Systemic Conflict in Times of Digitization – the German Mittelstand under Pressure

eCl@ss Congress

Prof. Dr. Michael Hüther, 18th September 2019
The digital systemic conflict: Who sets the rules?

Social Scoring

EU Code of Practice on Disinformation & GDPR

Silicon Valley Data Economy
Importance of the general increase in digital data in companies

In percent, Germany

- **46%** already important
- **19%** soon important
- **16%** important in the future
- **16%** not yet estimable
- **3%** not relevant for us

Source: Commerzbank: Unternehmensperspektiven 2018
Business models during structural change: How is digitization applied?

Potential conflicts through digitization: technological disruptions and industrial policy

Strategies of digital multilateralism: regulation and standards
Use of innovative application areas
In manufacturing, Germany, 2017, percent

- **Industrie 4.0***
  - We use it: 17%
  - We plan to use it: 15%
  - Not relevant for us: 62%
  - Not yet dealt with the topic: 7%

- **Artificial Intelligence**
  - We use it: 14%
  - We plan to use it: 2%
  - Not relevant for us: 79%
  - Not yet dealt with the topic: 3%

- **Smart Services**
  - We use it: 18%
  - We plan to use it: 33%
  - Not relevant for us: 14%
  - Not yet dealt with the topic: 6%

- **Big Data**
  - We use it: 13%
  - We plan to use it: 19%
  - Not relevant for us: 62%
  - Not yet dealt with the topic: 6%

Source: Kantar TNS, representative company survey: „Digitalisierung in der deutschen Wirtschaft 2017“, n=1.021
* Basis: Manufacturing industry n=392; data in percent on the question: „What do the activities in your company look like in the following areas of digitization“; missing data on 100 percent: do not know/no data
Data-driven success models on the way to new markets?

- Autonomous driving
- Industrie 4.0
- Sharing-Economy
- E-Commerce
The European platform desert

Market capitalization of online platforms, in billion US dollars, 2018

Source: European Political Strategy Centre, 2019
The US well ahead in AI start-ups

Number of AI Start-ups by country, 2017

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>1,393</td>
</tr>
<tr>
<td>China</td>
<td>383</td>
</tr>
<tr>
<td>Israel</td>
<td>362</td>
</tr>
<tr>
<td>UK</td>
<td>245</td>
</tr>
<tr>
<td>Canada</td>
<td>131</td>
</tr>
<tr>
<td>Japan</td>
<td>113</td>
</tr>
<tr>
<td>France</td>
<td>109</td>
</tr>
<tr>
<td>Germany</td>
<td>106</td>
</tr>
<tr>
<td>India</td>
<td>82</td>
</tr>
<tr>
<td>Sweden</td>
<td>55</td>
</tr>
<tr>
<td>Finland</td>
<td>45</td>
</tr>
<tr>
<td>South Korea</td>
<td>42</td>
</tr>
<tr>
<td>Spain</td>
<td>39</td>
</tr>
<tr>
<td>Singapur</td>
<td>35</td>
</tr>
<tr>
<td>Switzerland</td>
<td>28</td>
</tr>
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<td>Australia</td>
<td>27</td>
</tr>
<tr>
<td>Brazil</td>
<td>26</td>
</tr>
<tr>
<td>Netherlands</td>
<td>26</td>
</tr>
<tr>
<td>Italy</td>
<td>22</td>
</tr>
<tr>
<td>Russia</td>
<td>19</td>
</tr>
</tbody>
</table>

Mittelstand decoupled from digital avant-garde in the cities?

Patents related to digitization, per 100,000 employees subject to social insurance contributions, 2015

Success model Hidden Champions, number per million inhabitants, 2012

Source: BA, 2018, own evaluation on the basis of Departisnet, 2016; Simon (2012), p. 65
Business model: Tertiarisation of industrial added value

Value added, in percent of GDP, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Value added manufacturing</th>
<th>Joint production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>9.1</td>
<td>22.6</td>
</tr>
<tr>
<td>China</td>
<td>29.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Italy</td>
<td>15.4</td>
<td>7.0</td>
</tr>
<tr>
<td>France</td>
<td>11.2</td>
<td>3.8</td>
</tr>
<tr>
<td>US</td>
<td>12.2</td>
<td>1.3</td>
</tr>
<tr>
<td>UK</td>
<td>10.6</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

Source: OECD, German Economic Institute
New business models for German manufacturing: platforms

Share on German B2B-Platforms, 2018, in percent

- Industrial Internet of Things (IIoT): 34%
- Supply Chain Management: 33%
- Trade: 21%
- Data: 8%
- Software: 4%

Source: BDI; German Economic Institute
1. Business models during structural change: How is digitization applied?

2. Potential conflicts through digitization: technological disruptions and industrial policy

Technological disruption Additive Manufacturing: New global structure of production and trade
Technological disruption Distributed-Ledger-Technology (Blockchain u. a.): Who will set the standards?
EU-conflict over tax revenues from digital US-companies

Average tax rates, in percent

Source: Federal ministry of Finance; EY; German Economic Institute
Data security becomes a political issue

“How important are the following criteria and services when selecting a cloud provider for your company?”, in percent of companies surveyed

Source: KPMG; Bitkom Research

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Data security becomes a political issue

“A provider of electronic communication service or remote computing service shall comply with the obligations of this chapter to preserve, backup, or disclose the contents of a wire or electronic communication and any record or other information pertaining to a customer or subscriber within such provider’s possession, custody, or control, regardless of whether such communication, record, or other information is located within or outside of the United States.”

US H.R.4943 - CLOUD Act
USA

Penalties

Data-misuse

Espionage
China 2025: High investments by China

Share of Chinese investment on the world regions, in percent

<table>
<thead>
<tr>
<th>Year</th>
<th>Europe</th>
<th>South America</th>
<th>Subsahara Africa</th>
<th>USA</th>
<th>Rest of the World</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>13</td>
<td>2</td>
<td>8</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>2013</td>
<td>10</td>
<td>7</td>
<td>12</td>
<td>16</td>
<td>34</td>
</tr>
<tr>
<td>2018</td>
<td>42</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>29</td>
</tr>
</tbody>
</table>

Cumulative 2000-2018, in billion Euro

Source: AEI (2019); Felbermayr et al (2019); Merics
China

Face-recognition-software

Social-Scoring

Market Power
Business models during structural change: How is digitization applied?

Potential conflicts through digitization: technological disruptions and industrial policy

Strategies of digital multilaterism: regulation and standards
The multilateral response

WTO-reform

1. Development status
   - More data security and protection from data theft

2. Data Economy
   - Restricting digital protectionism

3. Rules for digital trade and E-Commerce
   - Protection from technology transfers

More data security and protection from data theft

Restricting digital protectionism

Protection from technology transfers
The European response – the digital single market

- Level Playing Field
- Promotion of European platform economies
- Free data flow initiative
- Reform of existing competition law
- Harmonization of cross-border electronic commerce
- Standards and interoperability

Quelle: Bundeswirtschaftsministerium – Industriestrategie 2030, Europäische Kommission – Digitale Innenmarktstrategie
The German response to *China 2025*

Amendment to the Foreign Trade Act

Right to audit the acquisition of company shares by non-EU investors who account for 25 percent of the voting rights.

In particularly sensitive areas* (incl. media) limit reduced to 10 percent.

*Defence and security related areas: critical infrastructure, energy suppliers, food producers above a certain size, media companies.*
The race for B2B-platforms is undecided

The Winner takes it all

Really?
Prof. Dr. Michael Hüther
Direktor, German Economic Institute