Keynote
Second SME visit to Japan - Robotics and IT-Services for Industry

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Modern Industrial Policy

Turning Challenges into Opportunities

- Demographics
- Decarbonization
- Industry
- Political insecurities
- Digitization
## A. The Vision for the 4th Industrial Revolution

### Benefits for Enterprises and Society

<table>
<thead>
<tr>
<th>Economic</th>
<th>Environmental</th>
<th>Social</th>
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</thead>
<tbody>
<tr>
<td>&gt; Individual products under the</td>
<td>&gt; Energy- and resource-efficiency (up to -50%)</td>
<td>&gt; Smart assistance systems</td>
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<td>conditions of mass production</td>
<td>&gt; Increased Sustainability (Circular Economy)</td>
<td>support employees</td>
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<tr>
<td>&gt; Increased productivity and</td>
<td>&gt; Compatible with urban life = clean production</td>
<td>&gt; “Better Work”: Work-life-</td>
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<td>flexibility: minimize time to</td>
<td>comes back to the city centers</td>
<td>balance and appeal of work</td>
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<td>market</td>
<td></td>
<td>&gt; Autonomy for social inclusion</td>
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<td>&gt; Value generating processes are</td>
<td></td>
<td></td>
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<td>optimized to customer demand in</td>
<td></td>
<td></td>
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<tr>
<td>real-time</td>
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<td>&gt; Growth potential up to 78 billion</td>
<td></td>
<td></td>
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<td>Euro until 2025.</td>
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B. Concept: Digitalization challenges whole society

Social Partnership and Strong Networks are drivers

Experience so far

> Trade Unions are driver of digitalization
> Job Losses not through firing, but less hiring
> Challenge: training: on the job, modular, life-long

Intelligent assistants allow complex tasks despite low skills.
C. Pathway of Digital Transformation in GER

Germany’s Digital Journey

<table>
<thead>
<tr>
<th>2011</th>
<th>2013</th>
<th>2015</th>
<th>Today</th>
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</thead>
<tbody>
<tr>
<td><strong>Strategic Project I</strong></td>
<td><strong>Industrie 4.0 concluded</strong></td>
<td><strong>1st Platform Industrie 4.0 concluded</strong></td>
<td><strong>2nd Platform Industrie 4.0</strong></td>
</tr>
<tr>
<td><strong>agendaCPS</strong></td>
<td><strong>Smart Service Welt</strong></td>
<td><strong>Technology Program Smart Service Welt concluded</strong></td>
<td><strong>Strategic Project III Autonomous Systems</strong></td>
</tr>
</tbody>
</table>

- Federal Ministry of Education and Research
- acatech: National Academy of Science and Engineering
- bitkom
- ZVEI: VDMA
- Hightech Forum

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D. Why focus on SMEs?

Some Facts

- 3.5 Mio. Companies in Germany
- 90% of them are SMEs

Status quo of digitalization of SMEs in Germany:

- Ca. 20% of the SMEs are front runners
- Ca. 50% took the first step towards digitalization
- Ca. 30% have taken no step towards digitalization and moreover:
  - underestimate benefits of digitalization while
  - overestimating the costs of digitalization
1. Demonstrate Benefits of Industrie 4.0 to SMEs

Map of 317 Best Practice Examples

Access via: https://www.plattform-i40.de/I40/Navigation/Karte/SiteGlobals/Forms/Formulare/EN/map-use-cases-formular.html
Best-Practice Digital Transformation @ Phoenix Contact
Intelligent Production - Trainee Programm - Testbeds and Smart Factories

Intelligent communication structures: Operators are supported and guided by a wizard. Solution scenarios are visualized.

Joint training program with: electrical engineering, business and information science and mechatronics engineering. Self-built kicker illustrates Cloud-to-Cloud communication for predictive maintenance.

SmartFactoryOWL is an open research and demonstration platform for digital transformation. As an "Industrial IoT Experience Center (IIoT)" , new technologies can be tested.
2. Inform: Share existing knowledge of Digitalization

- 23 Competence Centers
- All over Germany
- Pooling regional Knowledge
- Diffusion to SMEs for free
3. Provide Test Facilities: Test your solution

More than 40 testlabs in Germany are connected!

➢ LNI 4.0 arranges access to appropriate testlab

➢ Testing reduces investment risks

➢ Not for free
4. TransferNetwork Industrie 4.0 – Pool & Consolidate
Network of German Industrie 4.0 Initiatives

- Plattform Industrie 4.0 national
- Chambers of Commerce & Associations regional & national
- Mittelstand 4.0 (SME 4.0) Competence Centres (supra-)regional
- Projects & Cluster local or issue-specific
- Initiatives of the States Nationwide
- Test Centres regional
- Mittelstand 4.0 (SME 4.0) Competence Centres (supra-)regional
- Chambers of Commerce & Associations regional & national
- Plattform Industrie 4.0 national
5. International Cooperation

Need for International Solutions & Support SMEs in going abroad

United States
- Industrial Internet Consortium

France
- Alliance Industrie du Futur

Italy
- Piano Nazionale Impresa 4.0

China
- Made in China 2025

Japan
- Robot Revolution Initiative

Australia
- Industry 4.0 Advanced Manufacturing Forum

Mexico
- Plataforma México 4.0
6. Milestones of German-Japanese Cooperation

2015
- Japan-Germany Summit Meeting

2016
- Two Joint Declarations on Cooperation Industrie 4.0
  - METI & BMWi
  - PI4.0 & RRI

2017
- Hannover Declaration at CEBIT
  - BMWi, METI & MIC
Milestones of the German-Japanese Cooperation

- Industrial Cyber Security
- International Standardization
- Exchange of Best Practices online maps
- R&D
- SME: mutual SME visits
SME Visits 2018

- From Japan to Germany:
  16 companies visited Germany & Czech Republic in April 2018

- From Germany to Japan:
  Robotics and IT Services for Industry in June 2018
Thank you for your attention!