SIEMENS



Rajiv Sivaraman

“Industrie 4.0” “Smart Factories” “ Cyber Security”

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Agenda

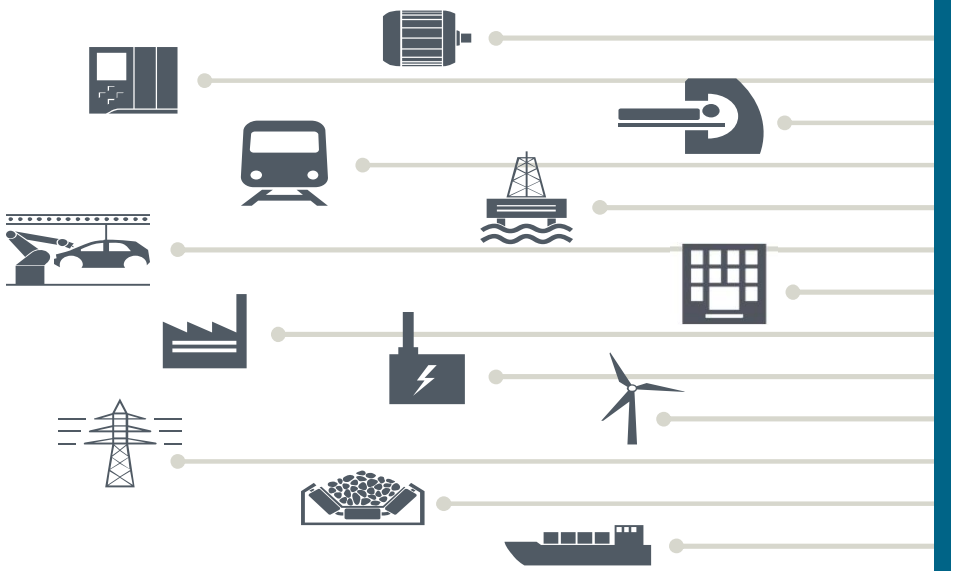
Digitalization , Germany's Industry 4.0 initiative, Siemens response, status of the race for Smart Factory standards in Europe the US and Asia and the SAP collaboration…

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Digitalization: the Great Paradigm Shifter

Physical world

Siemens installed base –
300,000 connected systems



Virtual world

Insights from an average of more than
17 TB operations data per month

Autonomous fault recovery
CAx
Traffic management
MES
Analytics
Imaging software
Fleet management
Smart grids
e-Tolling
Digital Factory
Image-guided therapy
Meter Data Management
Collaboration in the cloud
PLM
Embedded software
Efficient buildings
Decision support
Neural networks

Unrestricted / © Siemens AG 2016. All Rights Reserved.

SIEMENS

Digitalization and Industrie 4.0

- The digitalization of the manufacturing industry is a worldwide topic. Fundamental discussions on the future of this industry and the importance of digitalization are being held everywhere. The reason for this is the challenges being faced, which are very similar around the world*



*There are various international initiatives that are meant to smooth the path to the manufacturing of the future, for example in Germany "Industrie 4.0" and in the USA the "Industrial Internet Consortium" (IIC)..Industrie 4.0 focuses on the digitalization of the manufacturing industry as part of the IoT (Internet of Things), IIC goes further and is more generally formulated – for example, it also addresses healthcare, energy and IoT itself.

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Industrie 4.0
Defining the way forward in industry in the internet age

SIEMENS

Cornerstones of the initiative Industrie 4.0

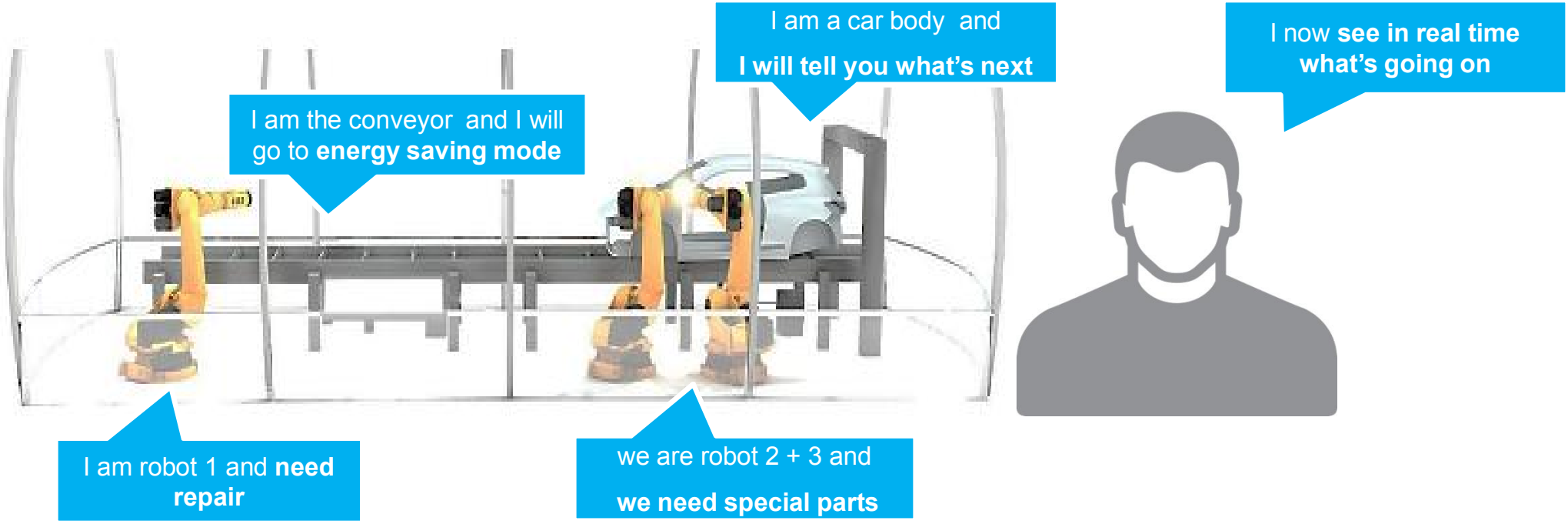
Key research areas of the German industry sponsored by the German Government. The goal of Industrie 4.0 is to develop a forward-looking strategy which prepares the German manufacturing industry for the Internet age. Key focus areas include:

1. **Horizontal integration of the value-add networks**
2. **Vertical integration and networked production systems**
3. **End-to-end engineering across the entire value chain**

Source: acatech, April 2013 “Umsetzungsempfehlung für das Zukunftsprojekt Industrie 4.0”

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Example of the Future Manufacturing

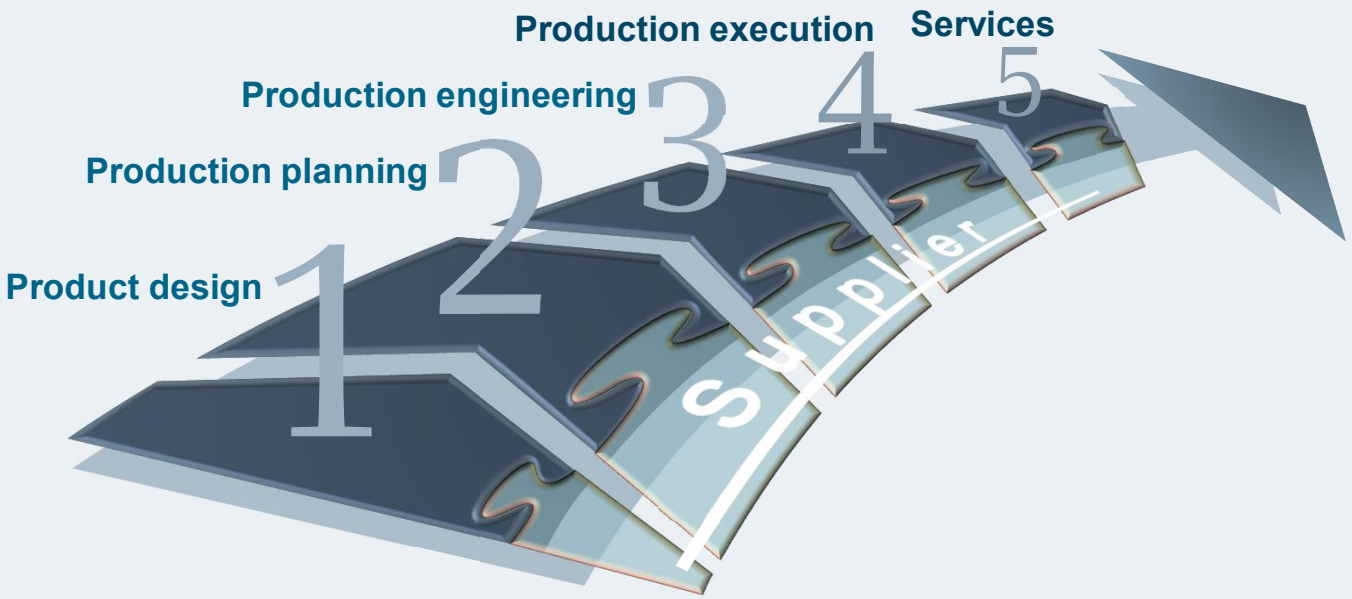


Source: http://www.siemens.com/press/pool/de/events/2014/industry/2014-04-hannovermesse/presentation-russwurm-future-of-industry-e.pdf

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Only a holistic automation approach including the whole value add chain will yield sustainable competitiveness

SIEMENS



Unrestricted / © Siemens AG 2016. All Rights Reserved.

SIEMENS

What can Siemens offer today towards Industrie 4.0/ IIoT

Digital Enterprise / Future of Manufacturing

Process Industries

Product design | Process- and plant design | Engineering | Operation | Services

Discrete Industries

Product design | Production planning | Production engineering | Production | Services

Digital Enterprise Software for Process Industry



\+ **Industrial Communication**

\+ **Industrial Security**

\+ **Industry Services**

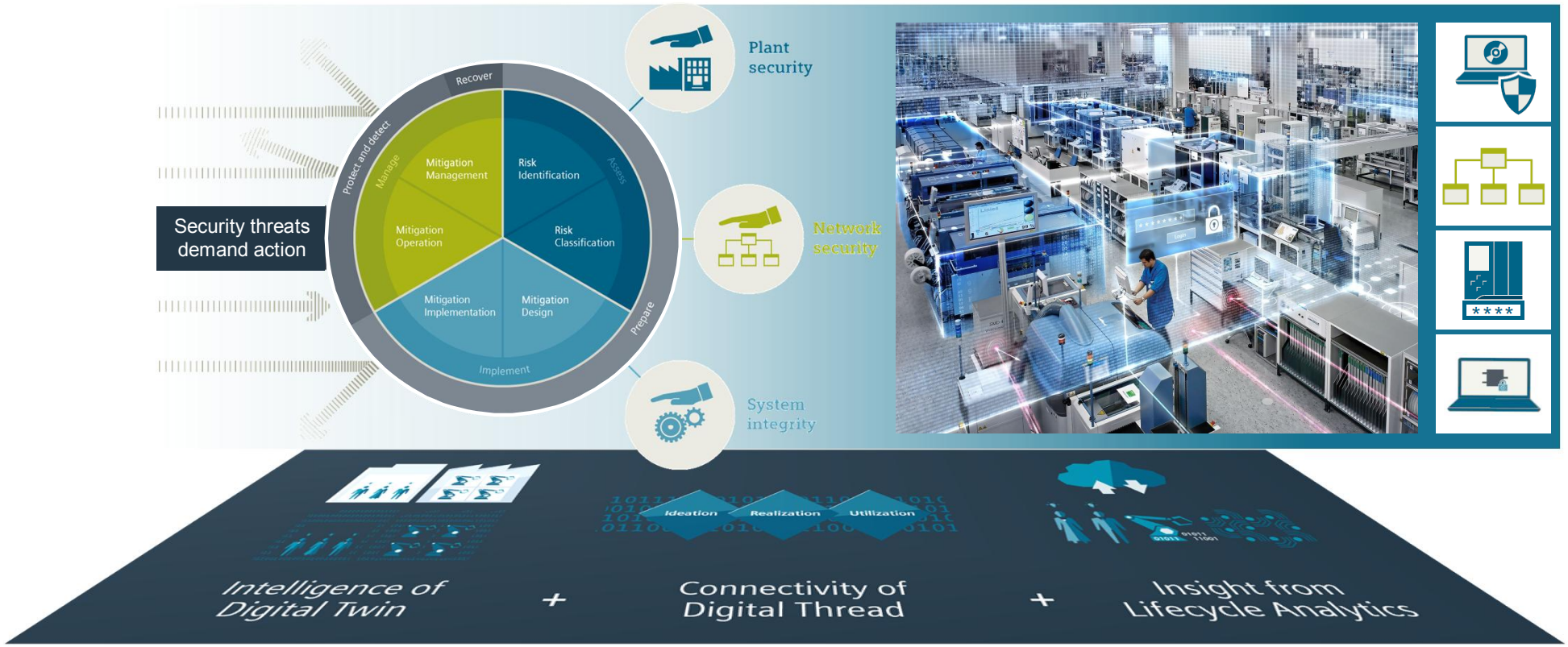
Digital Enterprise Software Suite



Unrestricted / © Siemens AG 2016. All Rights Reserved.

Design Security into your Plant
With Siemens *Defense in Depth*

SIEMENS



Unrestricted / © Siemens AG 2016. All Rights Reserved.

SIEMENS

Summary of Initiatives across the globe supporting " Digitalization"

- In Germany, the subject is driven above all by the Government and various associations. The German Federal Government actively supports Industrie 4.0 by means of, for example, projects for autonomics, production technologies, smart data/smart services and IT security. In these subjects, decisive for digitalization, there is still a great need for research. The efforts being made to strengthen research and innovation must therefore not be allowed to abate, to ensure that Germany, and indeed Europe, do not fall behind with respect to other regions.
- In the USA, the subject is addressed by company consortia, for example IIC or the Smart Manufacturing Leadership Coalition.
- In addition there are initiatives to strengthen manufacturing industry,e.g.:
  - The US Government is supporting manufacturing innovation through the National Network for Manufacturing Innovation (NNMI), an initiative by President Obama to bring together industry, academia, and government partners to leverage existing resources, collaborate, and co-invest to advance manufacturing innovation and accelerate commercialization.
  - NEMA has a focus group on IoT & Cyber
- In India, the "Make in India" program aims at encouraging innovations, simplifying investment, strengthening the manufacturing infrastructure and extending qualifications with the goal of increasing the growth of the Indian manufacturing industry to over ten percent per annum.
- In China, comprehensive economic reforms by the Government have given industry much greater room for maneuver. In the program "Manufactured in China 2025", innovations are placed at the heart of industrial development – from "Made in China" to "Created/Innovated in China

Unrestricted / © Siemens AG 2016. All Rights Reserved.

Contact

SIEMENS



Rajiv Sivaraman

Rajiv.siva@siemens.com

VP & Head Plant Security Services

Siemens Industry Inc

100 Technology Drive

Alpheretta 30005

GA, USA

siemens.com/answers

Unrestricted / © Siemens AG 2016. All Rights Reserved.