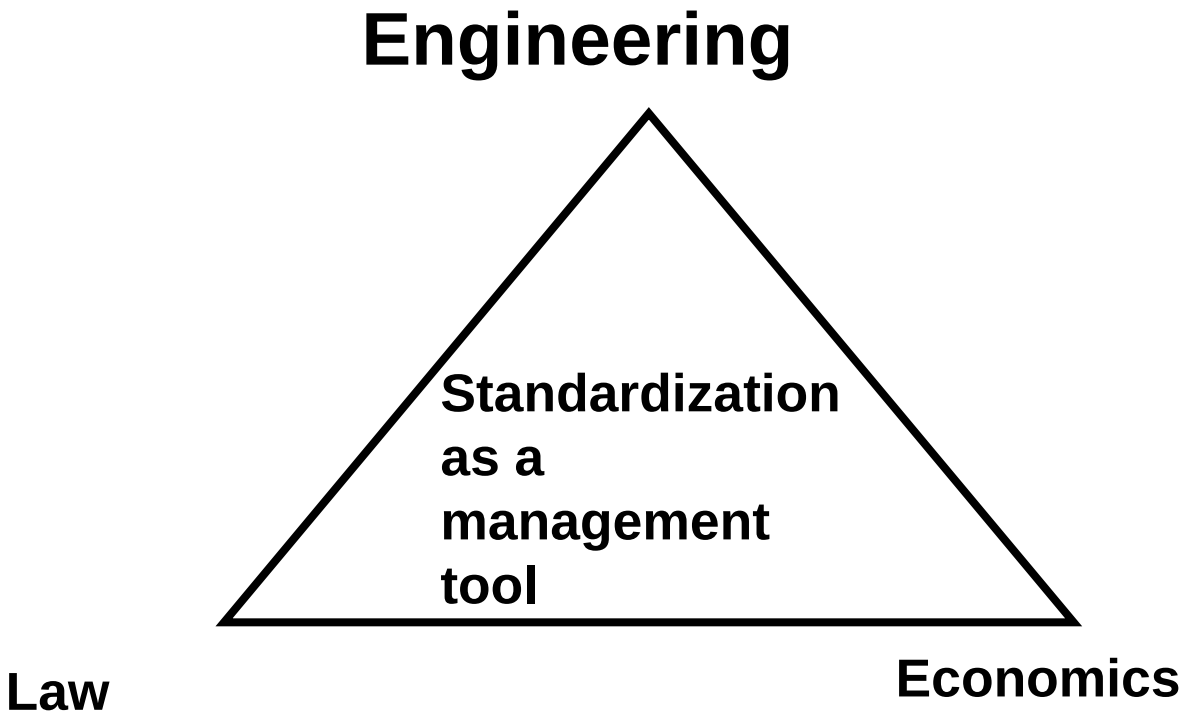
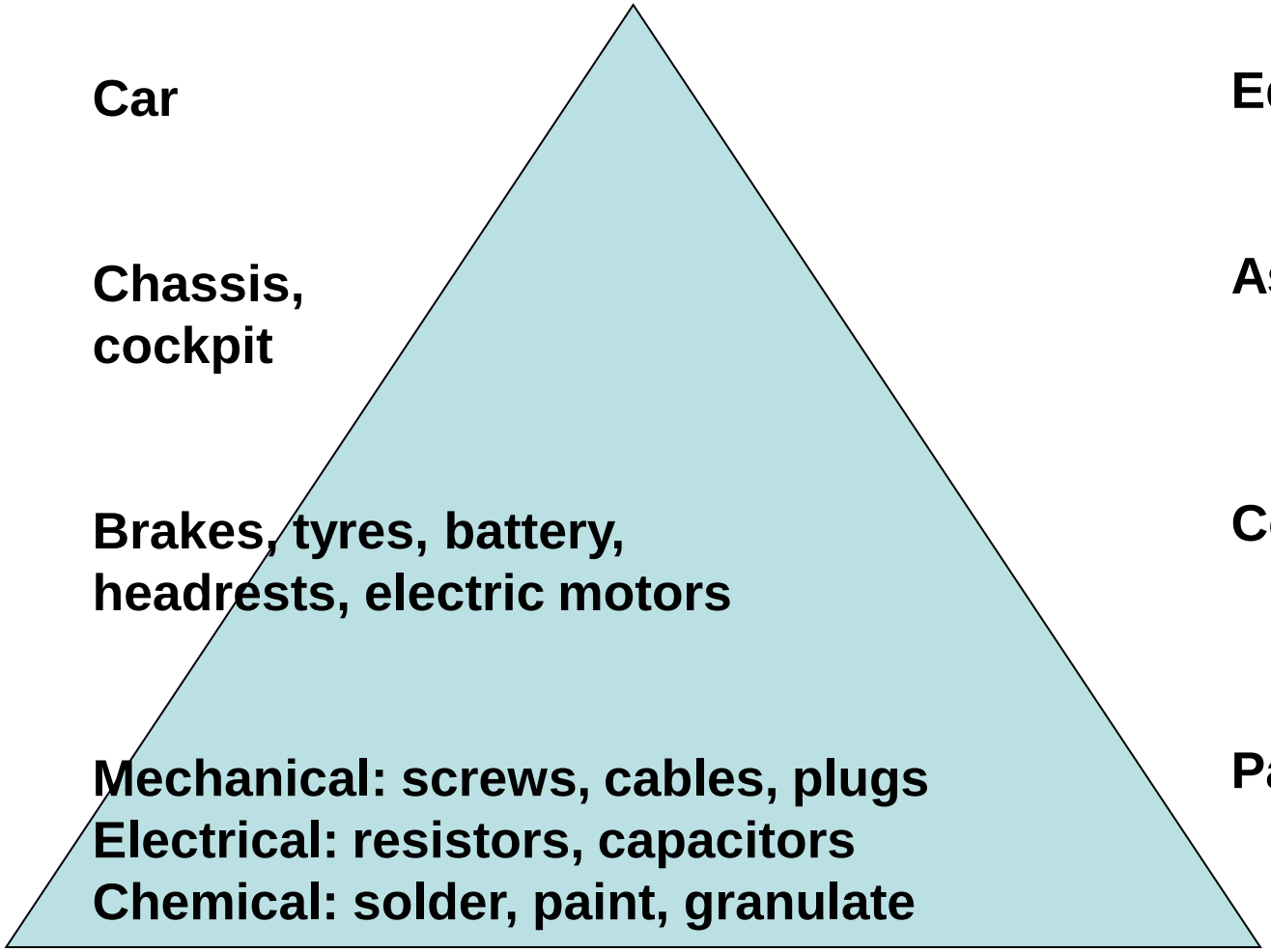


Figure 1: Variety growth in material classes

Academic Triangle of Standardization



Vertical Modularity at Different System Levels



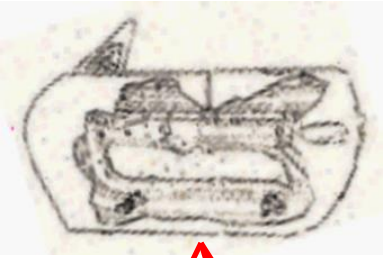
Equipment level

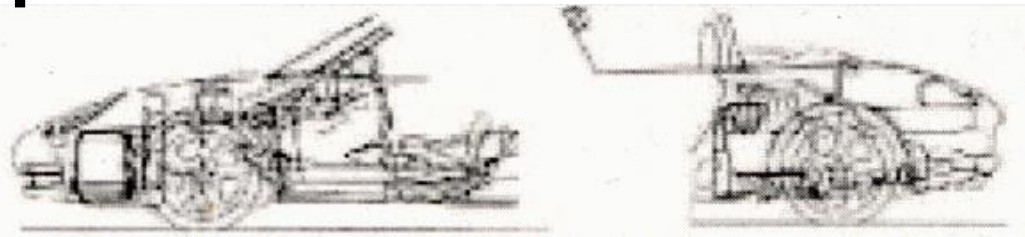
Assembly level

Component level

Part level

Two car types – one front end





Porsche Boxster mid-engine

Porsche 911 with rear engine

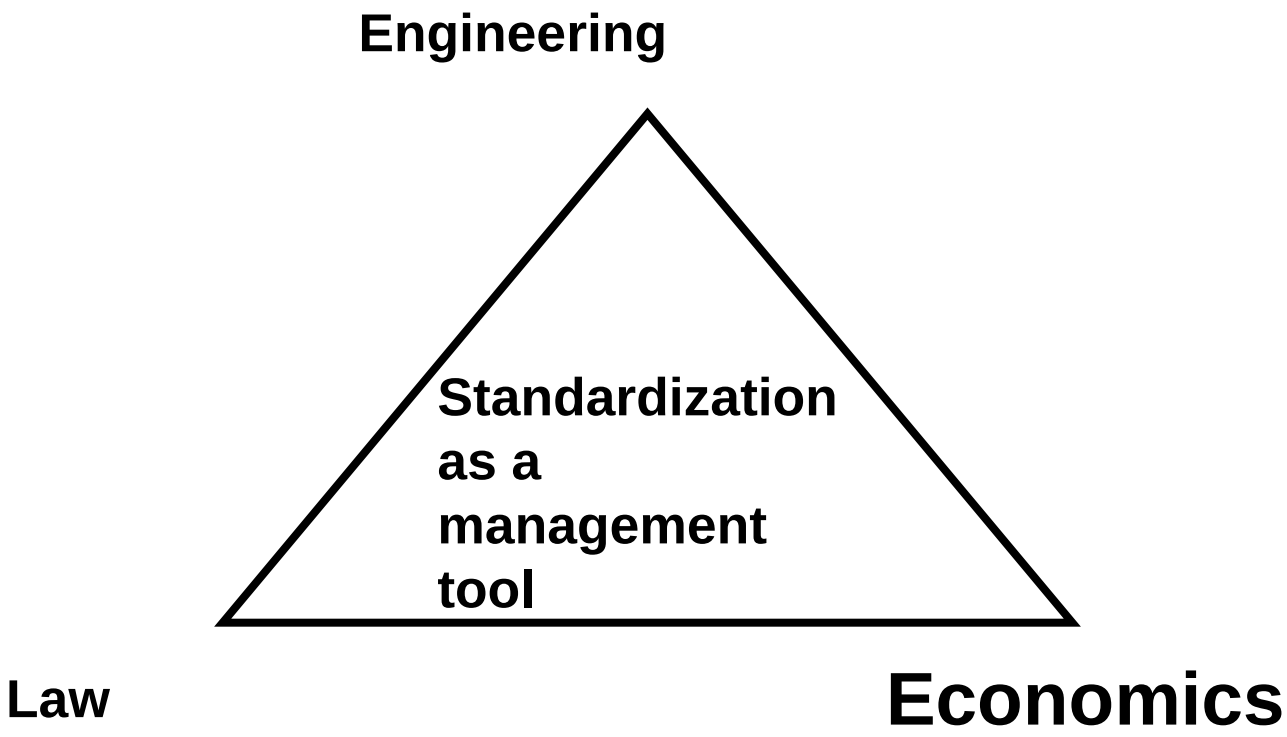
One door for

3 cars:

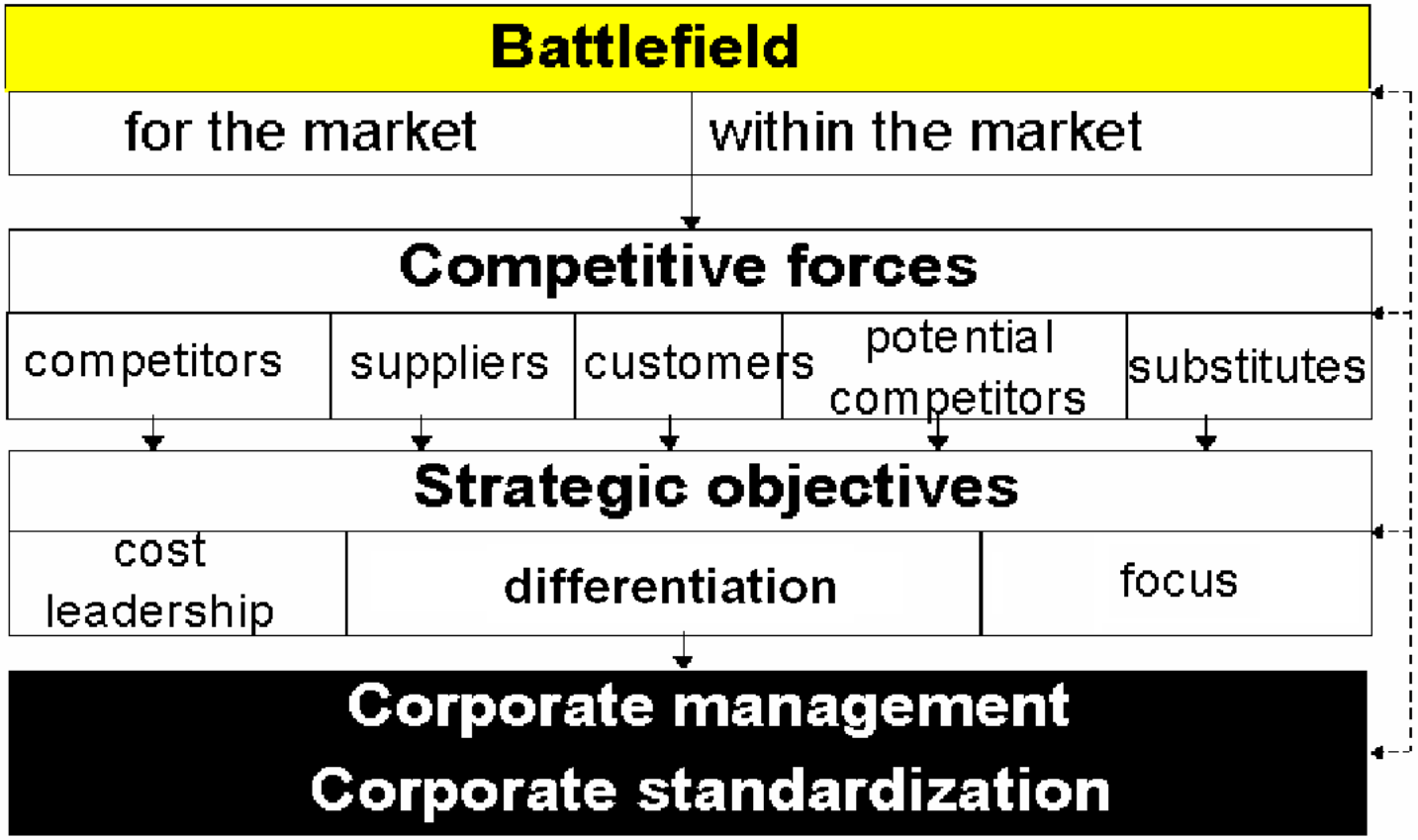
- Boxster
- 911 Coupé
- 911 Cabrio

<u>Cockpit:</u>
One common basic module
<u>Wheel suspension:</u>
Modular axle structure
<u>Engine:</u>
Conceptionally identical engines

Academic Triangle of Standardization

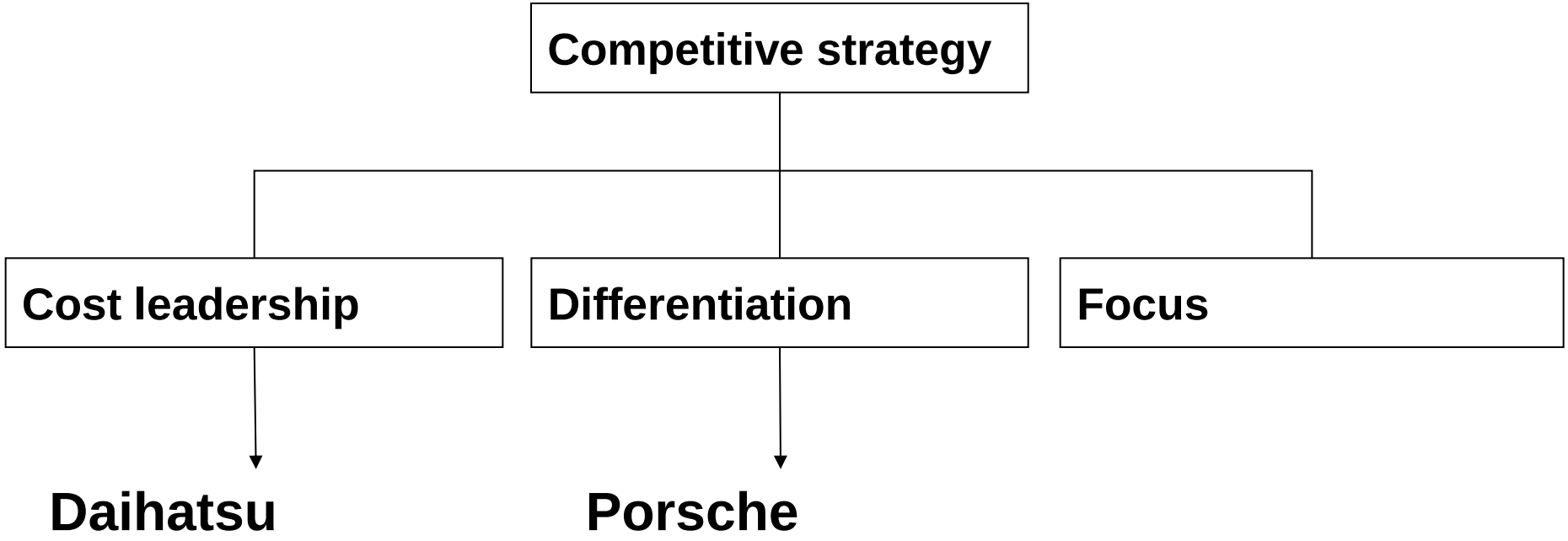


Strategic behaviour of enterprises in terms of standardization



The connection between competitive forces, strategic objectives and corporate standardization

Porter's First Typology of Singular Competitive Strategies

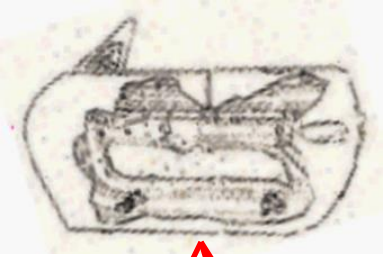


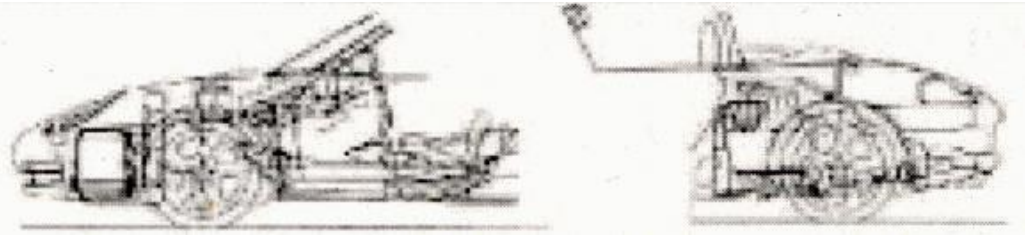
Cost leadership: An enterprise structures its value-added process in such a way that it can produce more economically than the competition on a lasting basis. The product demand in these market segments is generally elastic.

Differentiation: An enterprise is able to distinguish its products and services from those of other enterprises. The producers of discriminated products assume a relatively inelastic buying pattern amongst their target group.

Focus: An enterprise concentrates its activities on market niches, special groups of customers or geographic defined markets.

Two car types – one front end





Porsche Boxster with mid-engine

Porsche 911 with rear engine

One door for

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Cost Leadership

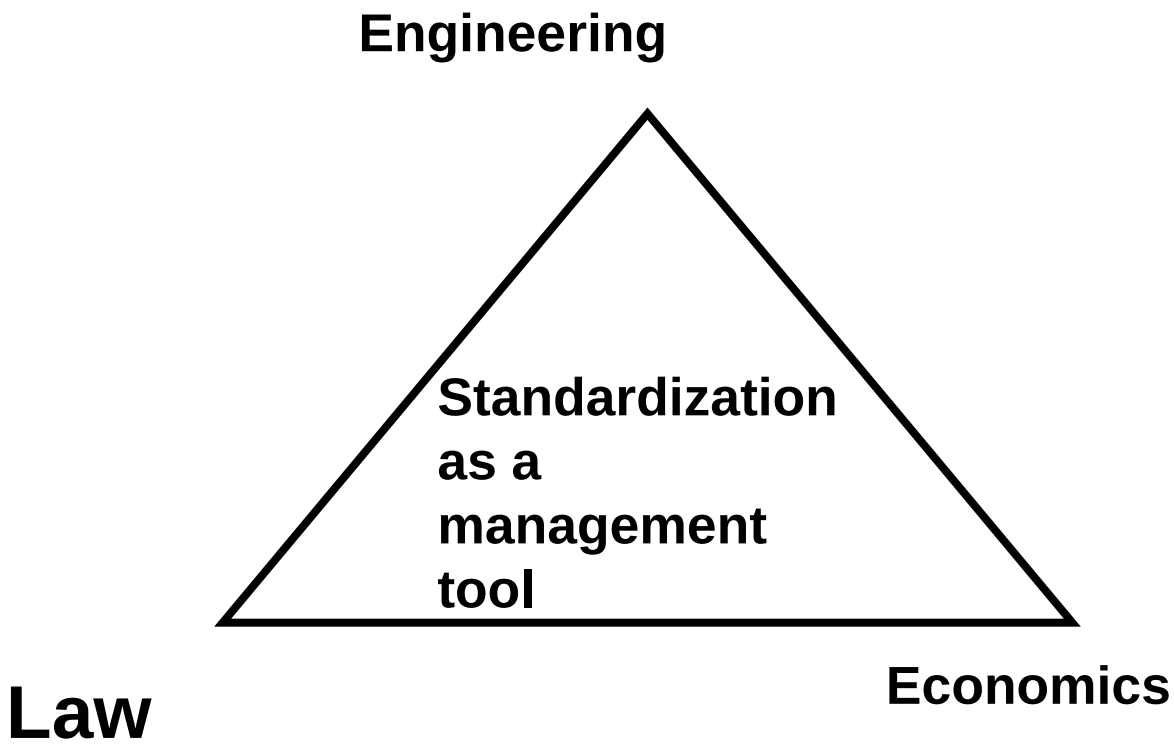
Daihatsu

lower price segment

8.444 € *

*
http://www.daihatsu.de/index.php?seite=b2c_sondermodelle&navigation=1902&kanal=html

Academic Triangle of Standardization



Access to the EU Market

The EU, as outlined in the "Treaty on European Union" of 01.11.1993 (also called "Maastricht Treaty") and amended by the Amsterdam Treaty (02.11.1997), is based on three core elements or pillars.

EU

EC

- **The "Treaty on the European Coal and Steel Community" (ECSC Treaty) of 18.04.1951.**
- **The "Treaty on the European Economic Community" (EEC Treaty, from 1987 EC Treaty) from 25.03.1957.**
- **The "Treaty on the European Atomic Energy Community" (EURATOM) of 25.03.1957.**

- **The common foreign and security policy.**

- **Cooperation on issues of justice and domestic policy.**

The idea:

- common home market
- region without inner borders
- free traffic of:
  - *persons*
  - *goods*
  - *services*
  - *capital*

28 countries

Decision-making bodies in the EU

Decisions are made by:

- **The European Parliament**
- **The EU Council of Ministers**
- **The Commission of the EU**

- **The European Court of Justice**
- **The Court of Auditors**
- **The European Council**

The Basics

Development of mutual confidence through *harmonization* and *standardization* by

European Directives **and** **European Standards**

Today both of them already regulate:

- **the accreditation system**
- **the certification system**
- **conformity declarations**
- **technical specifications**

‘Old approach’

Before 1985, Member States imposed their own technical specifications and conformity controls for manufactured products. Any technical harmonisation across the EU relied on all agreeing directives for individual products.

From 1985, EC directives laid down common technical requirements for each product category and procedures for assessing conformity.

National authorities issued certificates of conformity, in accordance with directives, before products could be placed on the market.

Technical requirements laid down in directives had to be continually updated, to keep pace with technological progress.

A 1985 white paper highlighted the need for radical change and urgent action: over 250 legislative proposals needed to complete single market by 31 December 1992.

Until 1987, Member States had to approve directives unanimously.

In 1987, qualified majority voting replaced unanimity.

‘New approach’

EU directives specify only essential requirements and conformity assessment procedures to ensure a high level of protection (health, safety, consumers, environment, etc).

Essential requirements worded so as to produce binding obligations that can be uniformly enforced by Member States.

Directives deal with large families of products and/or hazards.

Commission mandates European standardisation bodies 1 to define the detailed technical solutions (harmonised standards), which manufacturers may apply on a voluntary basis.

Manufacturers may choose whether they apply these harmonised standards (or other technical specifications), provided their products satisfy essential requirements.

Where harmonised standards are complied with, a product is presumed to meet essential requirements. However, manufacturers are legally responsible for ensuring that all products placed on the market comply with the directives.

Member States must ensure that non-conforming products are withdrawn from the market (market surveillance).

‘New approach’

Directives also lay down conformity assessment procedures for evaluating compliance with the directives, taking into account identified potential risks.

Conformity assessment is carried out by testing and certification bodies (‘notified bodies’), designated by Member States within their jurisdictions and acting under their responsibility.

CE marking symbolises conformity with all relevant Community rules - Member States recognise that a CE marked product placed on the market anywhere in the Community complies with their own national laws.

European Committee for Standardization (CEN), European Committee for Electrotechnical Standardization (CENELEC), European Telecommunications Standards Institute (ETSI)

New Approach (since 1985)
Harmonization of laws

EC Harmonization Directives: essential safety requirements

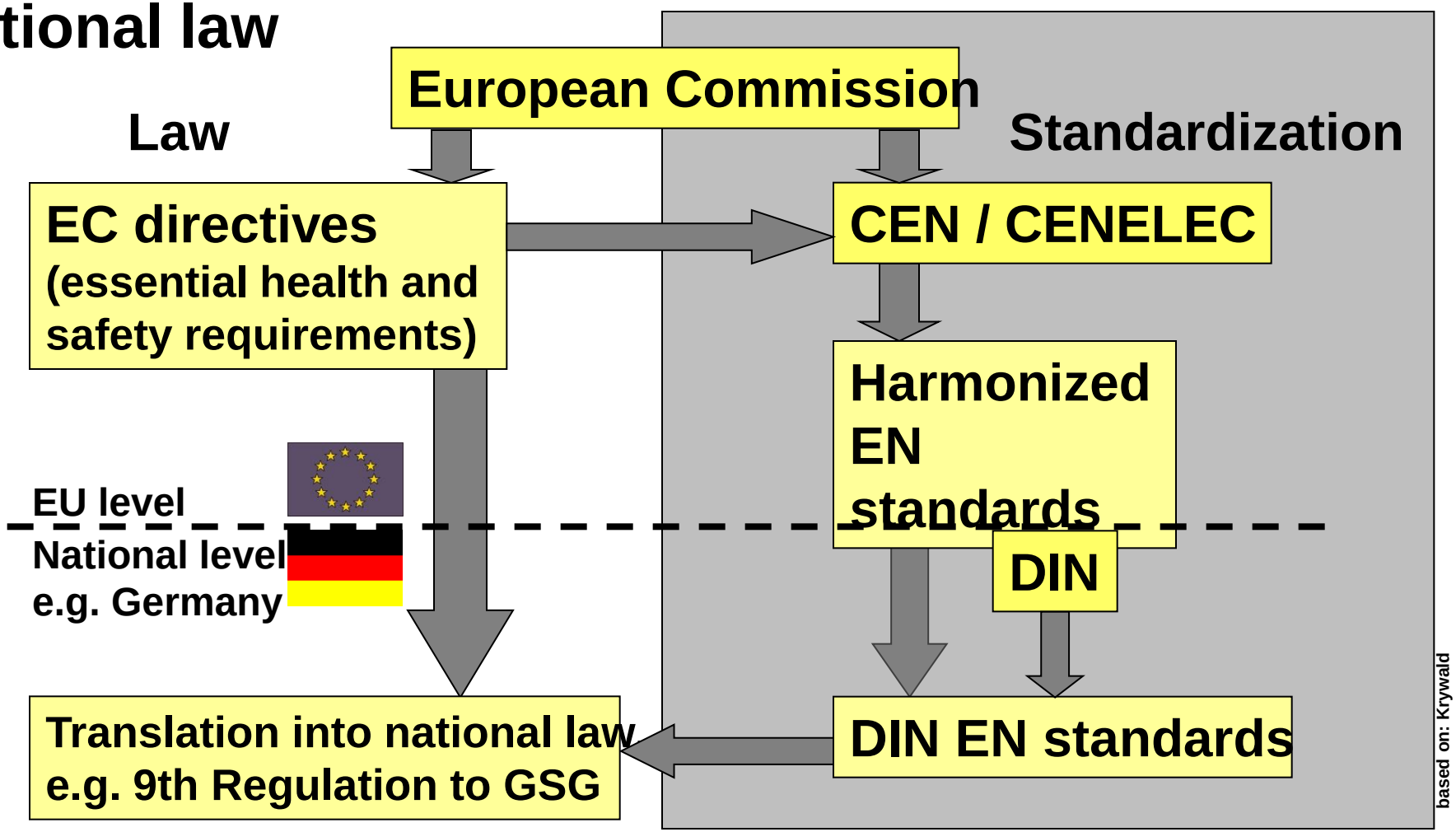
Harmonized European standards: technical specifications

Conformity assessment procedure: proof of conformity (Modular Approach)

Declaration of conformity, CE Mark

Market access

European standardization / translation to national law



CE MARKING

A *trade barrier* for foreign products?

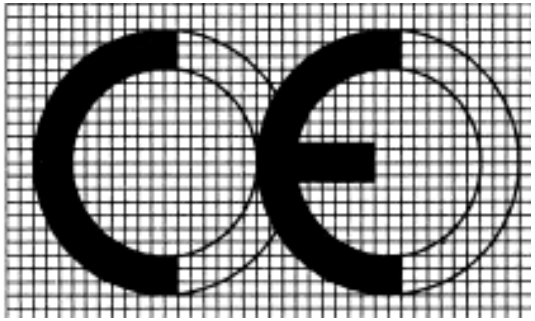
or

A *passport* for products to enter the EU?

based on: SGS TÜV Saarland GmbH

Aims of harmonization

Harmonization of the different national regulations "machine for safety" at a high level, i.e.



The same product model should be marketable throughout the entire EU.

All directives contain the binding instruction for all EU member states that they must neither forbid nor obstruct equipment bearing the conformity mark from being placed on the market or being put into service.

The Modular Framework

A

EU conformity declaration for manufacturer

Aa

Same as A but with additional product test by notified body

Development & Design

B

EU Type examination

C

EU-conformity declaration for approved type

D

EU confor. declar. for approv. type

QS for prodn. (EN 29002)

E

EU conformity declaration

QS for product (EN 29003)

F

EU Product verifn.

Production

G

EU

Unit

verification

H

EU conformity declaration

Quality Management System (EN 29001) Manufacturer runs a certified Quality Management System

ILIAS - Netscape

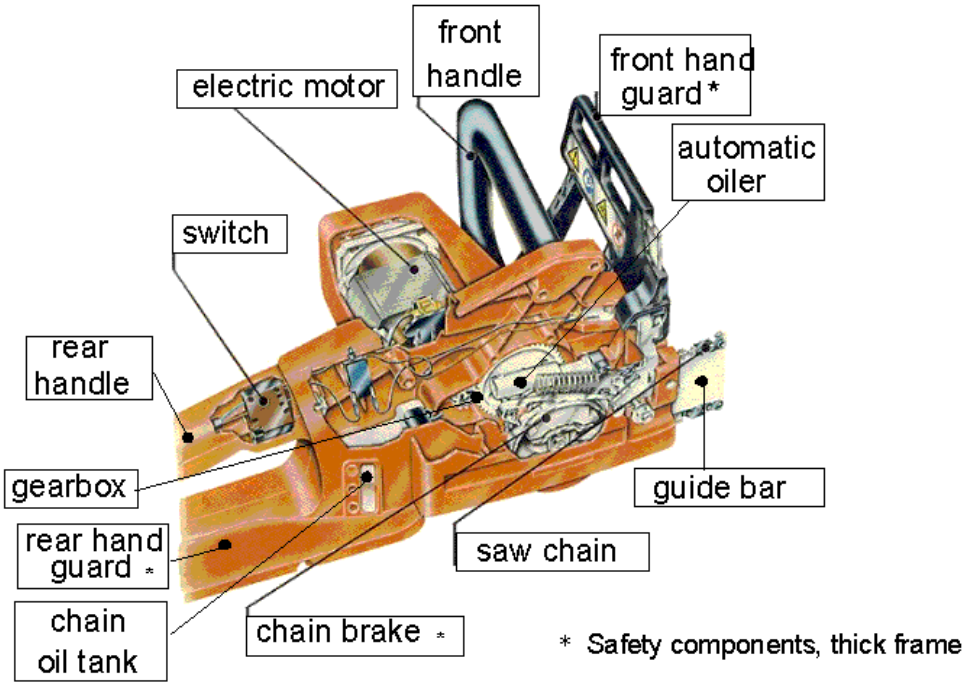
Datei Bearbeiten Ansicht Gehe Communicator Hilfe

Zurück Vor Neu laden Anfang Suchen Guide Drucken Sicherheit Shop Stop

Willkommen auf Professur für N

Lesezeichen Adresse: http://ilias.unibw-hamburg.de/ilias/course.php?mode=show_mm&mm_id=623&mm_inst=123 Verwandte Objek

Main components of the chain saw



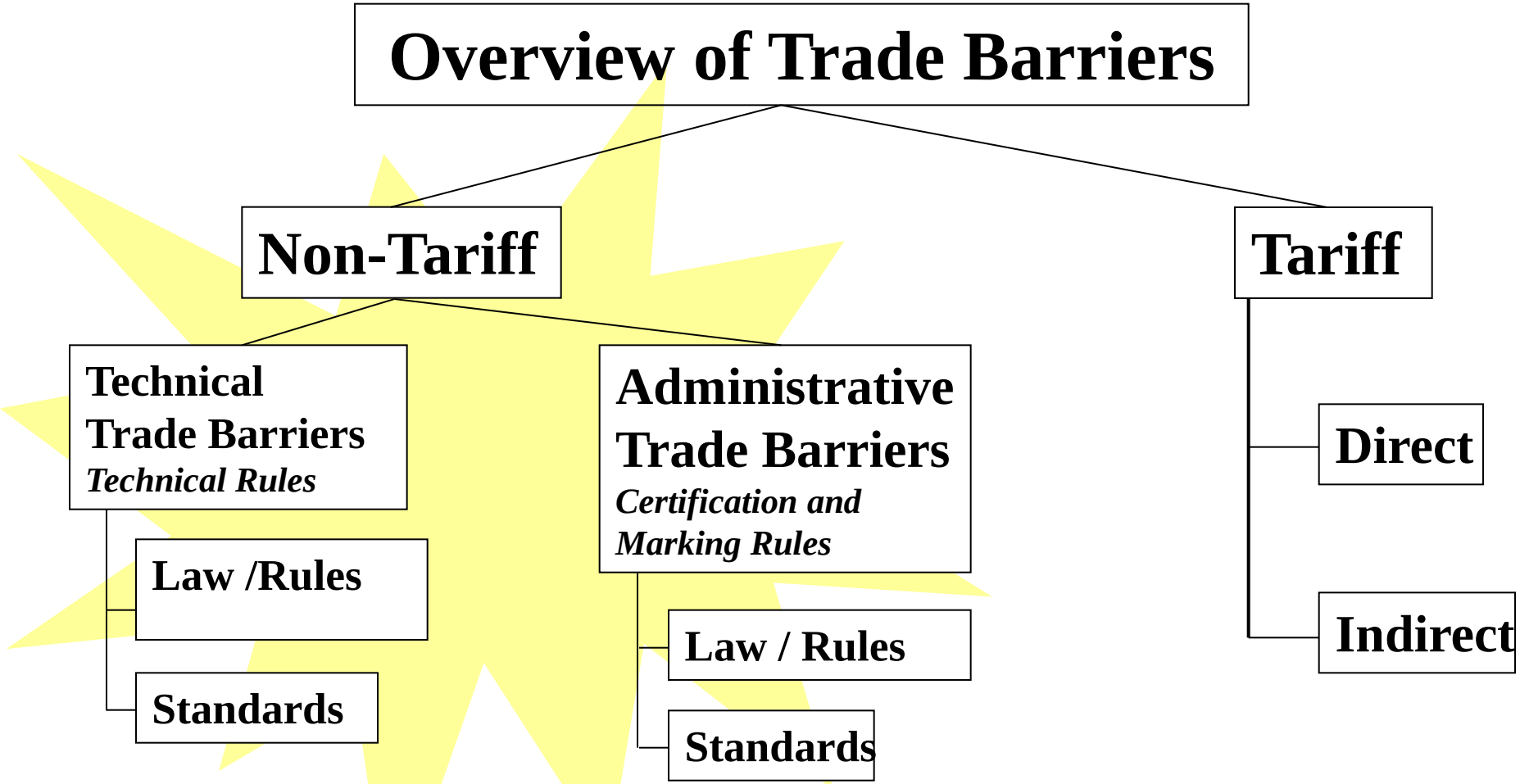
* Safety components, thick frame

Dokument: Übermittelt

European standards bodies

CEN	Comité Européen de Normalisation
CENELEC	Comité Européen de Normalisation Electrotechnique
ETSI	European Telecommunications Standards Institute

Access to the EU Market



based on: SGS TÜV Saarland GmbH

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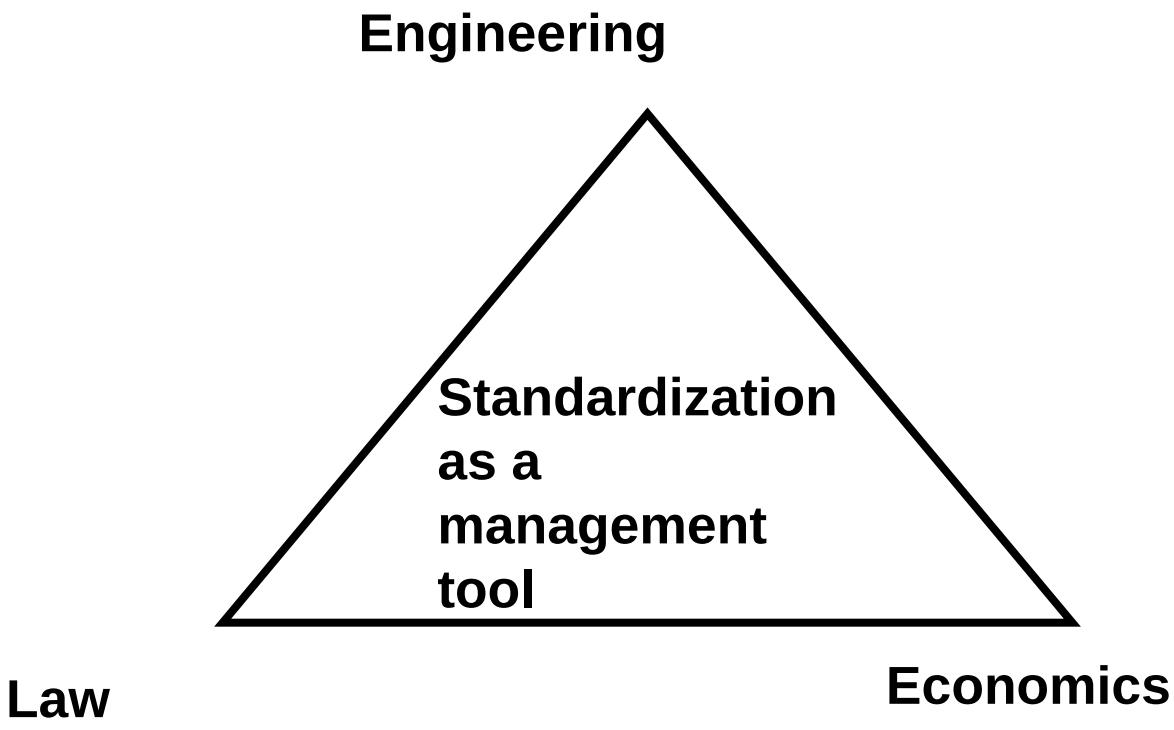

The Curriculum Units for the textbook and web content www.pro-norm.de

01 Fundamentals of standards and standardization
02 History of standards and standardization – an introduction
03 Economic aspects of standardization
04 Development of standards
05 Product development and design
06 Standardization inside a company – a strategic perspective
07 External standardization as a company strategy
08 Standardization and innovation
09 International standardization
10 Standardization and international law
11 The European standardization regulatory framework

The Curriculum Units for the textbook and web content www.pro-norm.de

12 The European Union and its standardization policy
13 Standardization and law in the Federal Republic of Germany
14 The EU and its New Approach
15 Conformity assessment
16 Standardization issues in developing countries and countries in transition
17 Metrological measurement
18 ICT standardization
19 Case study: Mobile telecommunications in Indonesia
20 Case study: Quality management and ISO 9001 development
21 Case study: ISO 14001 implementation
22 Case study: Standardization in agriculture

Thank you very much for your attention!

Please raise further question and make comments!