

# **The German experience with Industry 4.0 and the country's nascent approach to artificial intelligence**

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# Outline

1. Germany's role in Digital Capitalism
2. Economy
3. Politics
4. The corporatist Debate
5. Social Conflict

# 1. Germany's role in Digital Capitalism

Hasso Plattner (2013):

If someone wanted a european IT-Industry „one shouldn't have let it die 20 years ago“



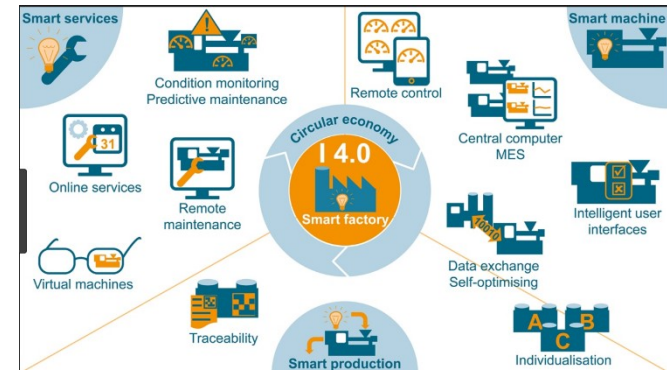
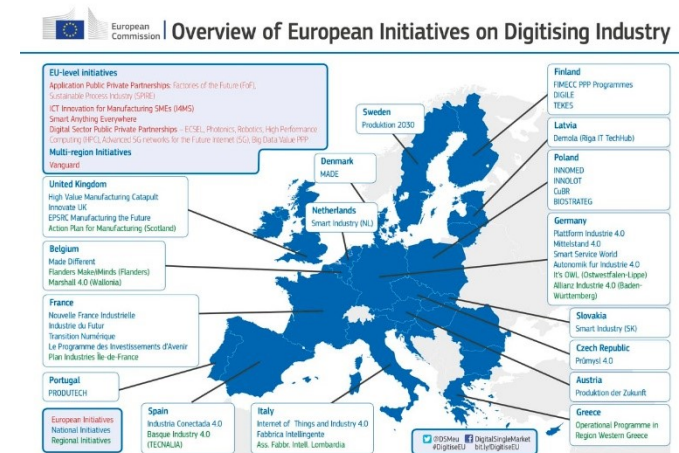
vs.

ICT-heavy export industry



# 2. Economy

- Some european countries talk about digitalization of the welfare state, the broader economy, or both
- Germany talks about Industry 4.0
- What is Industry 4.0?
  - A: Fictitious debate with real consequences



# Industry 4.0 (fictitious)

- How to win industrial capital for expansion (post 2008)?
- Moving targets – nebulous phenomena:
  - Big Data (2011-2013)
  - Robotics, IoT, Automation (2014-2016)
  - Artificial Intelligence (2017-2018)  
(meaning what exactly?!)
- While nothing much happens in the industrial sector...

# Industry 4.0 - real effects

- Increase in private investment & corporate spending
- Experiments with strategies of labor control (not so much automation)
- Revitalization of the entrepreneurial state
- Revitalization of the coordinated market economy
- Advertising program for export-heavy industries



Federal Ministry  
of Education  
and Research



**Fraunhofer**  
SIT

# 3. Politics

- Investment in Research & Development (BMBF, Fraunhofer etc.)
- Investment in ‘neutral’ infrastructure (f.e.: RAMI 4.0)
- Attempts at ‘taming GAFA’
  - GDPR
  - “Netzwerkdurchsetzungsgesetz” (Lex Facebook)
  - Antitrust Legislation
  - Taxes
  - “Digital Capitalism”-Debate & White Papers



# 4. The corporativist debate

- No political conflict over major goals
  - government coalition, unions, business organizations, research institutions
  - +side: coordinated action
  - -side: based on German interests
- **Goal I: Taming GAFA**
  - Privacy & civil rights combine with economic interests
- **Goal II: Industry 4.0 as leading framework of global production**



# Example: Can there be an Android of Production ?

**Big scare:** classical producers,  
small & medium sized  
Enterprises

**Big hope & global race:**  
SAP, Siemens, Salesforce, Google  
Analytics, Microsoft Dynamics

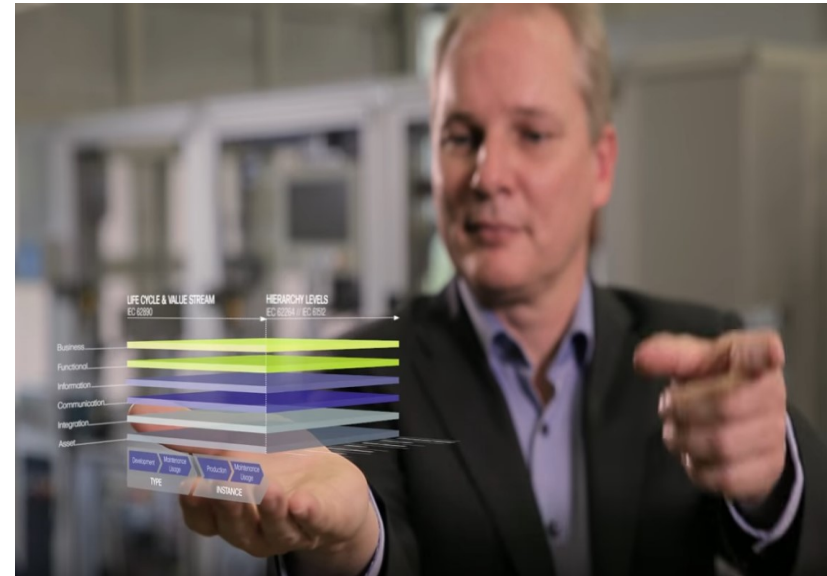
**Practical Answer: RAMI 4.0**

(Reference Architectural model - ,neutral‘ framework for industrial software)

**Source:** Small & medium business organizations, Plattform I4.0

**Sympathetic:** IG Metall

**Perspective:** on its way to become the global manufacturing standard?



# BUT...

- GAFA is in on Industry 4.0 (no SAP without AWS, no mindsphere without AWS & iOS)
- Industry 4.0 will not deliver large-scale productivity growth
  - Instead: perpetuates Germany's export-led growth model
- 'Taming GAFA' doesn't work (so far) and creates problems of its own
- No real entrepreneurial state at the European level
- Political paralysis in Germany (Macron vs. Merkel)

# On the other hand...

## 5. Social Conflict

- With geopolitical reorganization, new political and economic options may arise (trade, public alternatives,...)
- The German program
  - brings together economic and social factors (benefiting a European production and social model?)
  - Is still open to strategic debate
  - Theoretically enables new political alliances
- Unions have a voice again (control issues, corporatist framework)

Thank you.