

Industry  
**4.0**



Industrial  
**Internet of  
Things**



## Terms

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“If we had computers that knew everything there was to know about things - using data they gathered without any help from us - we would be able to track and count everything, and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling, and whether they were fresh or past their best.”

*Kevin Ashton*

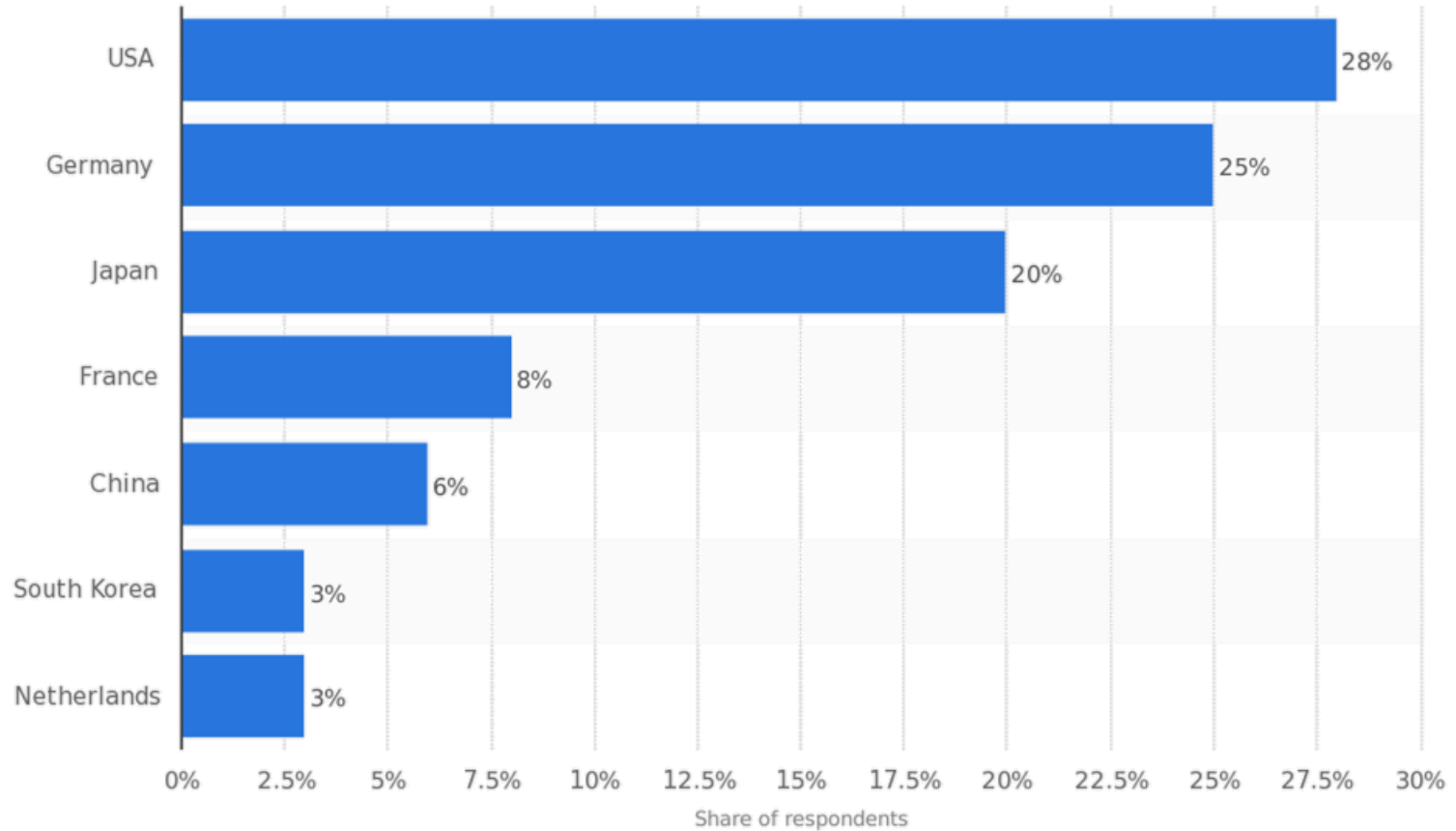
“Industry 4.0” is the fourth industrial revolution driven by Internet technology. It describes the technological change of today's production technology to Smart Factories (cyber-physical production systems).



# Industry 4.0 vs. Industrial Internet of Things

## Facts and Numbers

**Which nation, in your opinion, is currently leading in Industry 4.0?**

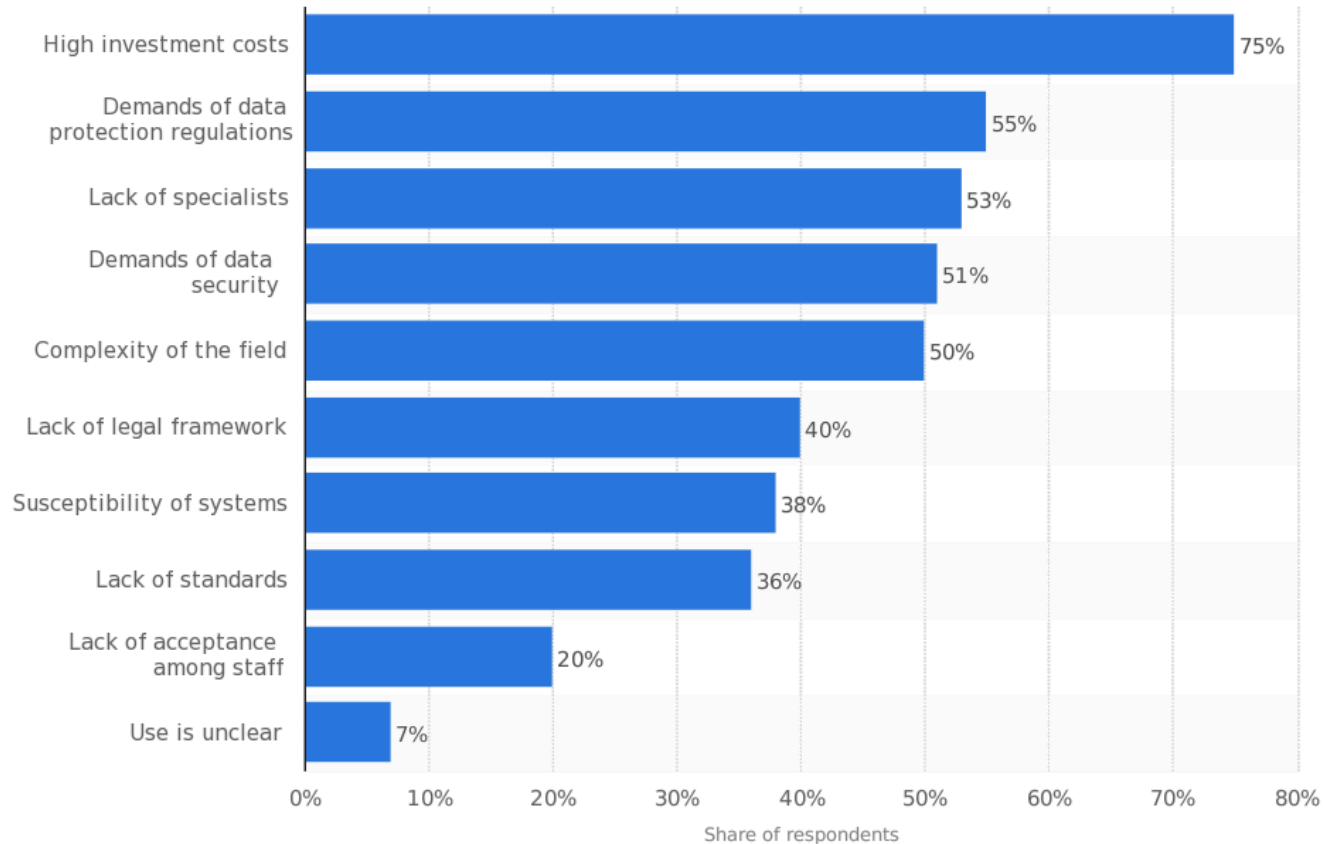


Digital Association of Germany (BITKOM), 2016

# Industry 4.0 vs. Industrial Internet of Things

## Facts and Numbers

### Which obstacles have you encountered regarding the use of Industry 4.0 applications in your company?

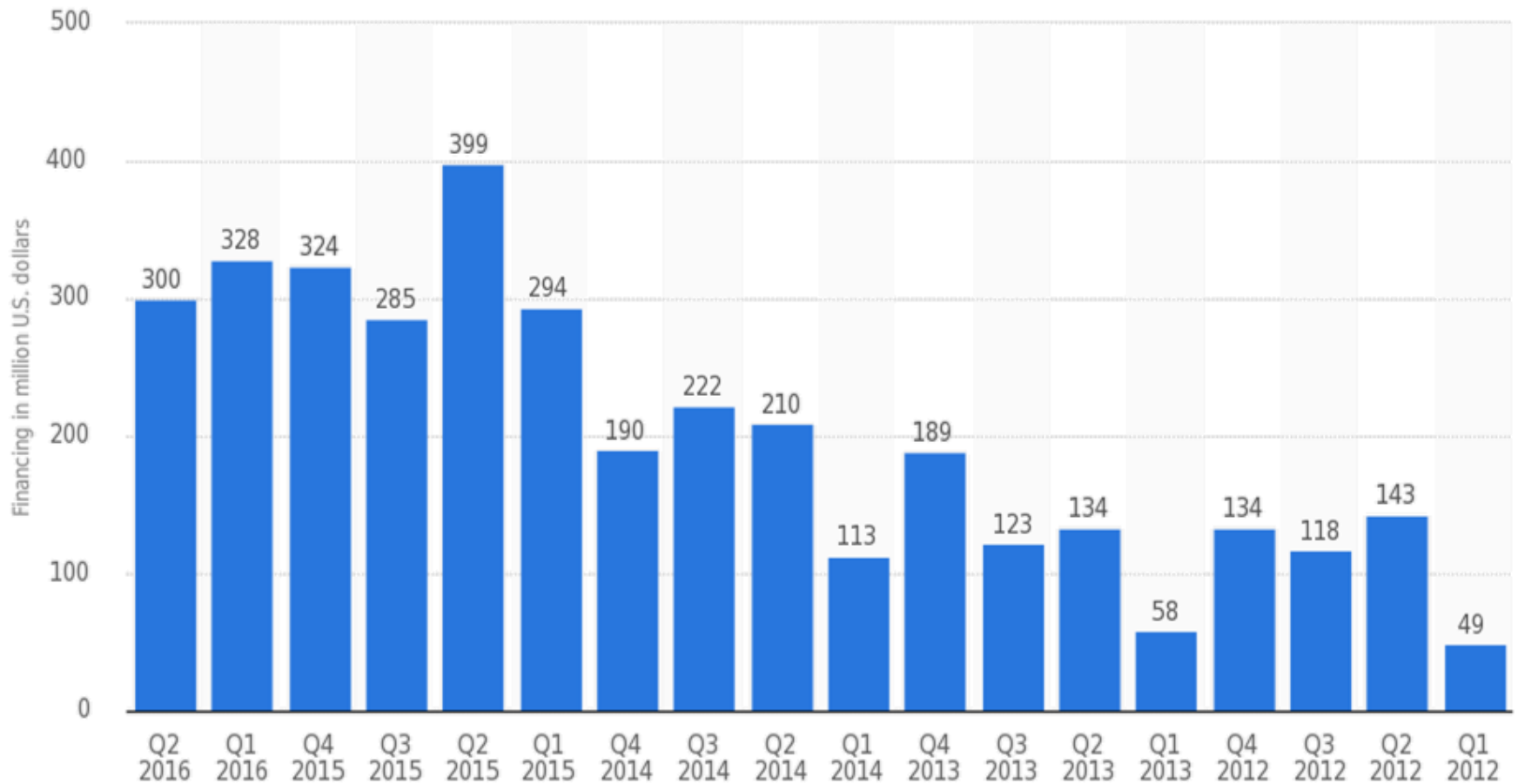


Digital Association of Germany (BITKOM), 2016

# Industry 4.0 vs. Industrial Internet of Things

## Facts and Numbers

**Global quarterly Industrial Internet of Things financing from 2nd quarter 2012 to 2nd quarter 2016 (in million U.S. dollars)**



Twenty years ago the Internet was still in the children's shoes, today it is an integral part of our private and professional everyday life!



**“Coping with digital change is the most important management task of our time. If the business model changes as a result of digitization, the company must adapt or disappear sooner or later.”**

Former BITKOM-President Prof. Dieter Kempf, CeBIT 2015, translated by Google Translate

## Agenda

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### ***II.0@Bosch – Central Challenges and Opportunities in Realizing the Connected Industry***

Daniel Ewert, Robert Bosch Group

### ***Data Predictive Control - Bridging Machine Learning with Controls for Volatile Energy Markets***

Rahul Mangharam, University of Pennsylvania

### ***Internet of Vehicles***

Fan Bai, General Motors

### ***Interoperability of Heterogeneous Systems – Standardization Roadmap vs. Adaptive Integration***

Daniel Schilberg, University of Applied Sciences Bochum