



Federal Ministry
for Economic Affairs
and Energy

Industrie 4.0 – Goals, Policy Instruments, Challenges and Outcomes

Markus Heß, Deputy Director General Industrial Policy,
Federal Ministry for Economic Affairs and Energy

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Goals

- Strengthen Competitiveness of Manufacturing Sector in Germany
- Germany / Industry in Germany shall become
 - Leading Market for Industrie 4.0 applications and
 - Leading Provider of Industrie 4.0 solutions.

Benefits for Enterprises and Society

The Vision for the 4th Industrial Revolution

Economic

- > Individual products under the conditions of mass production
- > Increased productivity and flexibility: minimize time to market
- > Value generating processes are optimized to customer demand in real-time
- > Growth potential up to 425 billion Euro until 2025.



Environmental

- > Energy- and resource-efficiency (up to -50%)
- > Increased Sustainability (Circular Economy)
- > Compatible with urban life = clean production comes back to the city centers

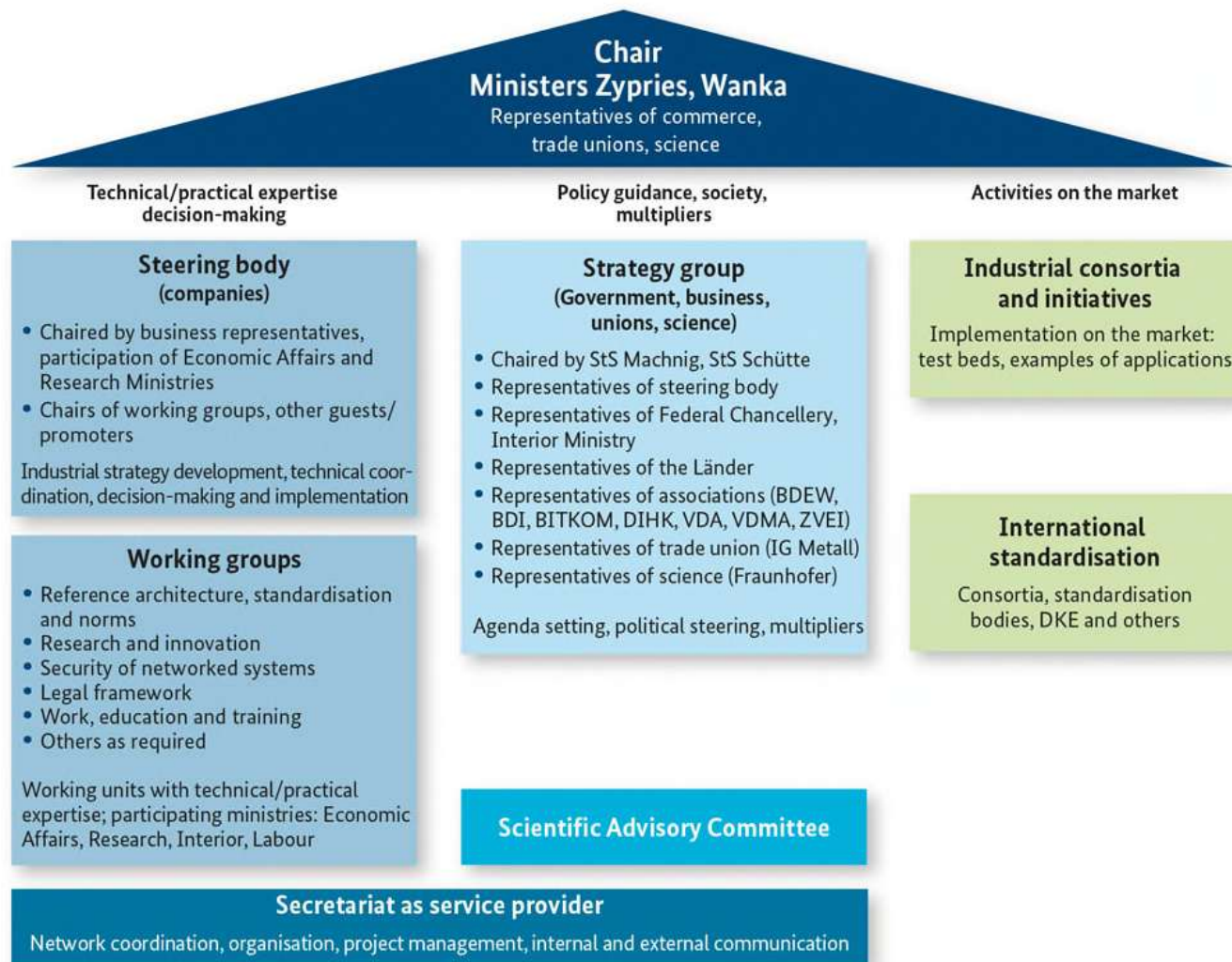


Social

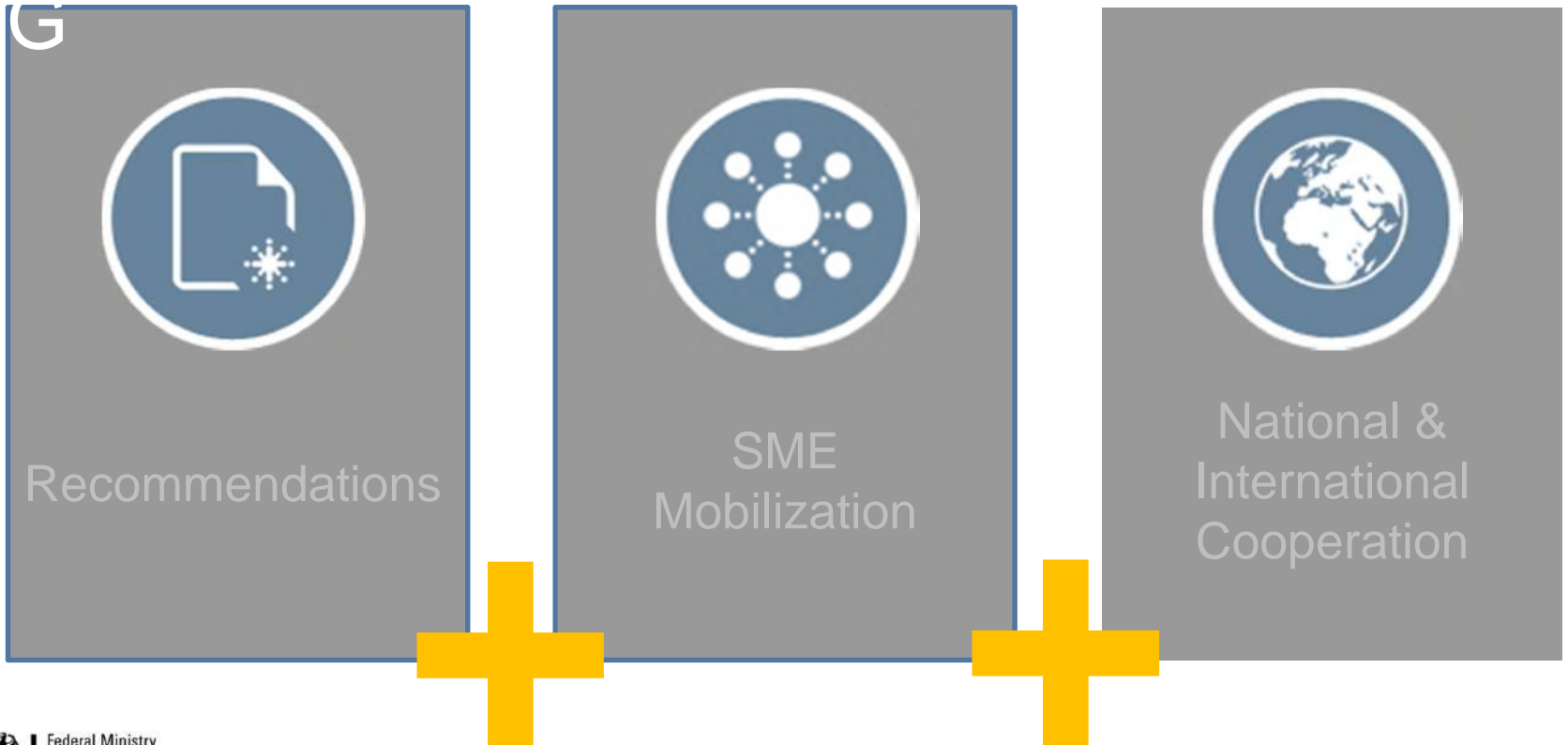
- > Smart assistance systems support employees
- > “Better Work”: Work-life-balance and appeal of work
- > Autonomy for social inclusion



Policy Instrument - Plattform Industrie 4.0



Fields of Action of Plattform Industrie 4.0 & Government



A. Recommendations - 5 Working Groups

**Reference
architectures,
standards and
norms**

**Research and
innovation**

**Security of
networked
systems**

**Legal
Framework**

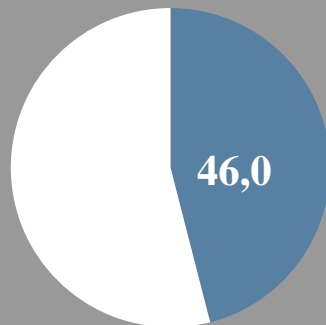
**Work, education
and training**

Example – Challenge Labour Market

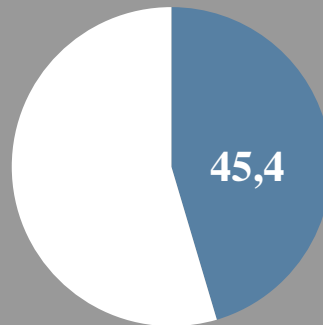
What profiles of requirements are directly affected by substitutability?

Share of activities that can already be replaced by machines today (in percentage)

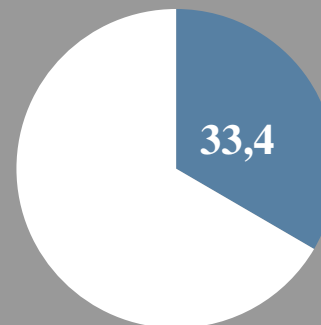
Helping Professions



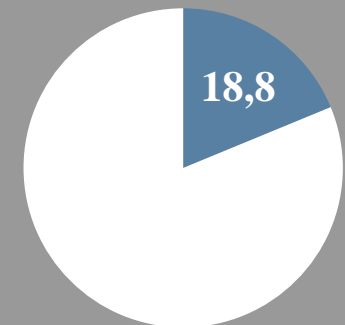
Skilled Employee




Specialists



Experts



 potential of substitutability

**relating to all ca. 3900 examined professions,
not only industrial professions*

Recommendations and Best Practices presented by Plattform Industrie 4.0

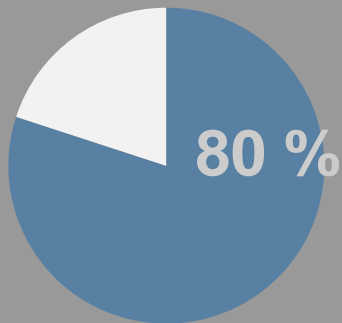
How to implement concepts for education and training?

- 16 best practice examples were presented by Plattform Industrie 4.0 last year
- Special Feature: Concepts were developed by Social Partners

B. SMEs

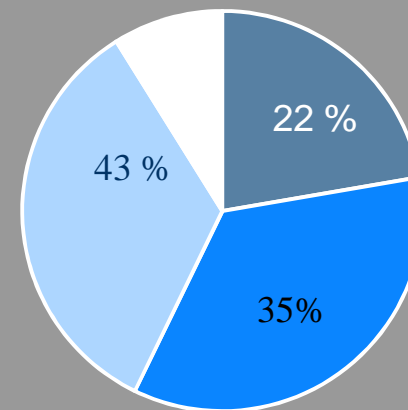
Chances and Challenges for SMEs

How many companies are putting Industrie 4.0 into practice already?



of the companies in the fields of **electric engineering industry and the electrical industry** deal with the issue of „Industrie 4.0“.

About **20 %** of these companies have implemented concrete Industrie 4.0 solutions.



Companies in the field of **machinery and plant engineering**

- Yes, intensively.
- Yes, marginally.
- No, but we heard about it.
- No, we have not heard about it yet.

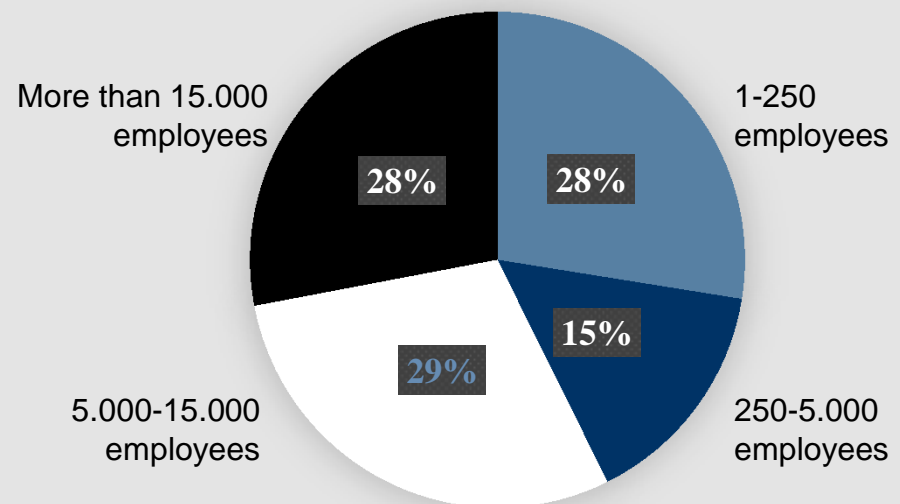
Support for SMEs – 1. Virtual Map Industrie 4.0

Where Industrie 4.0 is put into practice already today

290 examples of application of
Industrie 4.0...

...within **small, medium and
large sized** enterprises from
various branches.

Number of employees within the enterprises



[multiple answers possible]



2. Competence Centres for SMEs

Supporting companies in the process of digitization



Competence Centres (supported by BMWi)

- **Aim:** Support SMEs in the process of digital transformation all across Germany.
- **Investments of 56 millions by BMWi** to realise 10 competence centres and one for crafts
- **Further 12 Mittelstand 4.0 Competence Centres to start in 2017**
 - **Already running:** Hannover, Dortmund, Kaiserslautern, Darmstadt, Berlin, Augsburg, Chemnitz, Hamburg, Ilmenau, Stuttgart

3. Testbed network Industrie 4.0 (private initiative)

Where Industrie 4.0 can be tested for practical use

The platform offers ...



Erproben



Vernetzen



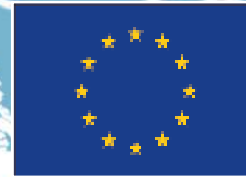
Gestalten



 **LNI4.0** LABS NETWORK INDUSTRIE 4.0

...an overview of existing test-beds in Germany and provides information on further support structures to use those test-beds

C. International Cooperation – Multilateral/Bilateral




United States 
> Industrial Internet Consortium

France 
> Alliance Industrie du Futur

Italy 
> Piano nazionale Industria 4.0

China 
> Made in China 2025

Japan 
> Robot Revolution Initiative

Australia 
> Prime Minister's Industry 4.0 Taskforce



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Thank you for your attention!