Swiss Alliance for
Data-Intensive Services

Zürcher Hochschule
für Angewandte Wissenschaften
School of
Engineering

Data Science und IoT:
Perspektive neue Service-Modelle

WI-AWARD 2019

11. Schweizer Wirtschaftsingenieur AWARD

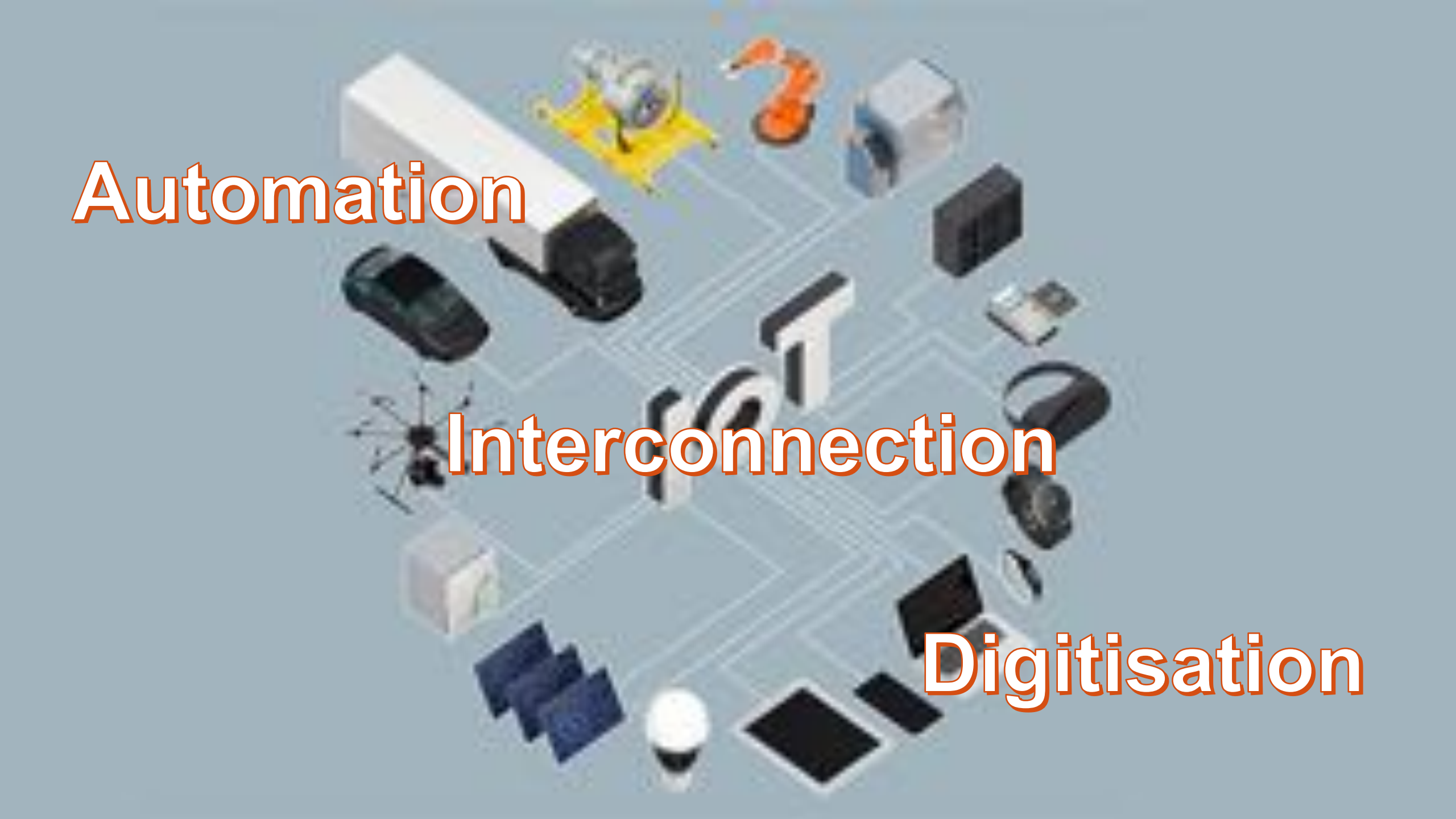
Dr. Jürg Meierhofer, ZHAW Plattform Industrie 4.0

www.data-service-alliance.ch

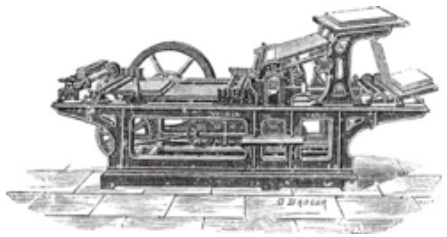
Ausblick

- Teil 1: Kurzer Industrie 4.0 Einblick
- Teil 2: Data und IoT-based Service Transformation in Industry
- Teil 3: IoT-based Industrial Services
- Part 4: Business Model Approaches / Transformation / Ecosystems

Teil 1:
Kurzer Industrie 4.0 Ausblick


Automation
Interconnection
Digitisation

The fourth Industrial „Revolution“



Industry 4.0

1st Industrial Revolution:
- Mechanical factories
- Water / steam energy

2nd Industrial Revolution:
- Mass production
- electricity

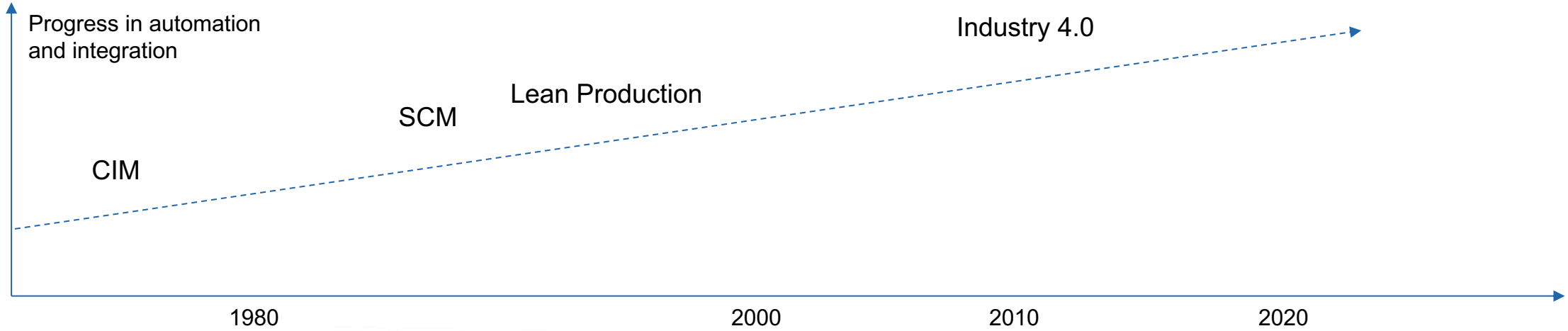
3rd Industrial Revolution:
- Automation
- ICT

4th Industrial Revolution:
- Cyberphysical systems
- Internet @ Factory

complexity

18th century | 19th century | 20th century | 21st century

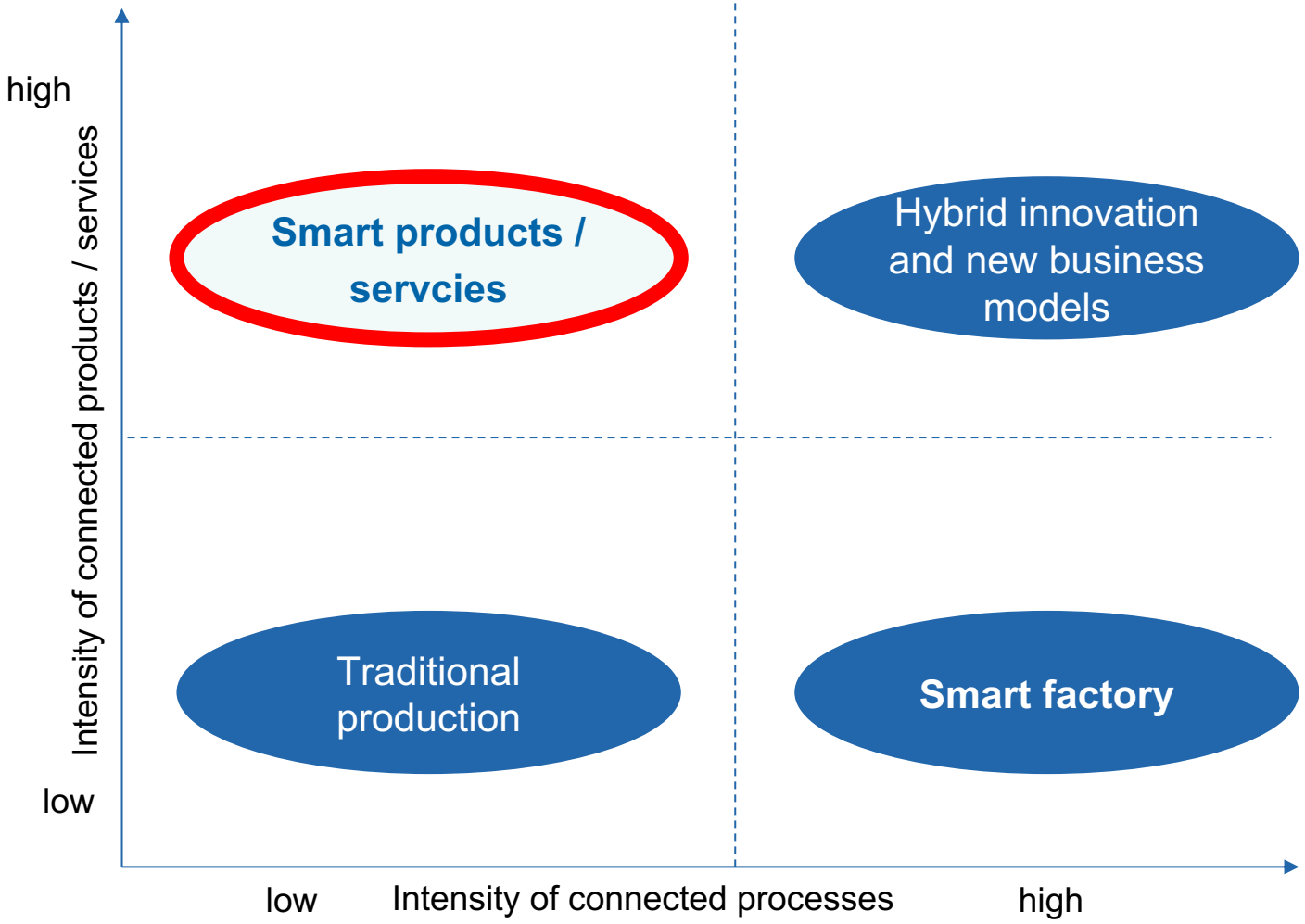
Relation with Previous Approaches: CIM / SCM / Lean



Increasing availability, affordability of:

- IT infrastructure
- Data processing
- Communication infrastructure (internet)
- Sensors and actors
- Cloud computing
- Internet of things

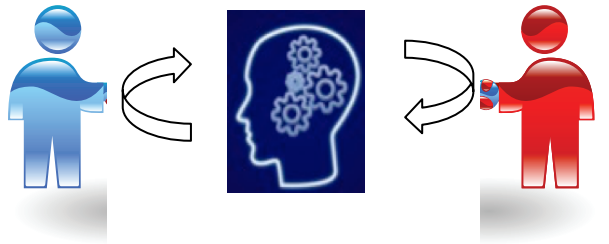
Dimensions of Industry 4.0 / Digitalisation



Adapted from: R. Obermaier, Industrie 4.0 als unternehmerische Gestaltungsaufgabe, Springer, 2016.

Teil 2:

Data und IoT-based Service Transformation in Industry



Service - Value in Use

Newer term: „value in context“

Value-in-use

Value-in-exchange

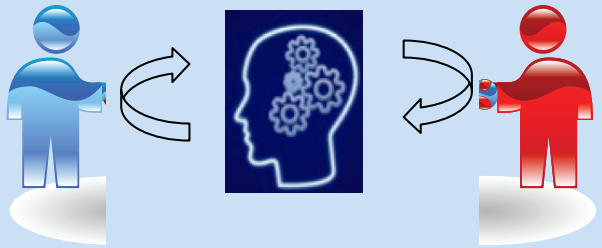
Co-Creation, Co-Production in Services

Service dominant logic (SDL)

service is considered the fundamental purpose of economic exchange (Lusch and Vargo)

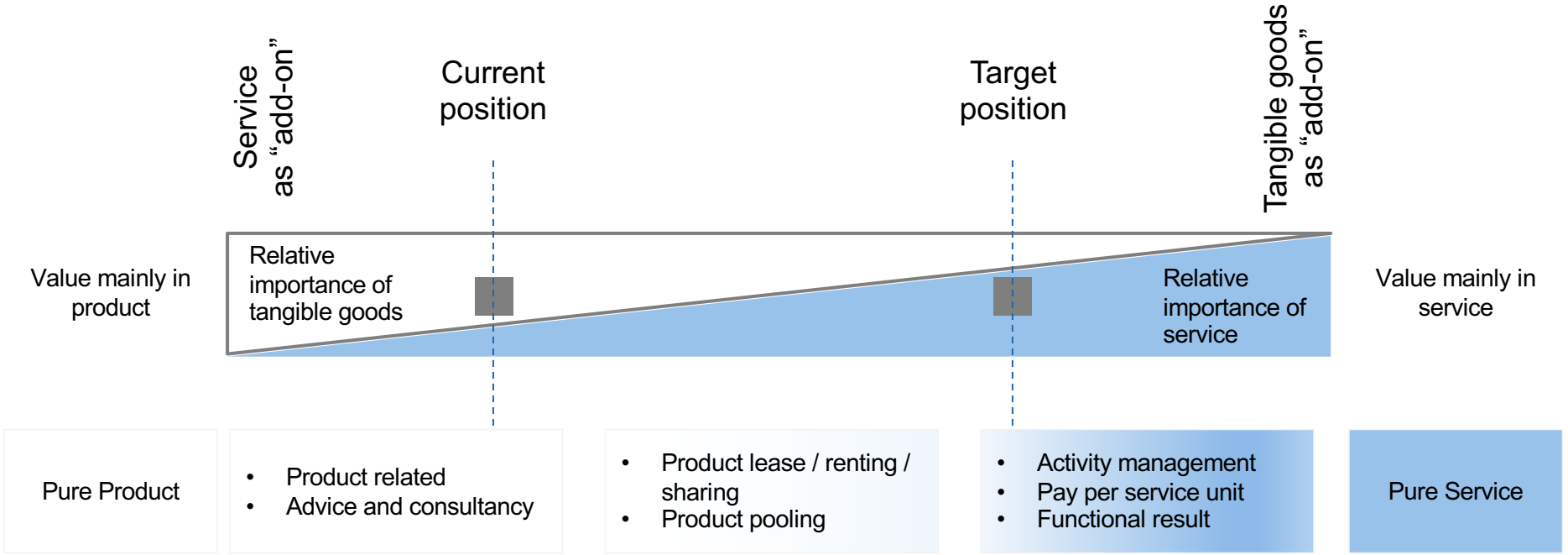
Factory

Value Creation



Customer Interaction

Managing the transition



Angepasst von: Rogelio Oliva Robert Kallenberg, (2003),"Managing the transition from products to services", International Journal of Service Industry Management, Vol. 14 Iss 2 pp. 160 - 172.
Und
Tukker A., eight types of product– service system: eight ways to sustainability? Business Strategy and the Environment, Bus. Strat. Env. 13, 246–260 (2004)

How to develop Services?

Service Design

Kunden-zentriertes Service Design

Swiss Alliance for Data-Intensive Services

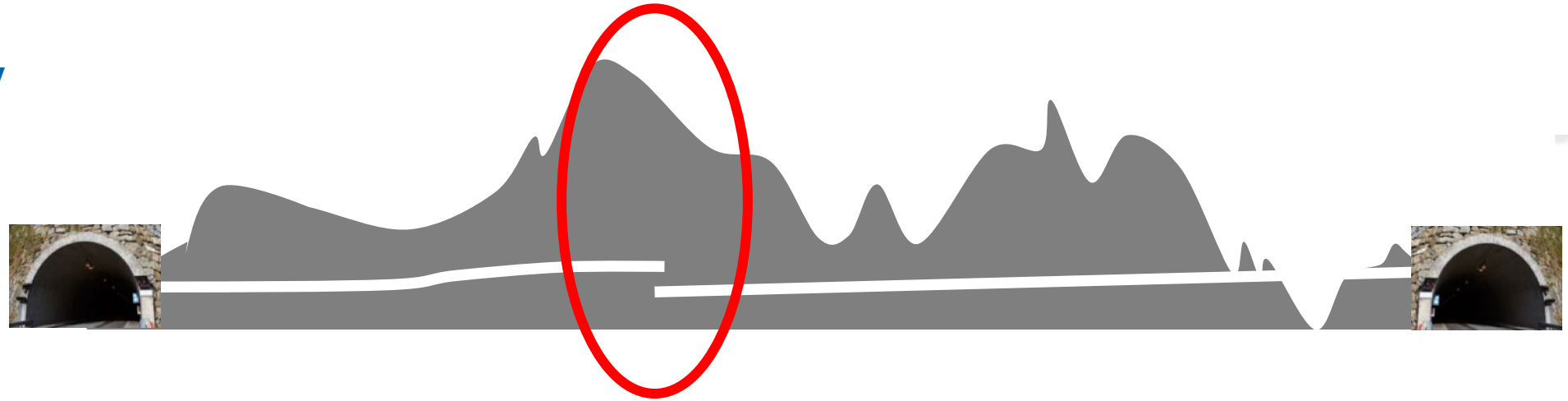
Zürcher Hochschule für Angewandte Wissenschaften

School of Engineering

Was brauchen die Kunden?

Where Technology meets Business

Technology



Customer

Teil 3:

IoT-based Industrial Services

Verschiebung zu neuen Dienstleistungstypen

Data-specific Challenges!

Neue Service-Modelle

Beratung, Individualisierung, Condition Monitoring, Predictive Maintenance, Performance Optimierung

"Von 47% der Unternehmen als wichtig bezeichnet"

Frühere Service-Modelle

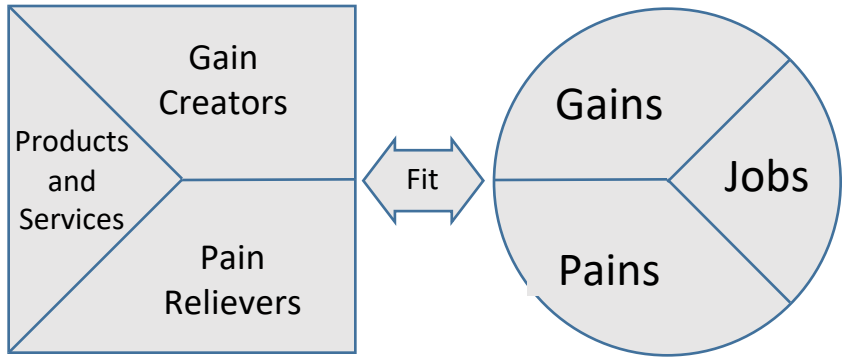
Inbetriebnahme, Wartung und Reparatur

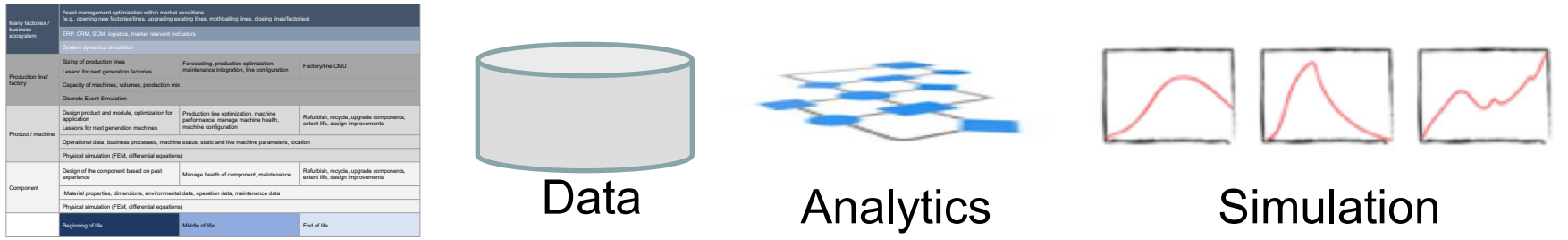
Angepasst von: Deloitte, BAK Basel, http://www.bakbasel.ch/publikationen/berichte-studien/berichtestudiendetail/date/2015/11/11/deloitte-und-bakbasel-studie-wachstumschancen-strategien-fuer-schweizer-industrieunternehmen/

Beginning of Life (design, testing production)

Middle of Life (product usage, after sales services)

End of Life (recycling, refurbishing, disposal)

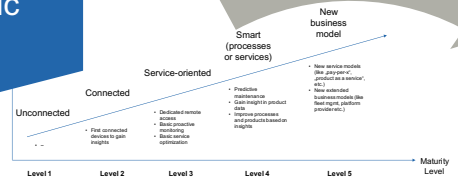




Der Suchpfad konvergiert

Procedure Model

1. Strategic Analysis

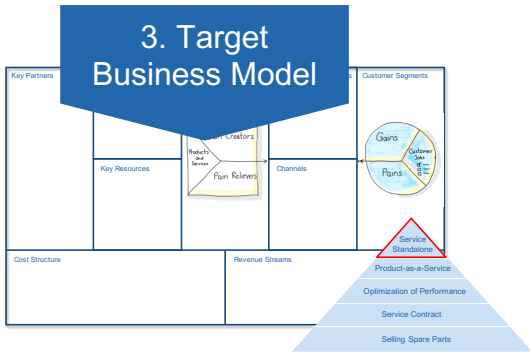


Assessment: where do we stand in the maturity model?

2. Idea Generation

Service Design: how can we deliver value to our customers / users?

3. Target Business Model



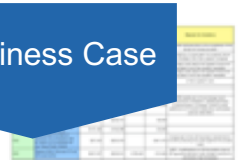
Business Model: how can the organization create and deliver value?

Iterate until viable business model found

4. Technical Model

Which technical elements are required to create the value?

5. Business Case



How do the cost and revenue side look?

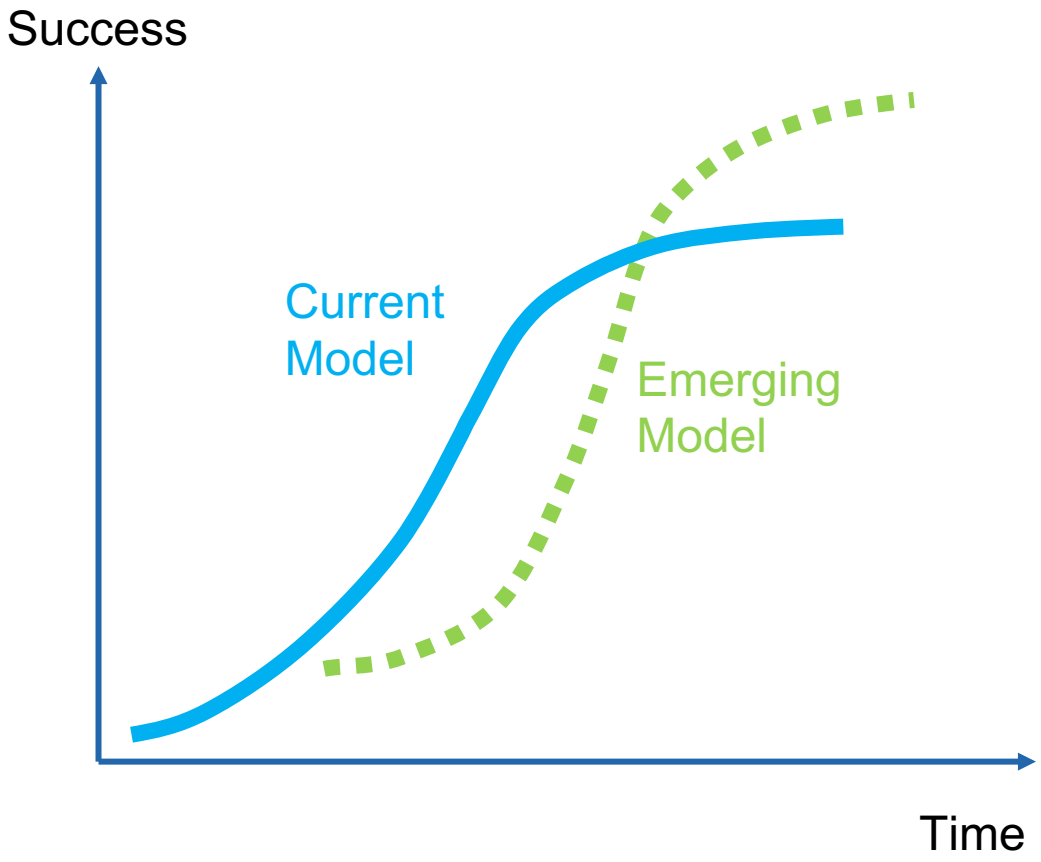
6.Implementation Roadmap

Sequence of projects to reach the target model.

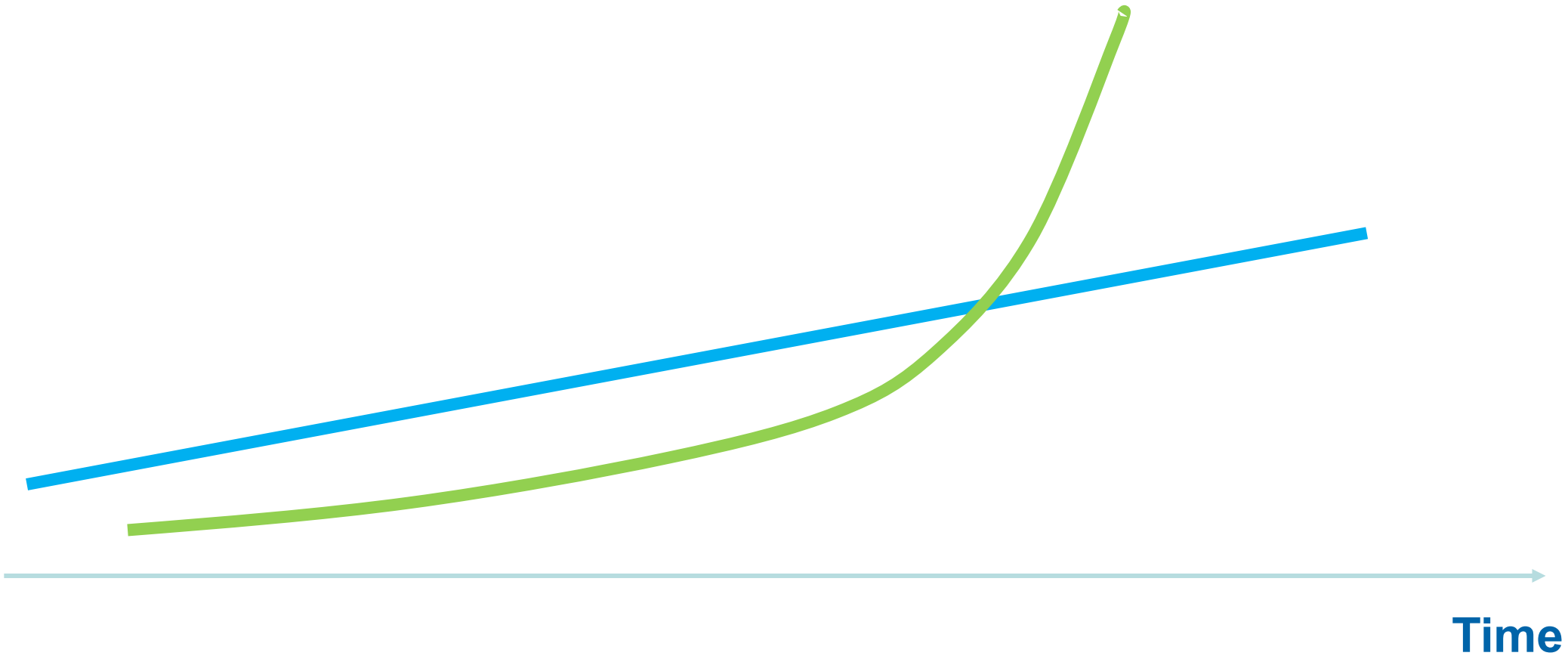
Teil 4:

Business Model Approaches / Transformation / Ecosystems

Life Cycle of a Business Model

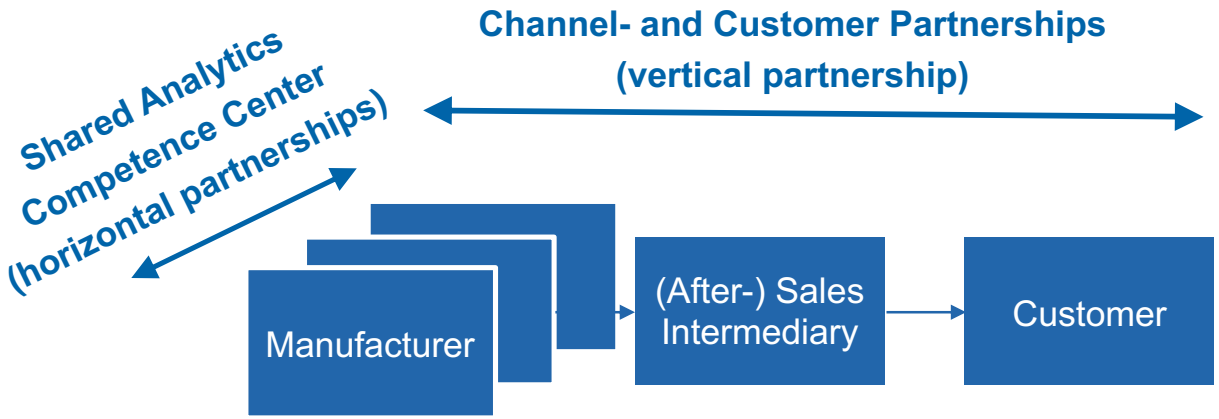


Exponential Growth of disruptive Technologis

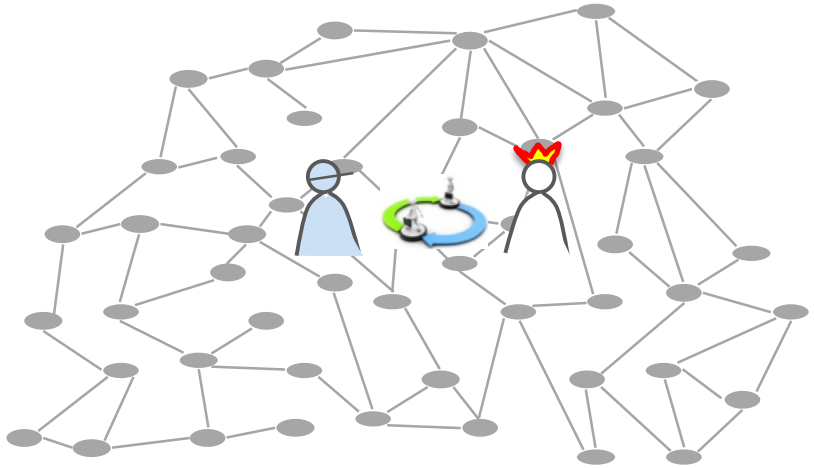


Where does innovation happen?

Service Ecosystems



Service Ecosystem



National Thematic Network

Swiss Alliance for
Data-Intensive Services

Supported by:

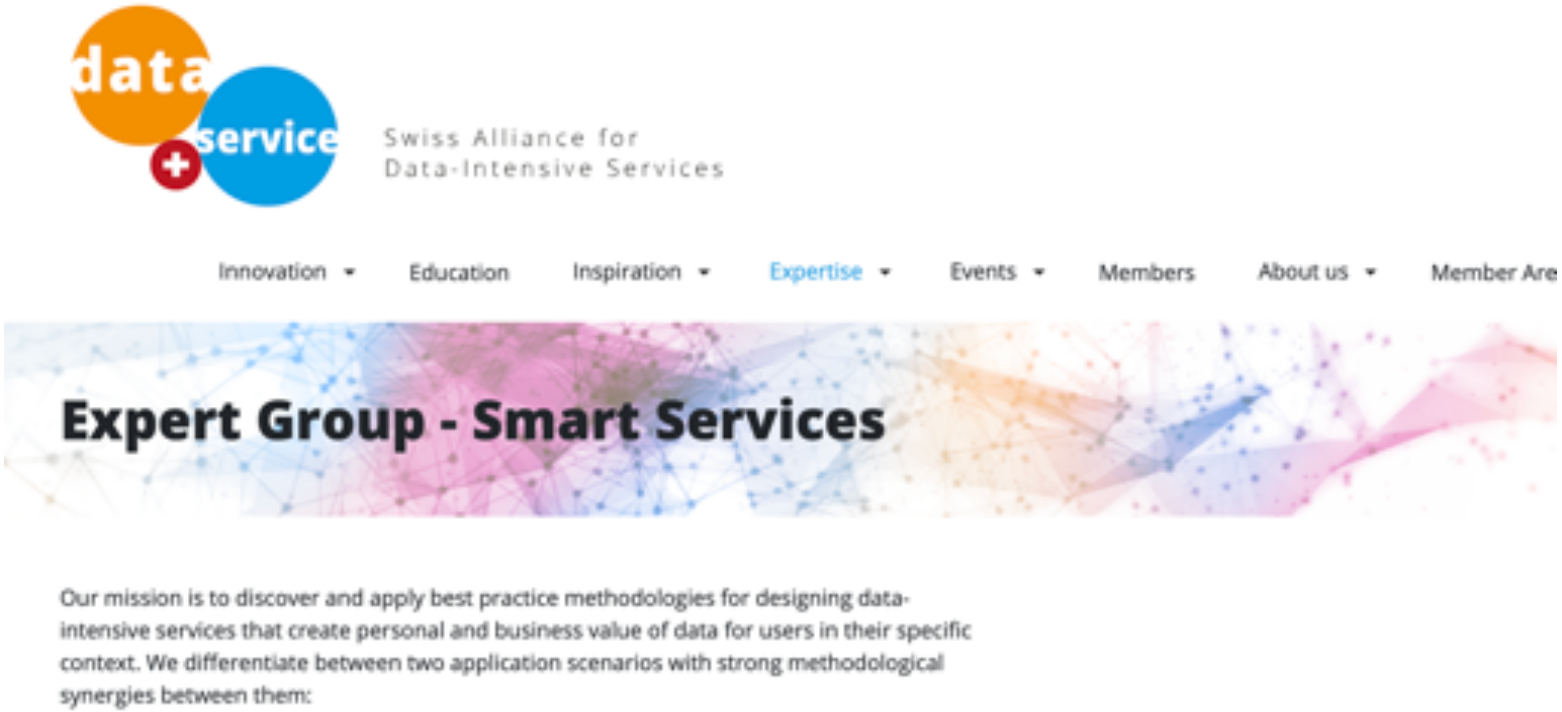
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Innosuisse – Swiss Innovation Agency

http://www.data-service-alliance.ch

Smart Industrial Services



Jürg Meierhofer

Shaun West

ZHAW Platform Industry 4.0