Mobilizing Small and Medium Sized Enterprises for Industrie 4.0

– Accelerate innovation together –
SMEs in Germany – The Bedrock of all Economies

How many companies are actually already putting Industrie 4.0 into practice?

<table>
<thead>
<tr>
<th>Germany</th>
<th>Enterprises</th>
<th>Employees</th>
<th>Turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>99.3</td>
<td>60.9</td>
<td>32.7</td>
</tr>
<tr>
<td>• smallest</td>
<td>82.2</td>
<td>19.5</td>
<td>6.7</td>
</tr>
<tr>
<td>• small</td>
<td>14.5</td>
<td>22.4</td>
<td>11.3</td>
</tr>
<tr>
<td>• medium</td>
<td>2.7</td>
<td>19.0</td>
<td>14.6</td>
</tr>
<tr>
<td>Large Enterprises</td>
<td>0.7</td>
<td>39.1</td>
<td>67.3</td>
</tr>
</tbody>
</table>

In order to stay competitive, SMEs have to adapt to I4.0 approaches and technologies.

[DESTATIS, Federal Office of Statistics (2014), Industrie 4.0-Readiness (Oct 2015), companies in machinery and plant engineering with more than 20 employees]
Challenges of Digitalization for SMEs

- Limited development resources and capacities, e.g. know-how of employees or technical conditions
- High costs/risk of investment
- Unclear added value of adopting I4.0 approaches
- IT-Security and data protection requirements
- Lack of information about research programs and funding
Objectives

- Strengthen and develop the position of SMEs in Germany to enhance their competitiveness
- Facilitate collaborations with and access to Industry 4.0 testbeds including their infrastructure, competences and know-how
Industrie 4.0 Testbeds – mobilization of SMEs for Industrie 4.0

Industrie 4.0 Testbed

Competences and infrastructure for the testing of new product ideas in the area of cyber physical systems.

Examples

• Machine tools enabling tests of smart tools in reality to evaluate and improve data exchange between the tool, the machine and the cloud for tool management

• Server infrastructure to test new test performance of an application, service, …
Funded by German Federal Ministry of Education and Research

Industrie 4.0 testbeds – mobilization of SMEs for Industrie 4.0

<table>
<thead>
<tr>
<th>Objective</th>
<th>Focused Industries</th>
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<tbody>
<tr>
<td>Funding/Support of pilot projects to test Industry 4.0 products/components by SMEs in testbeds</td>
<td>Component, machine and plant manufacturers</td>
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<tr>
<th>Funding</th>
<th>Duration</th>
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<tbody>
<tr>
<td>max. 100,000 €/project; up to 50 % of budget</td>
<td>Funding: 3 years (2016–2019) Projects: 6–9 months, max. 12 months 60-80 projects/year</td>
</tr>
</tbody>
</table>
Objectives

• Reduce barriers for SMEs to apply and implement I4.0 projects
• Guiding the funded projects

→ Further development of »Plattform Industrie 4.0« use cases and recommendations for SMEs, research and political establishment.

Project partners

• IFF University of Stuttgart
• VDI TZ
# National Contact and Coordination Point – I 4.0 Testbeds for SMEs

<table>
<thead>
<tr>
<th>1. Contact and Information</th>
<th>2. Matching</th>
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<tbody>
<tr>
<td>Information about the funding scheme (webpage, hotline, fairs, conferences)</td>
<td>Selection of suitable I 4.0 testbeds throughout Germany</td>
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<tr>
<td>Providing the I 4.0 SME product idea template</td>
<td>Connecting SME and testbed</td>
</tr>
<tr>
<td>Viability check of I 4.0 product ideas</td>
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<tr>
<td>Supporting the preparation of project application by providing templates and feedback</td>
<td>Monitoring and evaluation of the funded Industrie 4.0 SME projects</td>
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Current Project Status

Current status (May 2016 – December 2016)

• Contact and information for SMEs
  • 171 SME enquiries
  • 58 Abstracts (some still in preparation)
  • up to now 32 project proposals under preparation, tendency increasing
  • approval rate 30%
  • main economic sectors: logistics, automotive supply industry, mechanical engineering – machine tool manufacturing
  • thematic focus: data exchange and security, assistance systems

• Target group-oriented approach
  • 10 participation at conferences/seminars/trade fairs

• Competence Profiling of I 4.0 testbeds
  • 26 testbeds
  • aim: 40 testbeds
Competence profiled Testbeds

Current status:

• 26 testbeds profiled
• 90% of the testbeds cover the following industries:
  • Automotive/aviation/transportation
  • Machine and plant construction/automation
  • Component manufacturers
  • Energy
• More than 80% of the testbeds have »Automation« as one of their Industrie 4.0 core competences
Possible I4.0 Product ideas

I4KMU enables SMEs to take the last steps towards Industry 4.0

Products

- SME: Provider for industrial IT-security solutions
- Objective: Test and further develop a hardware and software prototype for detection of communication anomalies in programmable logic controls (PLC)
- Services I4.0 Testbed:
  - Provide the machines and required competencies for tests
I4KMU and LabNetwork I4.0
Support structure for the use of testbeds

I4KMU
Focus:
• SMEs
• Component manufacturers
• BMBF Funding Scheme

I4.0 TESTBED

LNI4.0
Focus:
• SMEs, Large Enterprises
• User
• Components manufacturers
• Internationalization, Standardisation

Small and Medium Sized Enterprises (SME)

Large Enterprises

Mutual support to find the suitable testbed for each enterprise

Industry 4.0 enquiries
ACCELERATE
INNOVATION
TOGETHER
Thank you!

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