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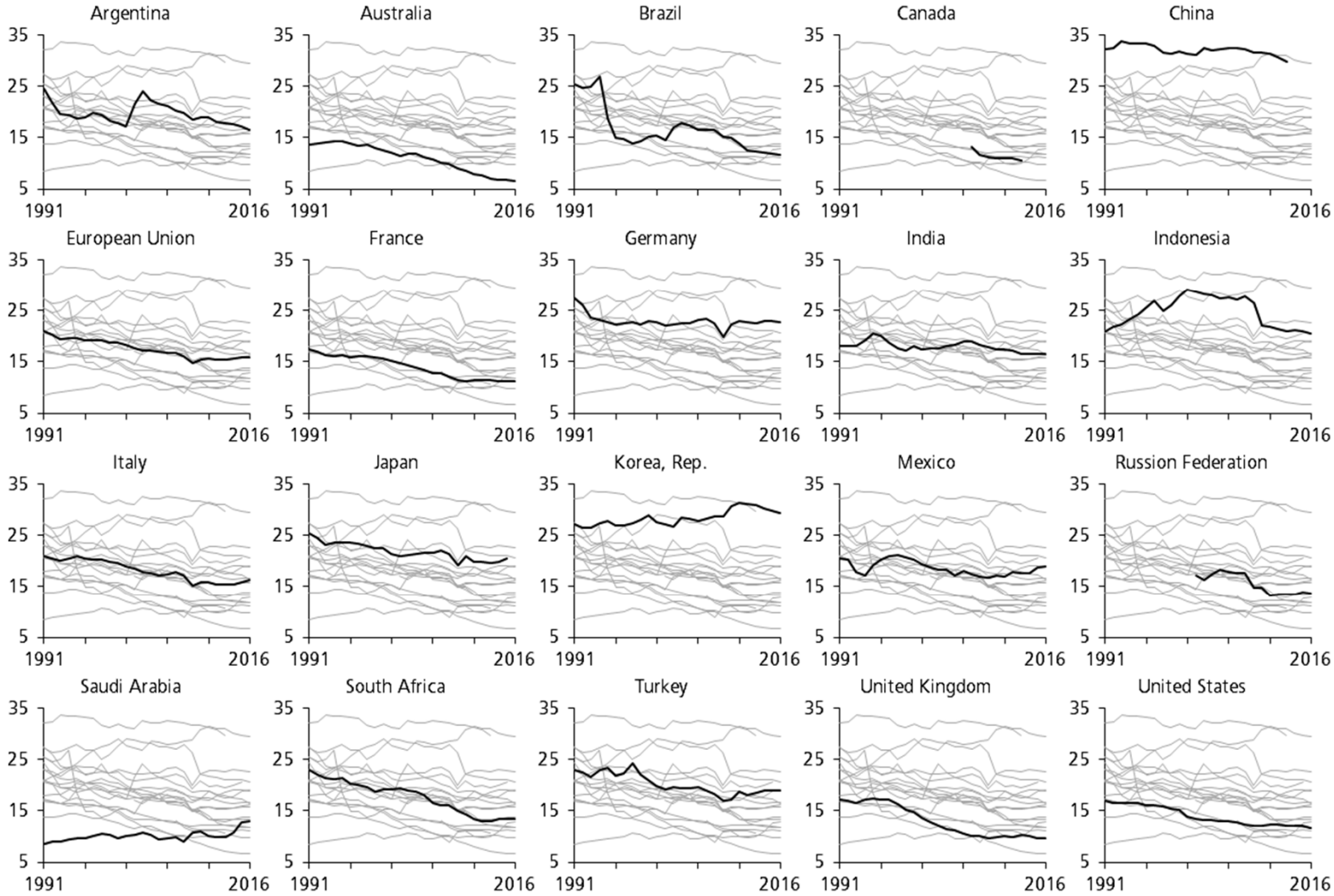
Strategien und Geschäftsmodelle für die digitale Transformation

Tag der Innovation

Bozen, 13. November 2018

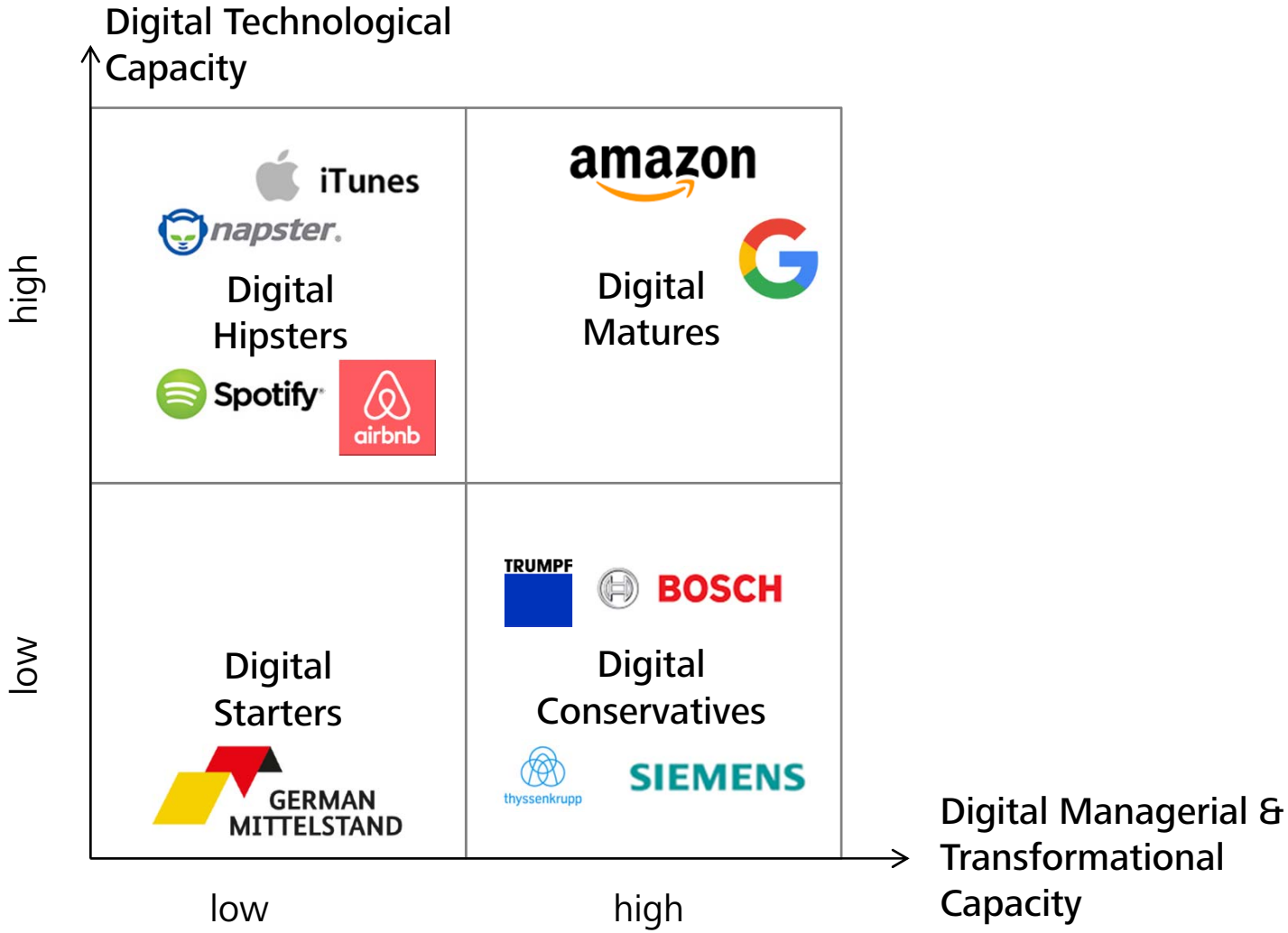
Professor Dr. Robert Obermaier

G20: Share Manufacturing/GDP

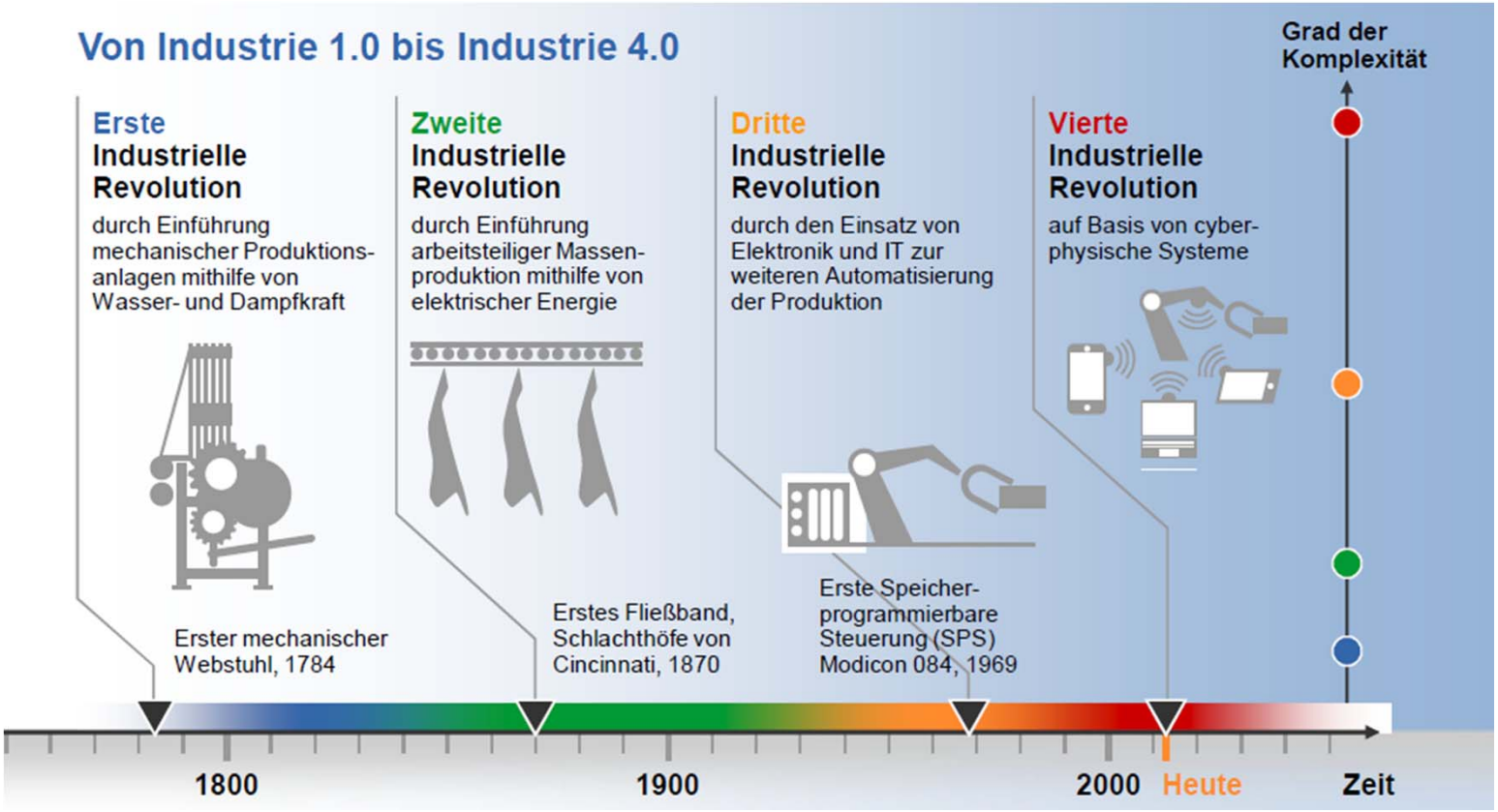


Obermaier (2017)

Der „deutsche“ Ansatz: Industrie 4.0



Industrielle Revolutionen …



Quelle: DFKI (2011)

… haben die industrielle Wertschöpfung stets grundlegend verändert.

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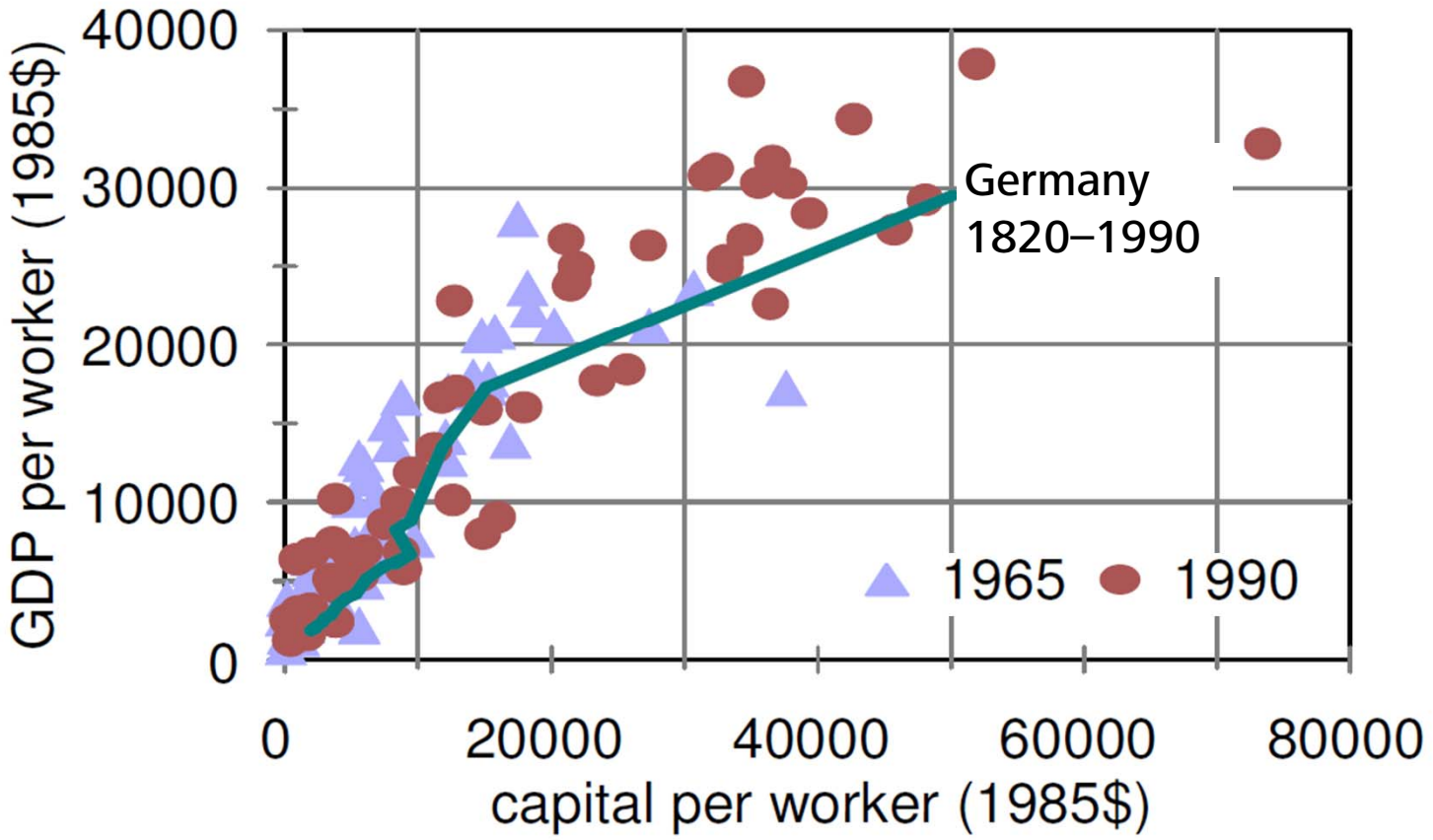
National and International Organizations

Country	Name of the initiative	Responsible Organizations
Germany	Industrie 4.0	Plattform Industrie 4.0 (Federal Ministry of Economic Affairs, acatech, several industry associations)
USA	industrial internet	Industrial Internet Consortium (founded by AT&T, Cisco, General Electric, IBM, and Intel)
Japan	IVI Industrial Value Chain Initiative Connected ! Manufacturing	30 Japanese companies

National and International Organizations

Country	Name of the initiative	Responsible Organizations
China	MADE IN CHINA 中国制造 2025	• Ministry of Industry and Information Technology • China Academy of Engineering.
South Korea	INTREE 4.0 FORUM Industry 4.0 Innovation for Humans	Intree 4.0 Forum (several professors)
Sweden	PRODUKTION2030	The Association of Swedish Engineering Industries

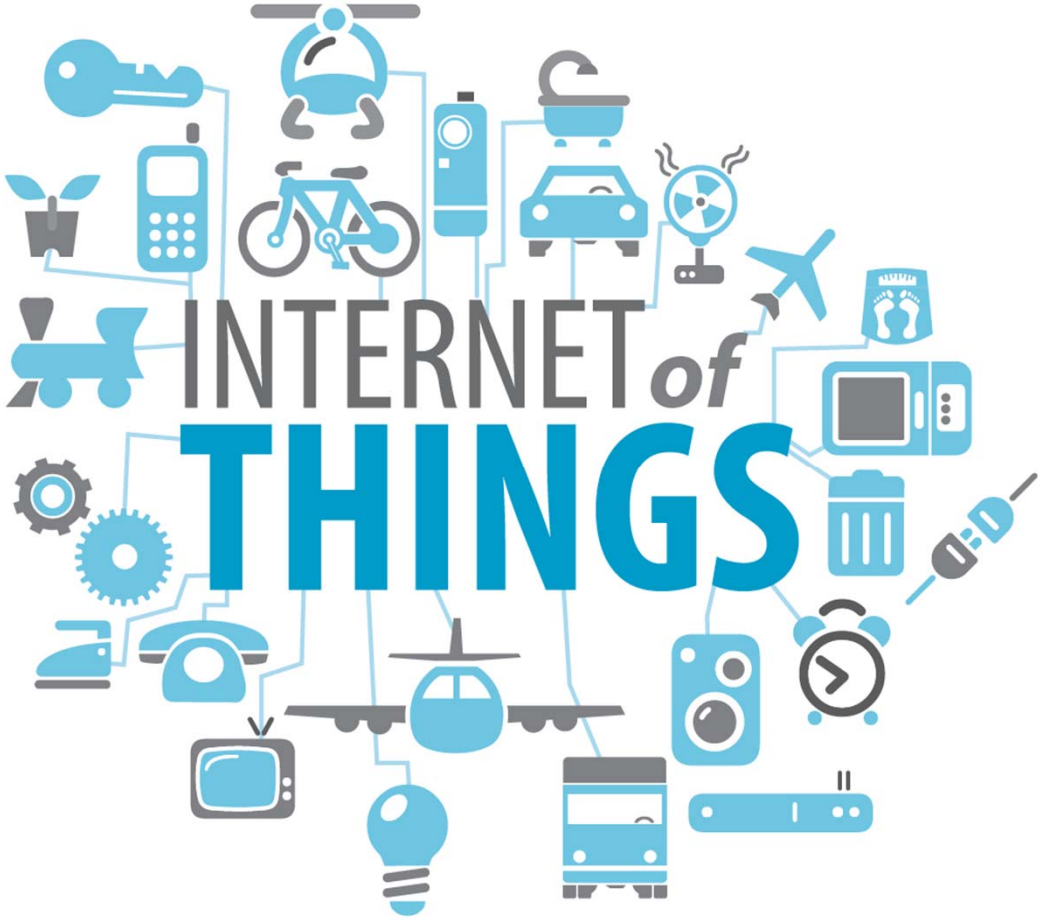
World Production Function



Quelle: Allen (2011)

Technologies

1. Internet & communication technology
2. Advanced manufacturing technology, Robots
3. Sensors, Aktors
4. Embedded Systems, Software, Analytics
5. Human Machine Interface



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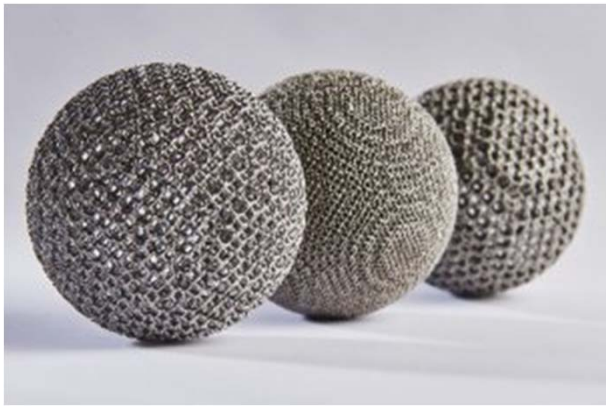

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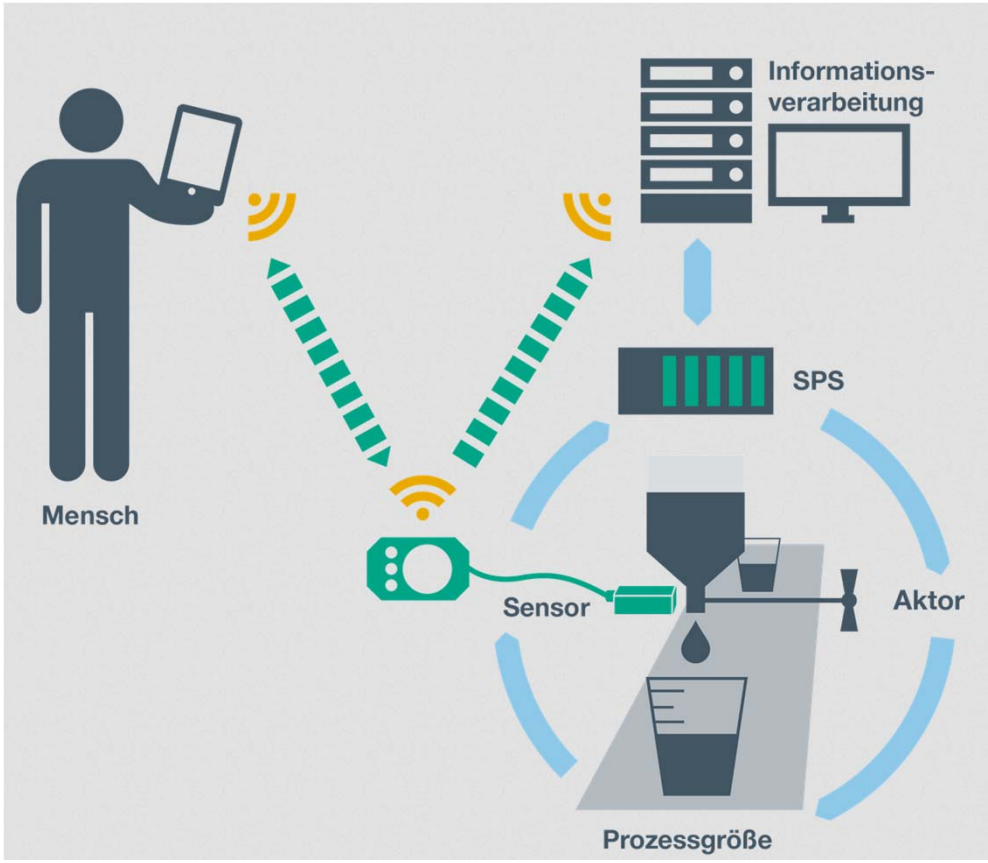

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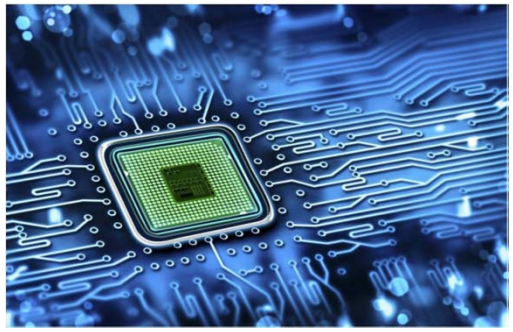

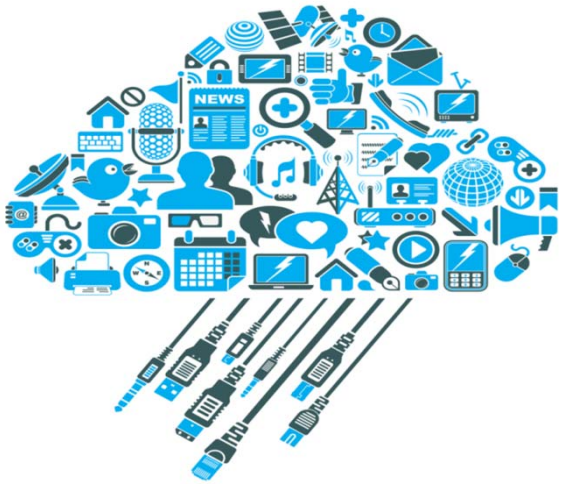

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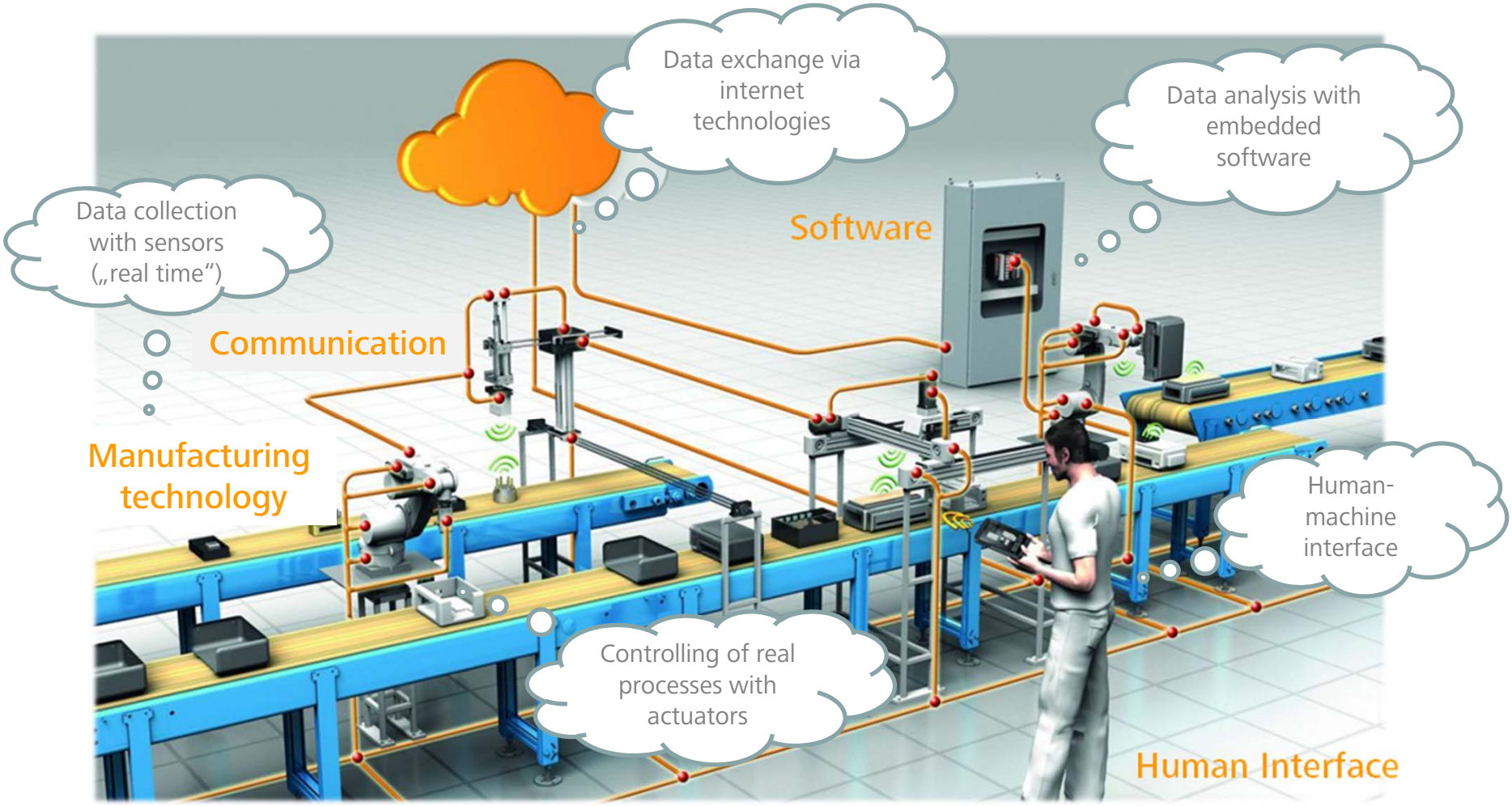
Cyber Physical Systems (CPS) und Smart Factory



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Eine betriebswirtschaftliche Definition von „Industrie 4.0“

„Industrie 4.0“ beschreibt eine Form der Wertschöpfung, die durch

- Automatisierung,
- Digitalisierung sowie
- Vernetzung aller Akteure

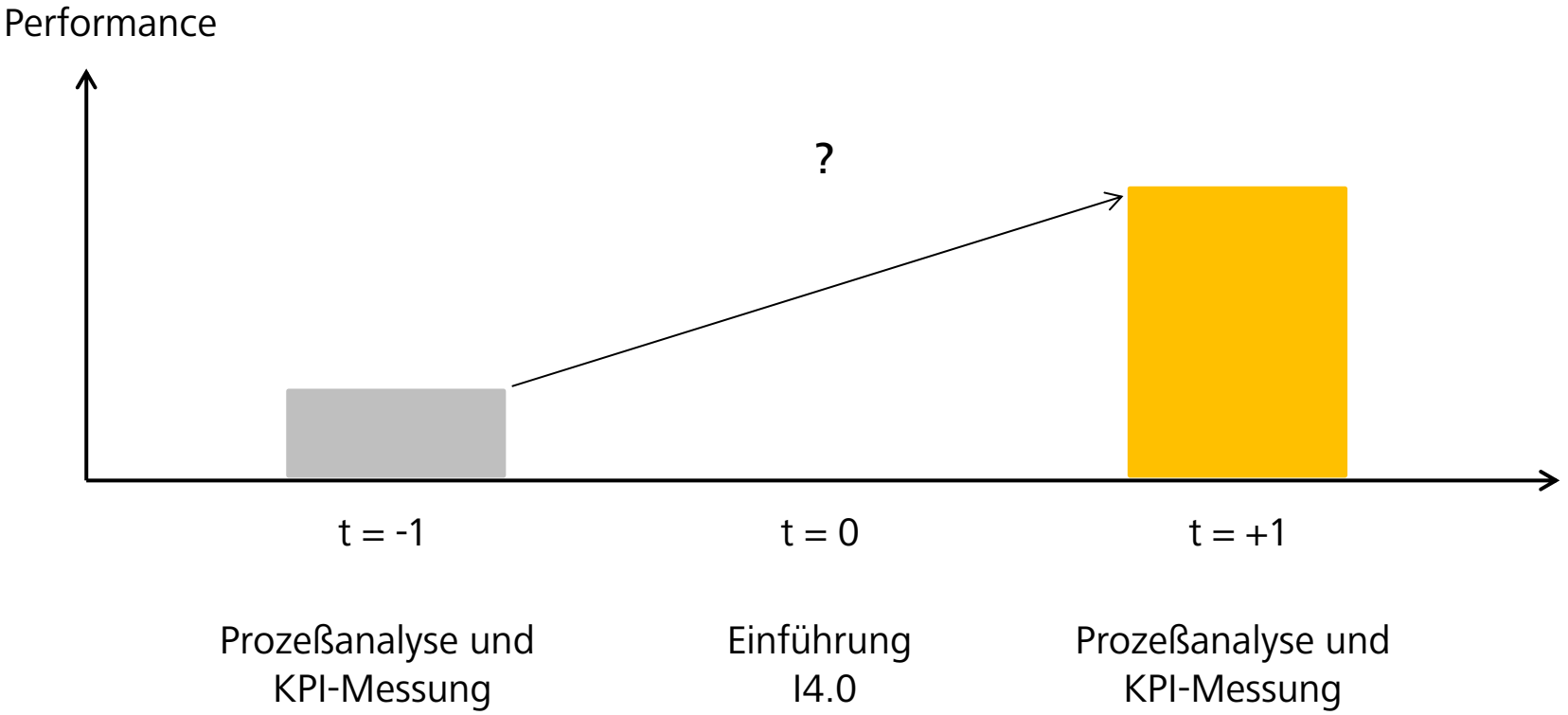
charakterisiert ist und auf

- Prozesse,
- Produkte oder
- Geschäftsmodelle

von Unternehmen einwirkt.

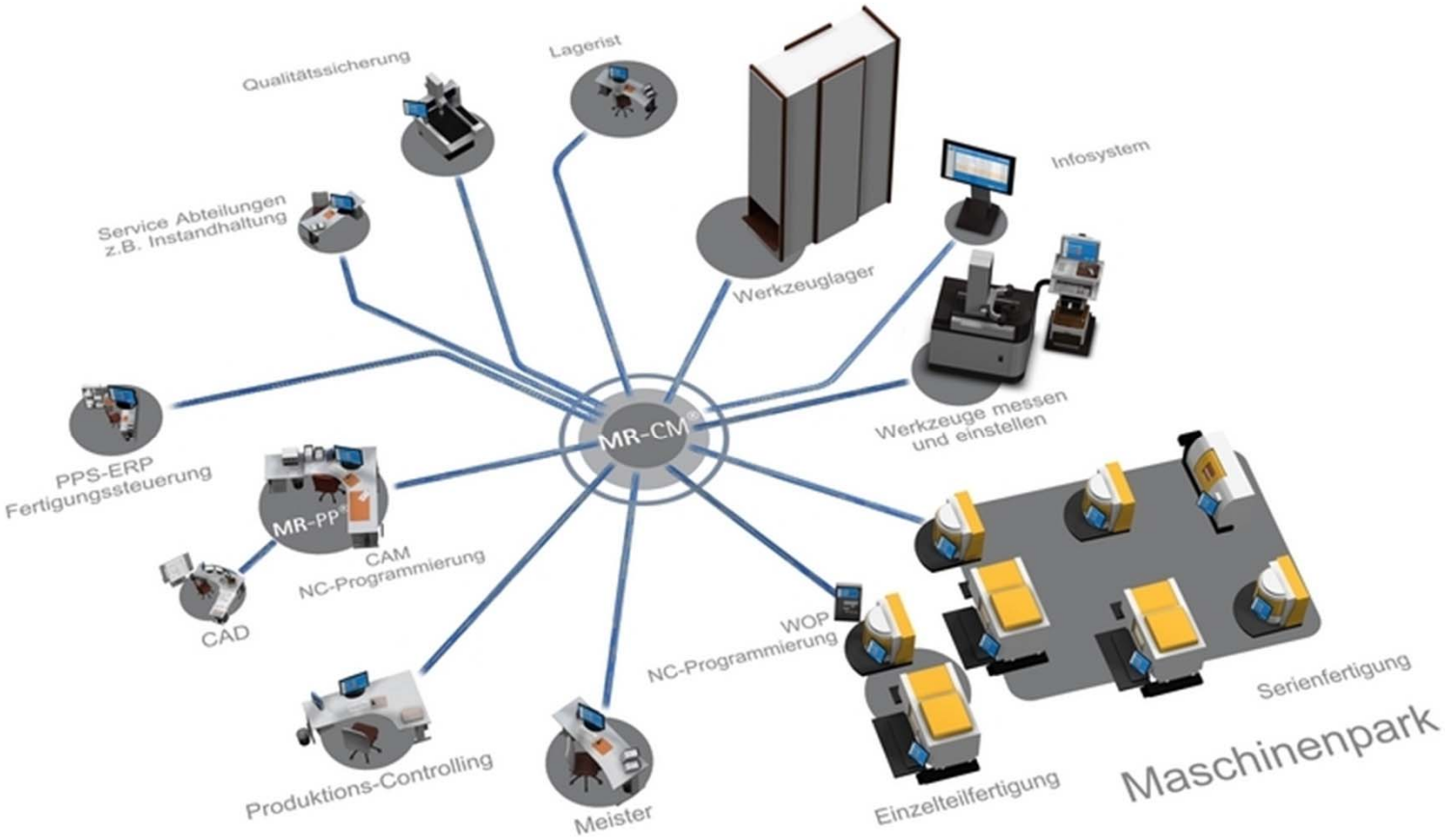
Quelle: Obermaier (2016)

Welche Effekte hat die Einführung einer Industrie 4.0-Technologie?



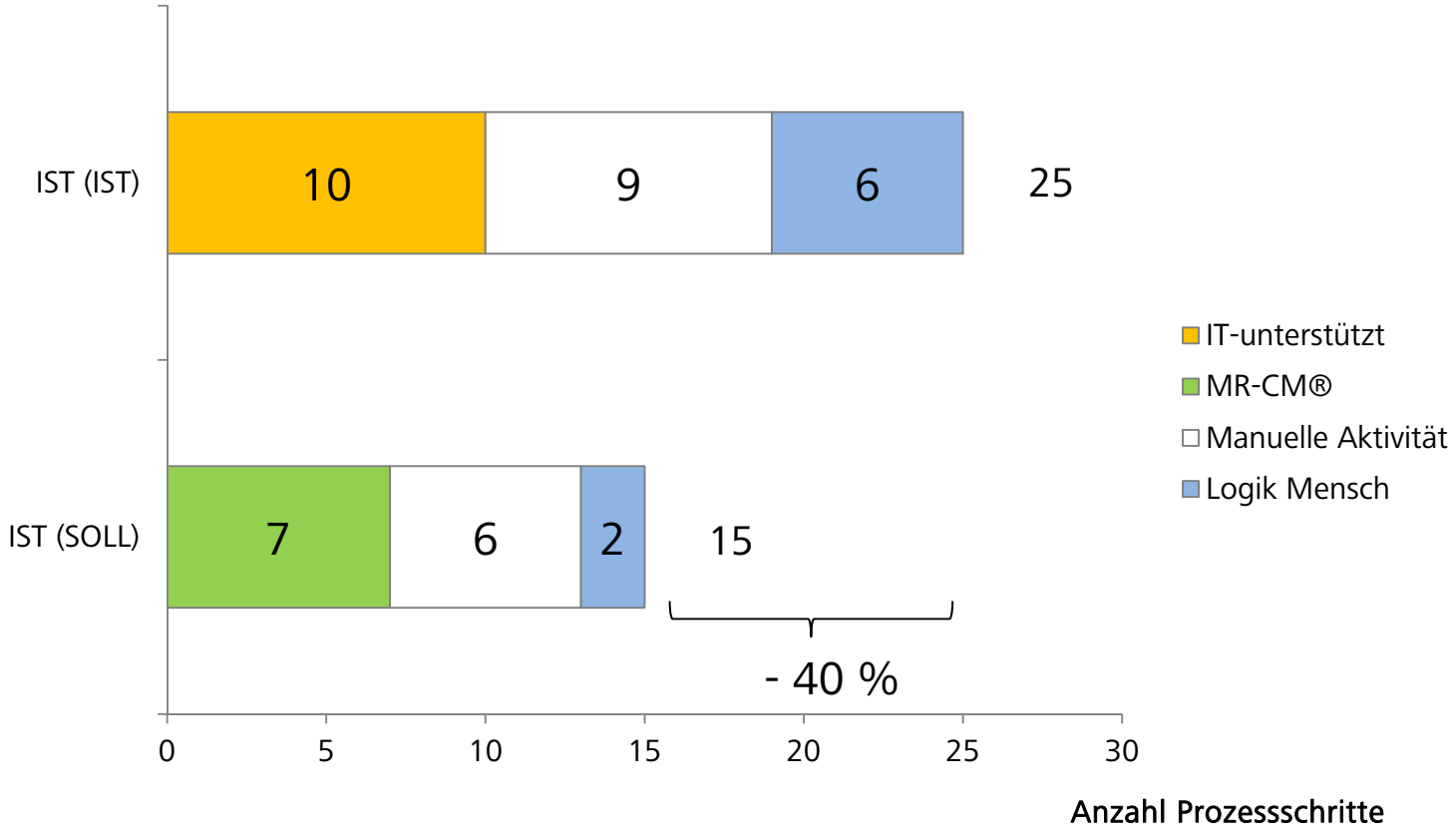
Quelle: Obermaier et al. (2015)

Smarte, vernetzte Prozesse: Manufacturing Execution Systems (MES)



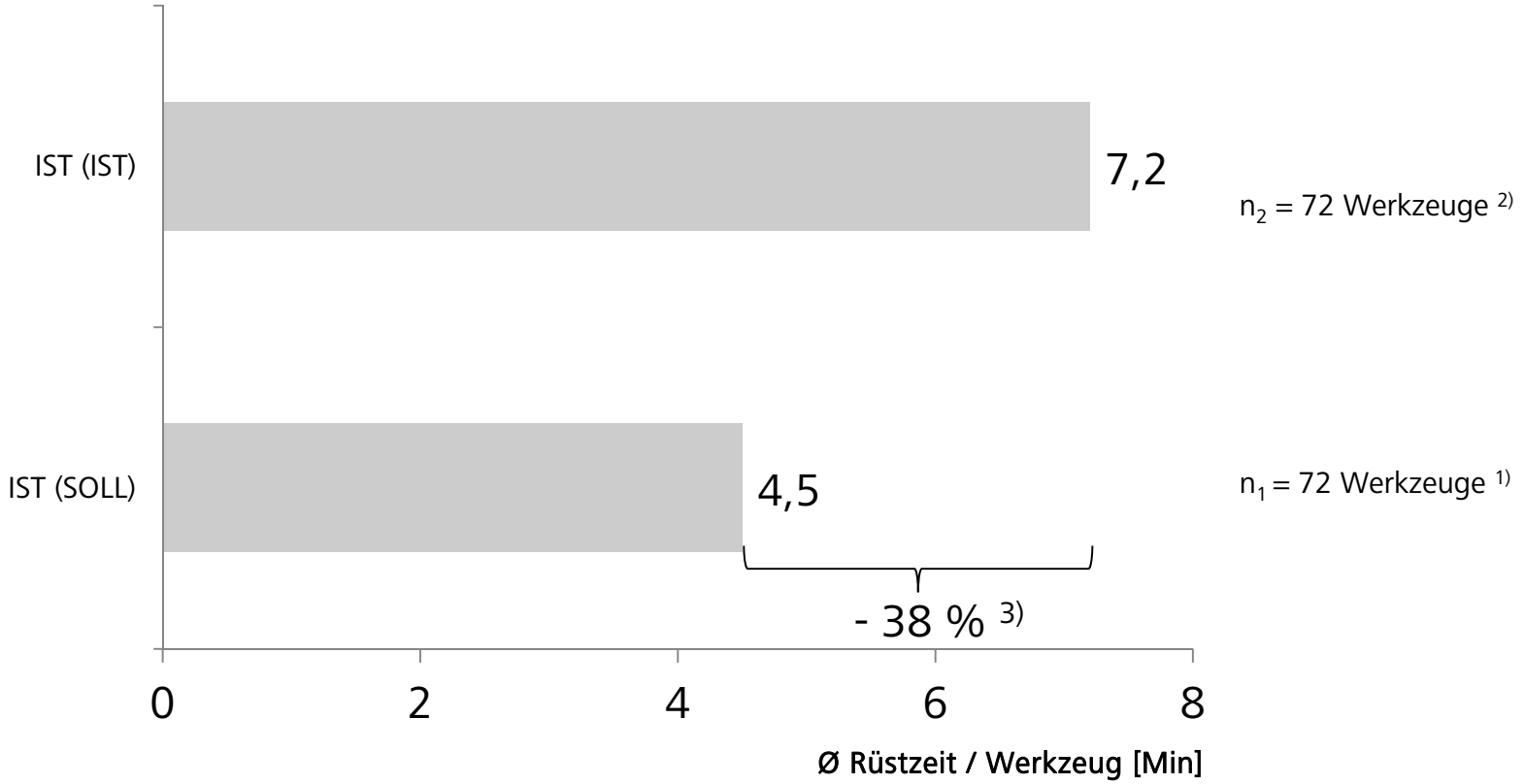
Maschinenfabrik Reinhausen (2015)

Smarte, vernetzte Prozesse: Potential- und Prozeßanalyse (ex post)



Quelle: Obermaier et al. (2015)

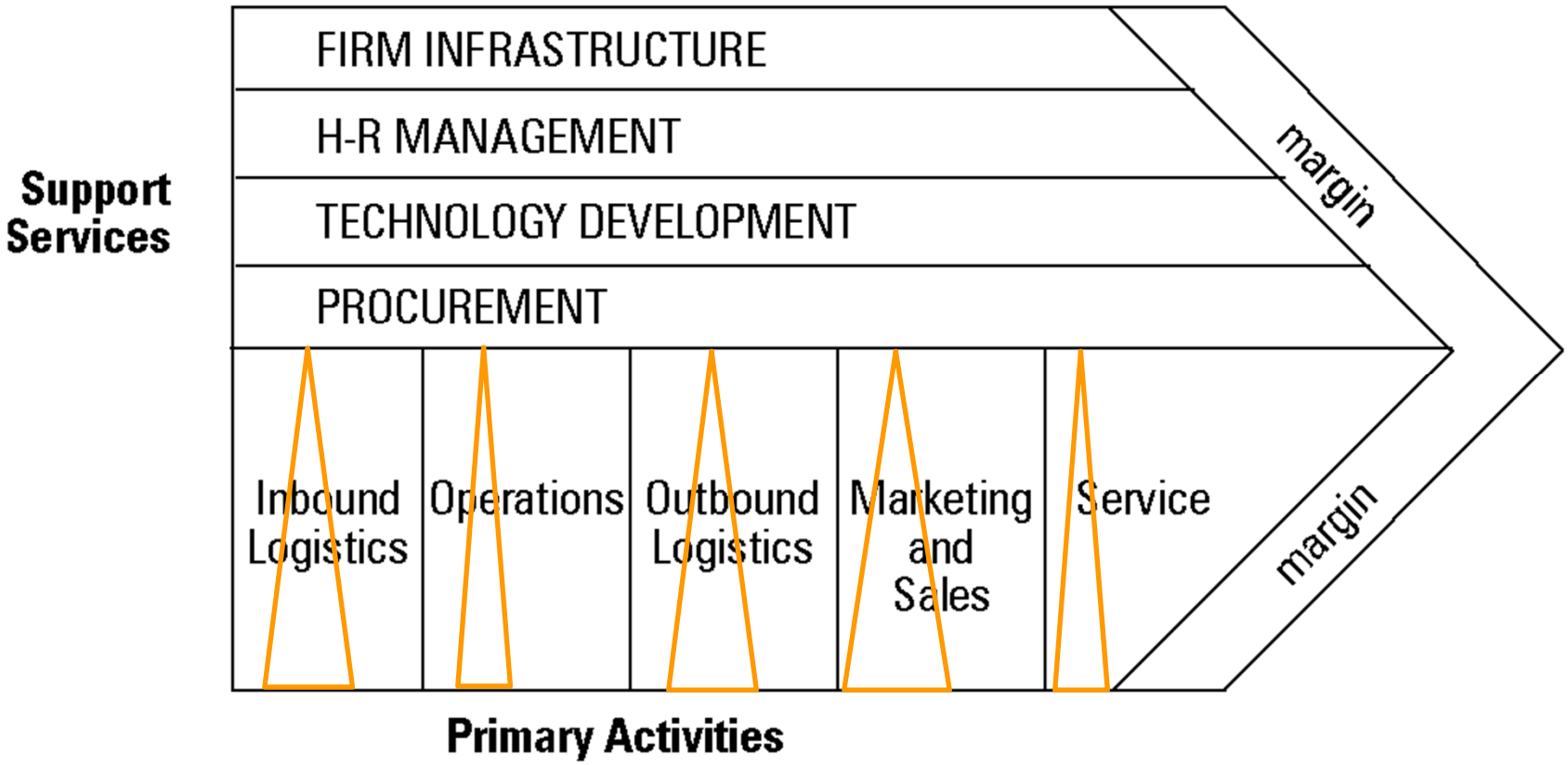
Smarte, vernetzte Prozesse: Potential- und Prozeßanalyse (ex post)



1) Basis: 29 Einstellaufträge 2) Basis: 19 Einstellaufträge 3) stat. signifikant, p = 0,0001

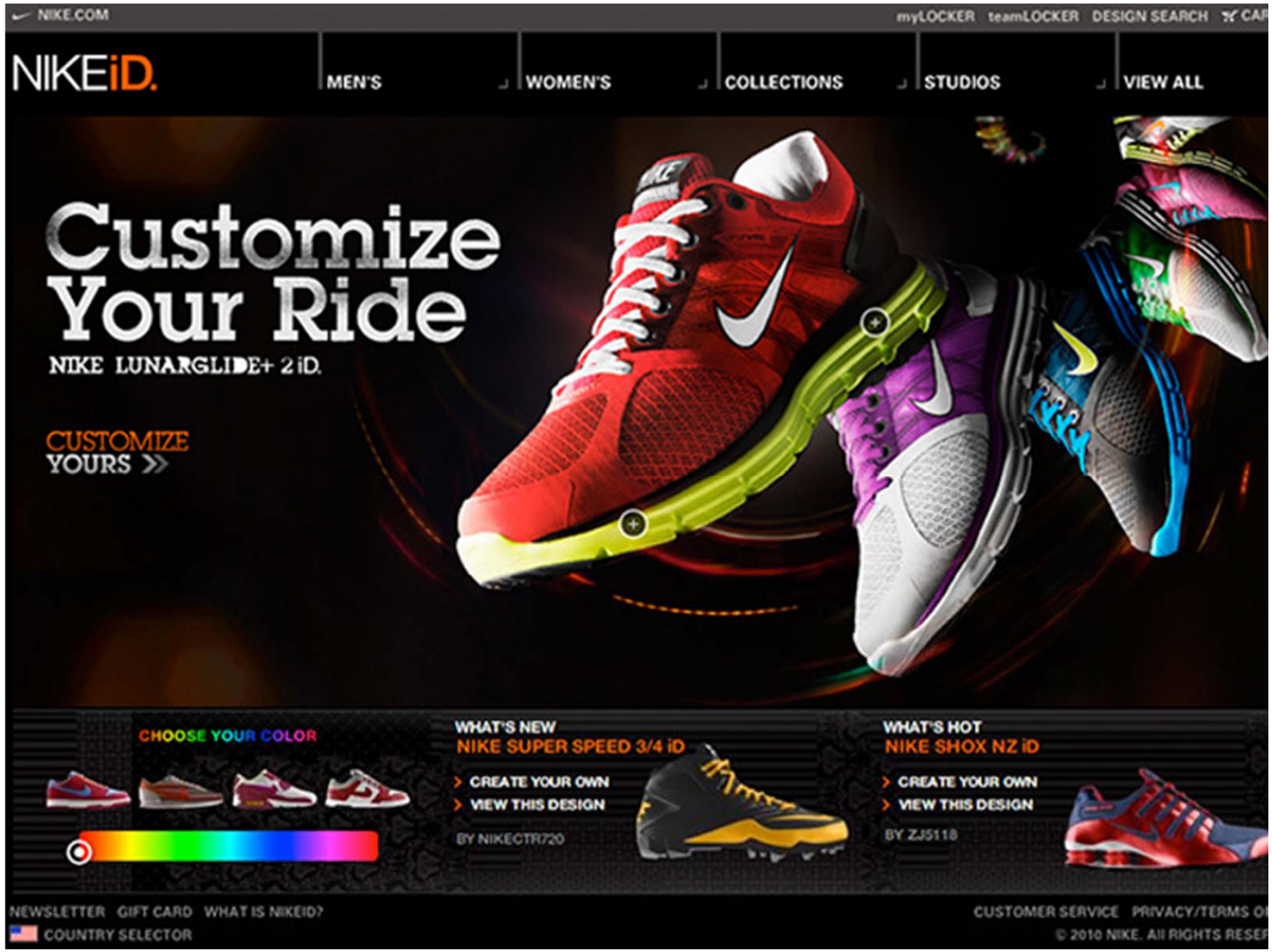
Quelle: Obermaier et al. (2015)

Smarte, vernetzte Produktionsprozesse: “Weak Links” der Wertschöpfung



Quelle: Porter (1985)

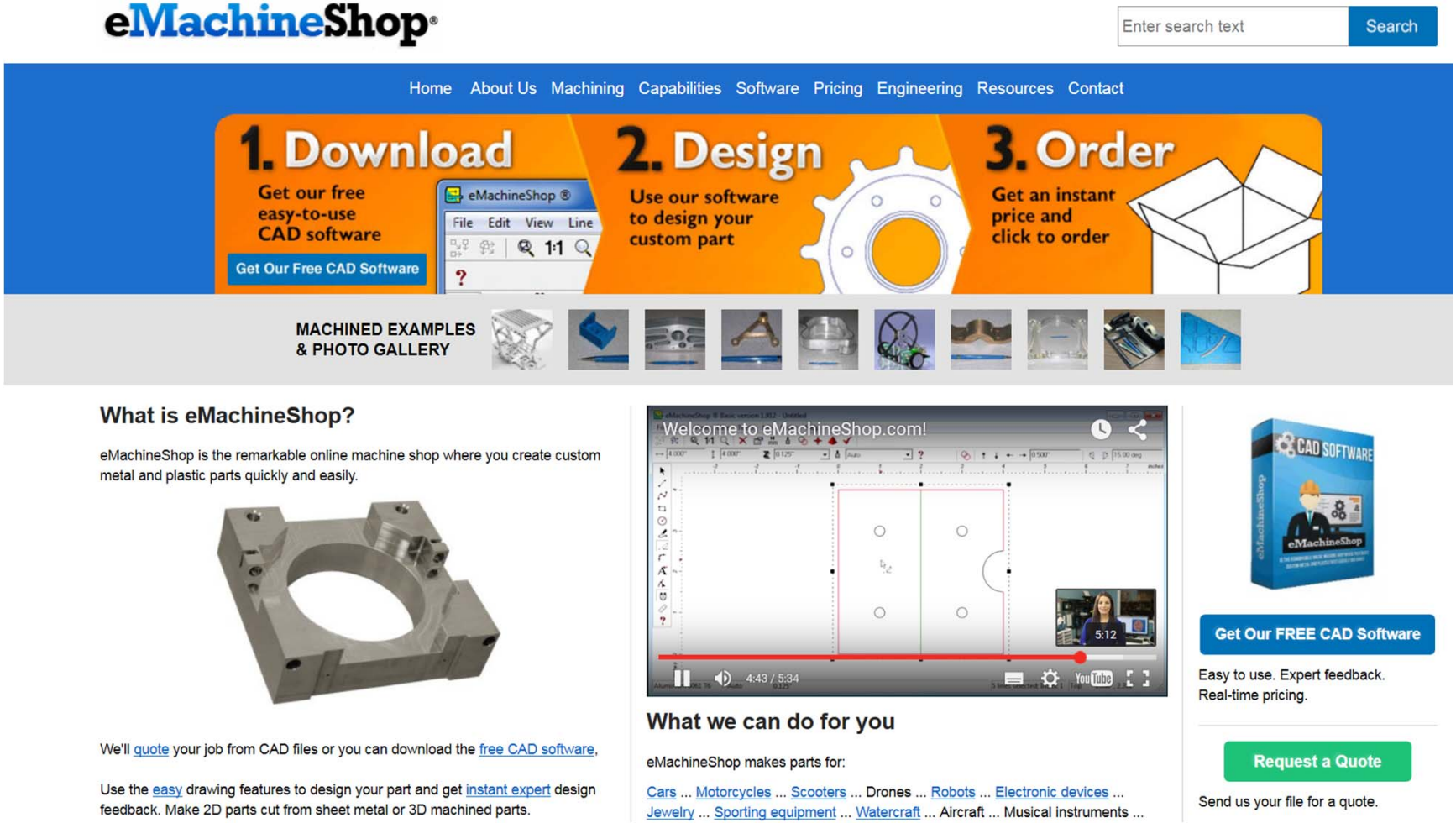
Smarte, vernetzte Produktionsprozesse: NIKEiD. for „produsers“



Smarte, vernetzte Prozesse: myMuesli

MyMüsli (2016)

Smarte, vernetzte Prozesse: eMachineShop



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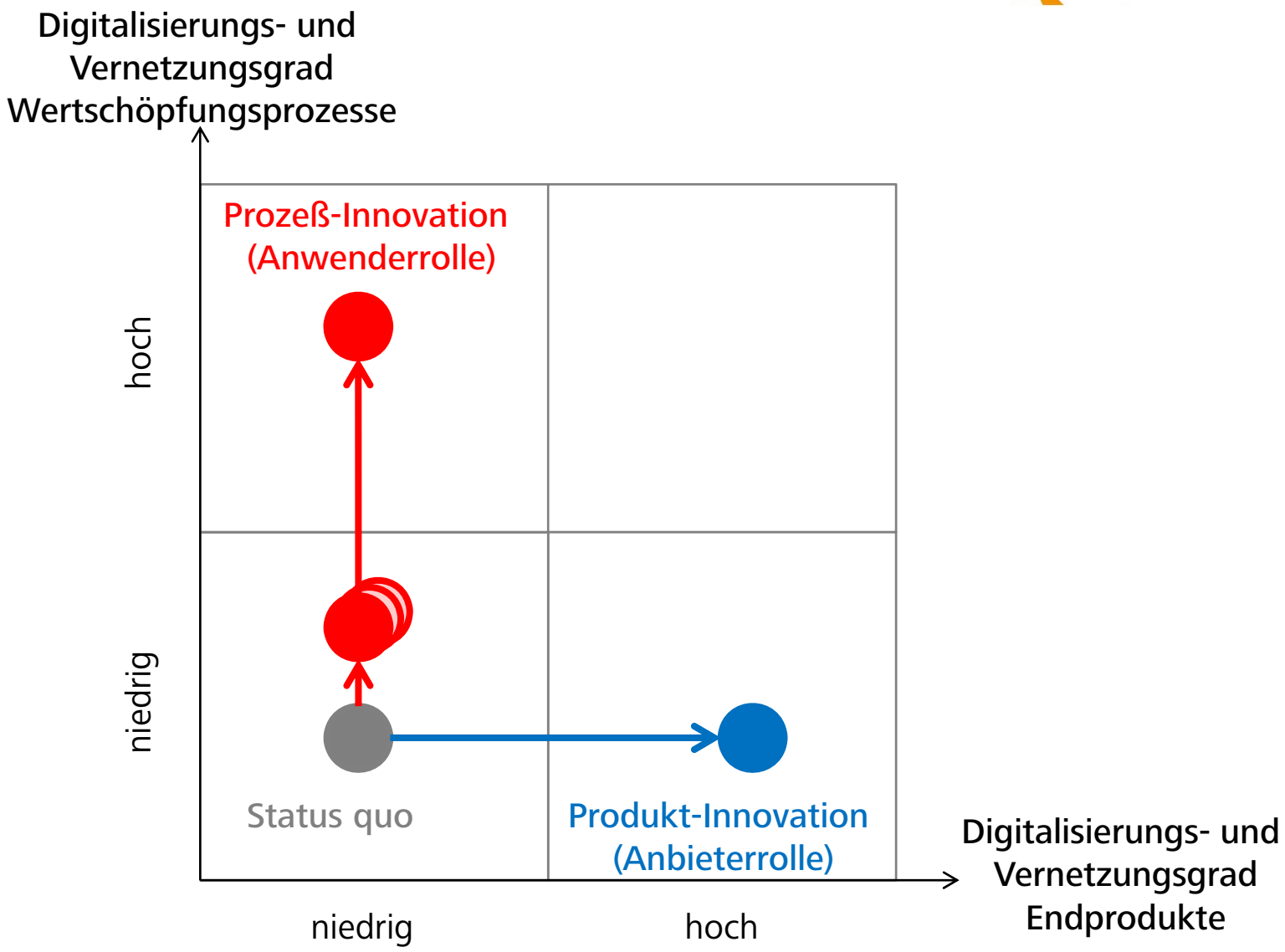
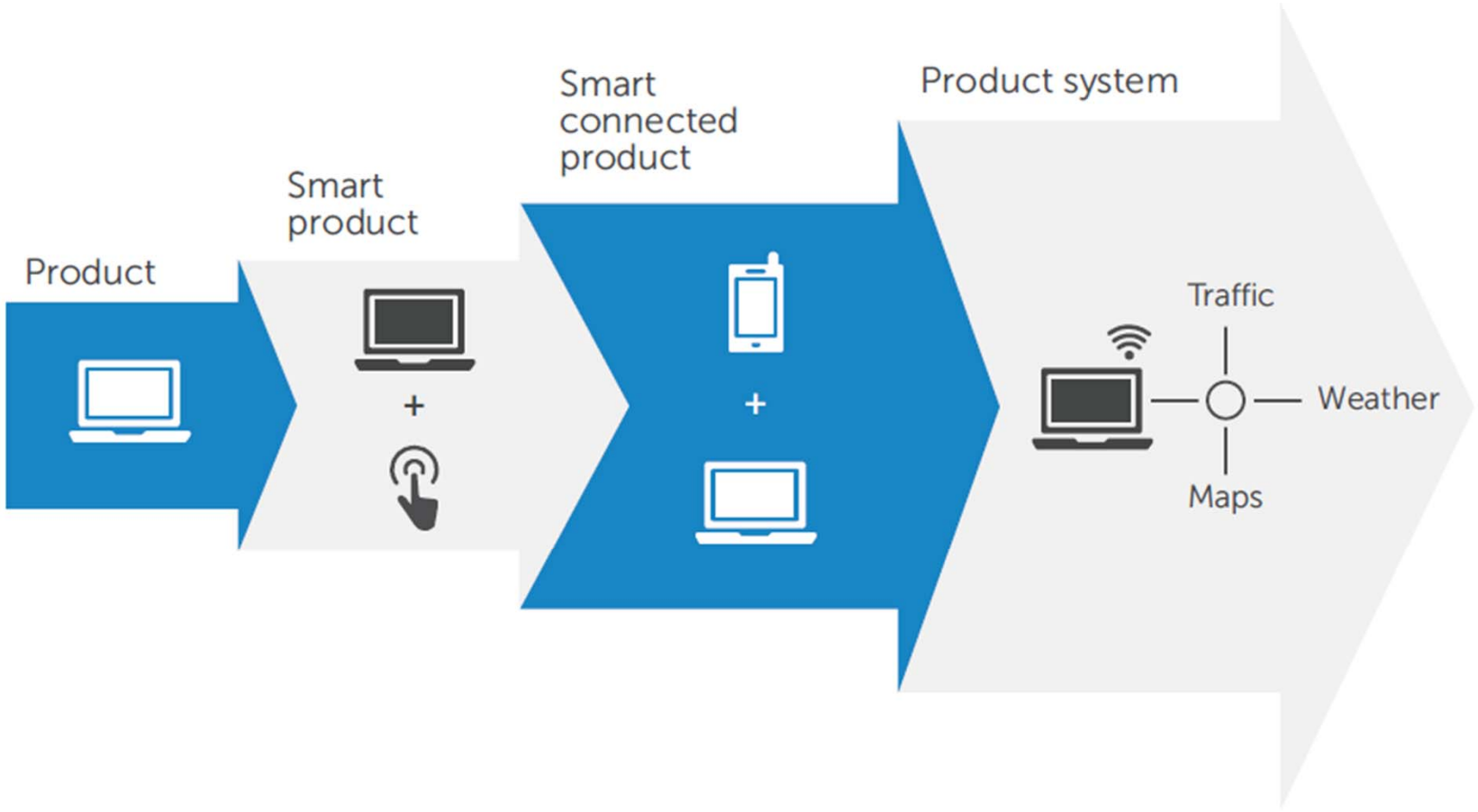


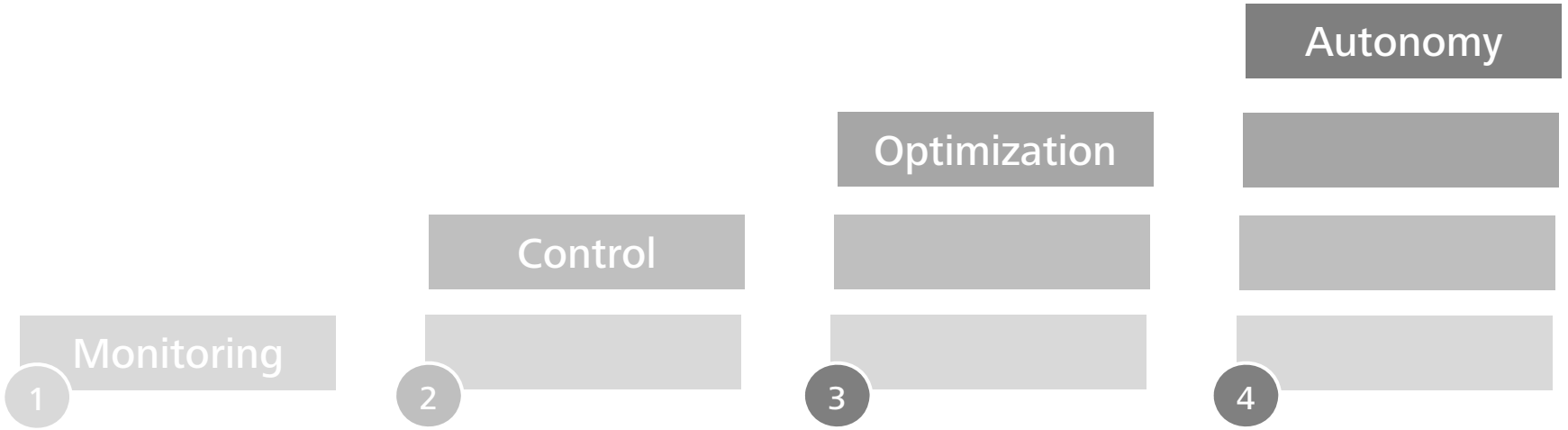
Quelle: Obermaier (2016)

Smarte vernetzte Produkte und Produktsysteme



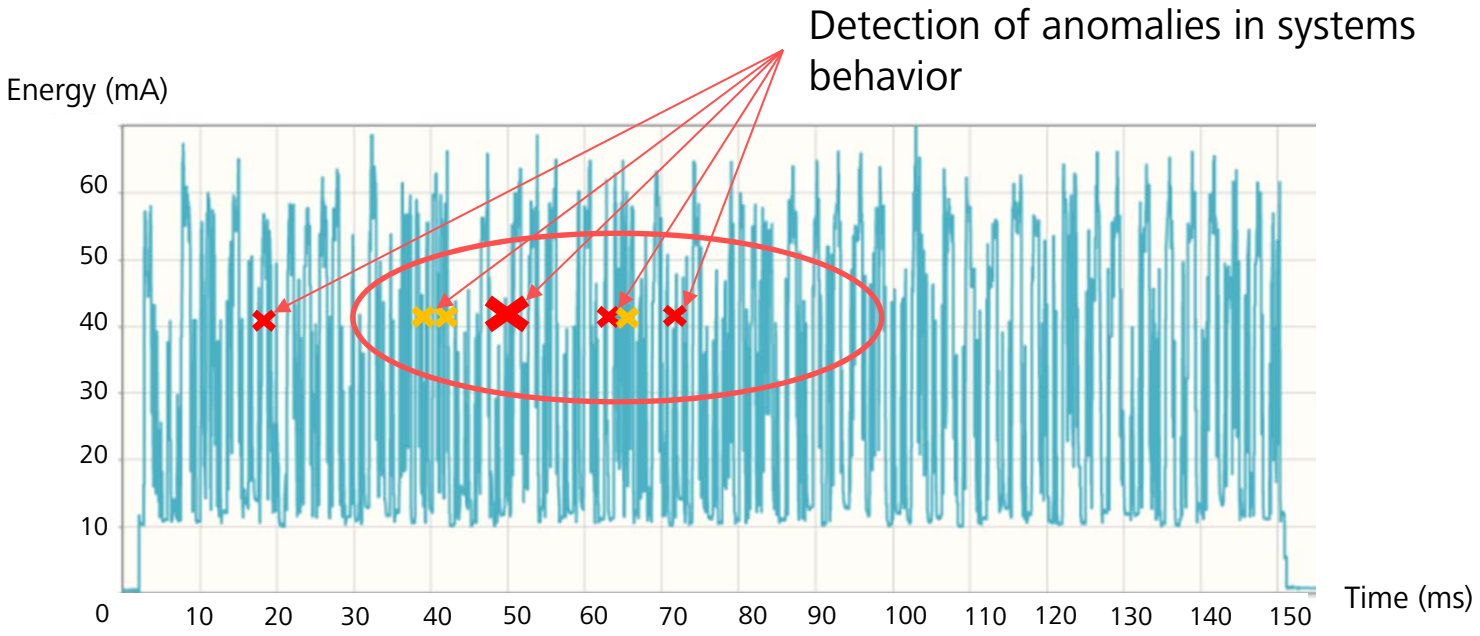
Porter / Heppelman (2014)

Smarte vernetzte Produkte: Smart Services

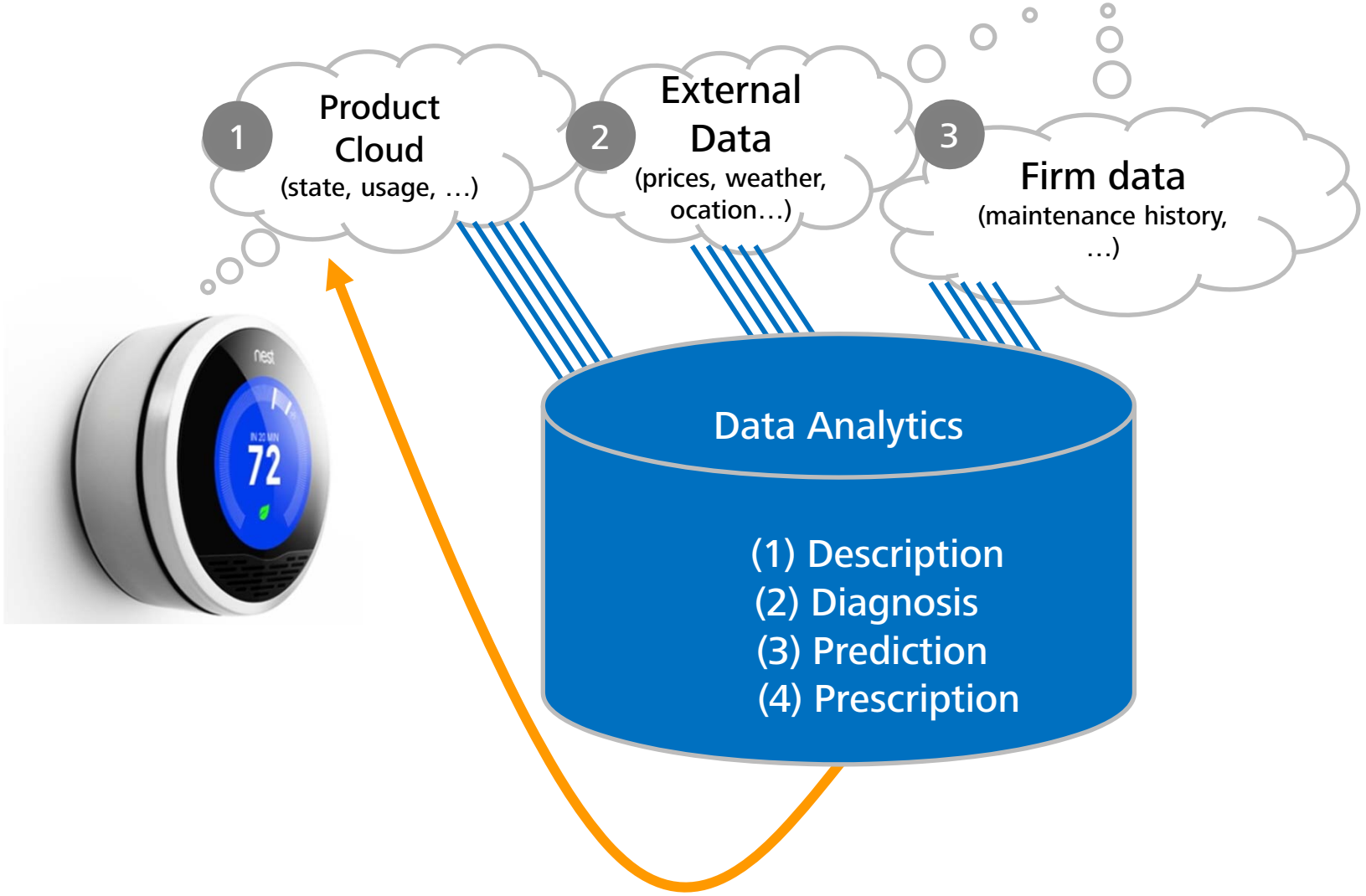


Porter / Heppelman (2014)

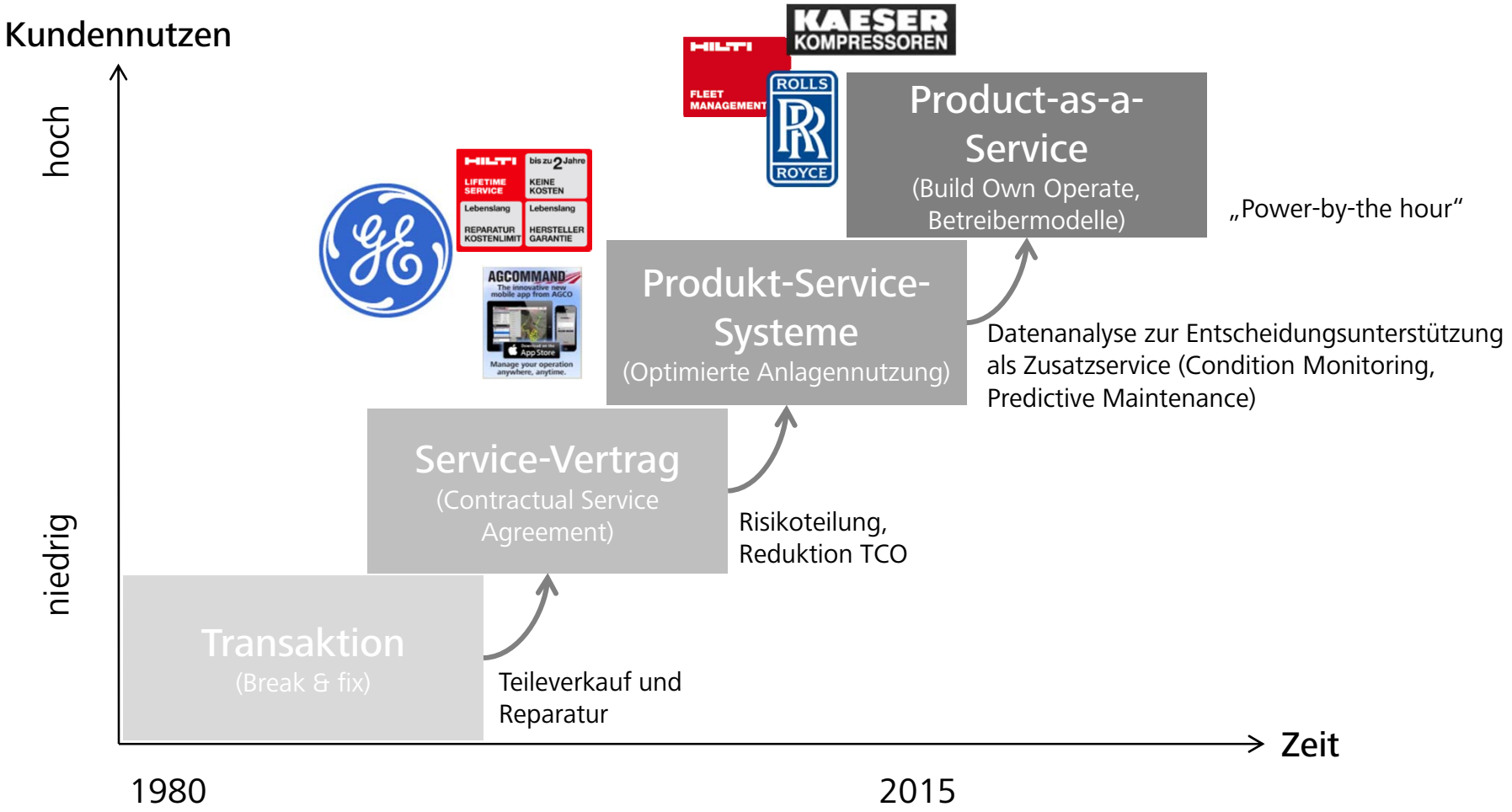
Smarte vernetzte Produkte: Condition Monitoring & Predictive Maintenance



Smarte vernetzte Produkte: Daten-Infrastruktur und Data Analytics



Smarte vernetzte Produkte: Trend zur Servitization



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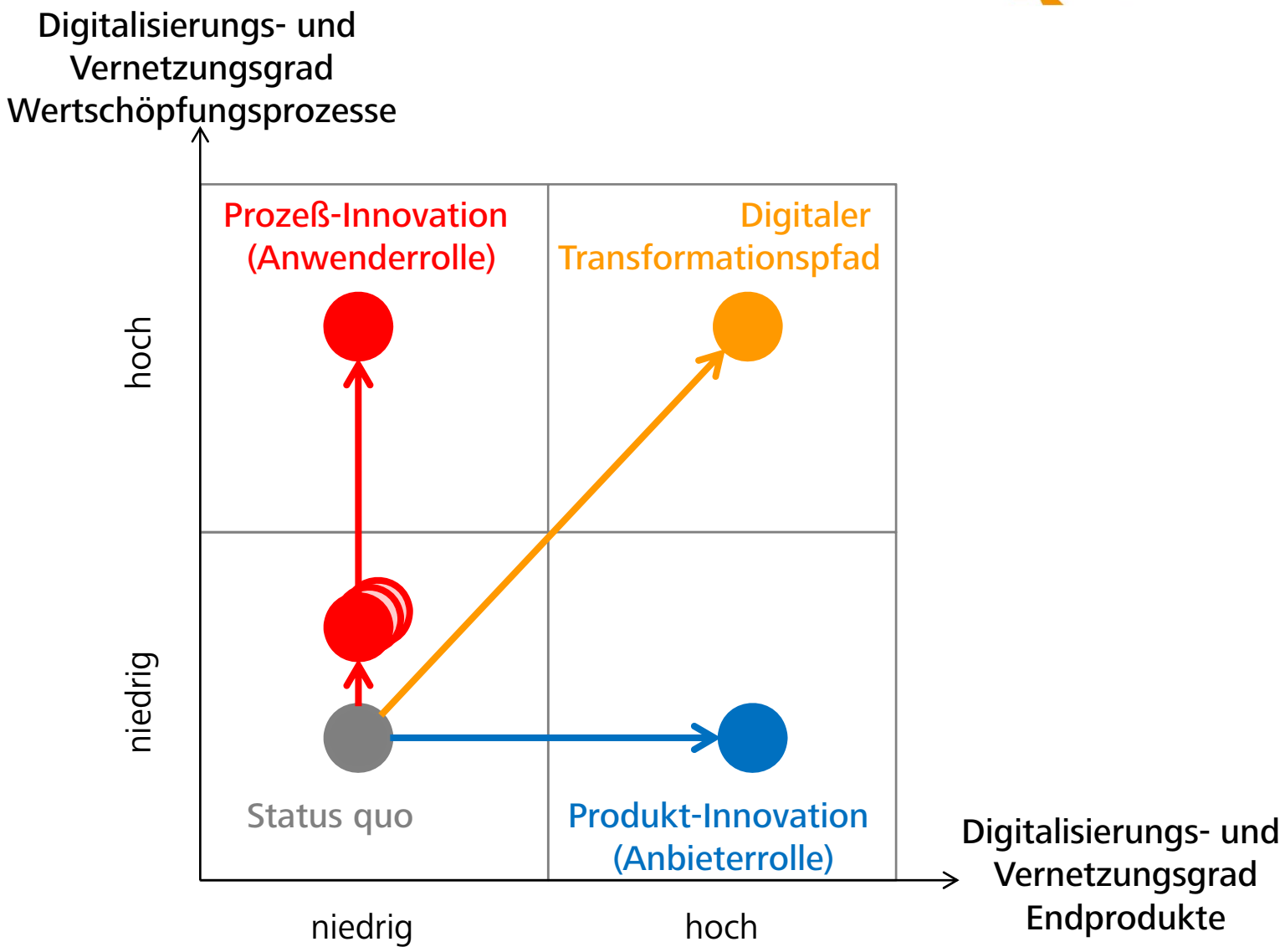

Quelle: Obermaier (2016)

Vielen Dank für Ihre Aufmerksamkeit!

Professor Dr. Robert Obermaier
Universität Passau
Lehrstuhl für Betriebswirtschaftslehre
mit Schwerpunkt Accounting und Controlling

Telefon: (0851) 509-3270
Telefax: (0851) 509-3272
E-Mail: controlling@uni-passau.de