

# »Advanced Data Analytics«

for Smart Products, Production and Services

Artificial  
Intelligence

Cognitive Analytics

Machine  
Learning

Neural  
Networks

Predictive  
Sales

Deep  
Learning

## Call for Partners: Consortium Project

**KEX.**  
Knowledge Exchange®

Our Expert Network:



DEMOFABRIK  
AACHEN



Fraunhofer  
IPT



RWTH AACHEN  
UNIVERSITY

**fir**  
an der  
RWTH Aachen

# Smart Products, Production, Services and Business Processes

## Motivation

Digitalization, including the integration of networking capabilities into physical products and production lines, has entered various industries and application fields by now. Terms like »Internet of Things«, »Industrie 4.0«, »The Industrial Internet« or »Smart Data« are no longer just buzzwords but are being put into execution by various companies. Vast quantities of data are generated daily and offer new potentials when collected, aggregated and analyzed for e. g. better decision making or potentially disruptive digital business models. But how do companies cope with these new and challenging technologies? How is value created to your business through advanced data analytics and which platform and tools should you choose for your company and application?

Various industries and markets have a high potential for smart products, production, services and business processes getting even »smarter« through advanced data analytics. What will be the lead application that will drive data analytics technologies in particular segments? Which related products, services and data providers will define the future ecosystem of your products and services?

Which markets and applications will be the next to profit from and be potentially disrupted by new digital business models enabled by advanced data analytics?

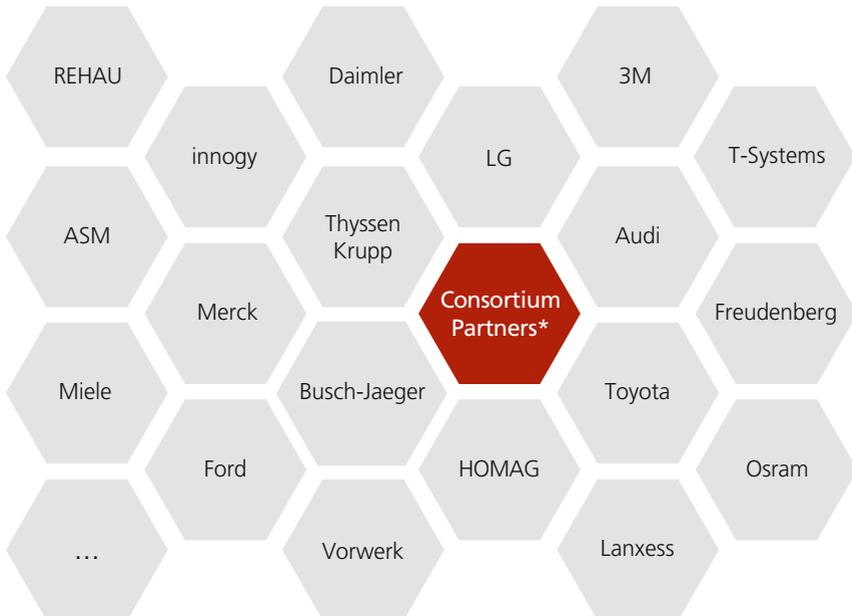
In cooperation with the most relevant players, this consortium study aspires to create economic and technological transparency, explore and analyze market and technology trends as well as possibly game-changing digital business models and experience data analytics tools in practice. Furthermore, we aim to promote valuable exchange and networking between the most relevant international industry partners in the field of data analytics for smart products, production, services and business processes.

In order to achieve these goals, we are promoting a focused consortium study "Facing the Smart Future in Advanced Data Analytics" for smart products, production, services and business processes starting in June 2017.

Since 2014 we are conducting consortium projects in the fields of »Industrie 4.0« and »Additive Manufacturing« with more than 80 leading companies from different industries by now.



## Selection of previous Consortium Partners



\*all mentioned companies are partners of a Smart Future consortium study hosted by KEX AG

# Facing the Smart Future

## Main Focus

This consortium project addresses current and future developments and trends in advanced data analytics for smart products, production, services and business processes thus making this complex technology field more tangible to our consortium partners. During the course of the project, as a consortium partner you will be able to influence the study focus.

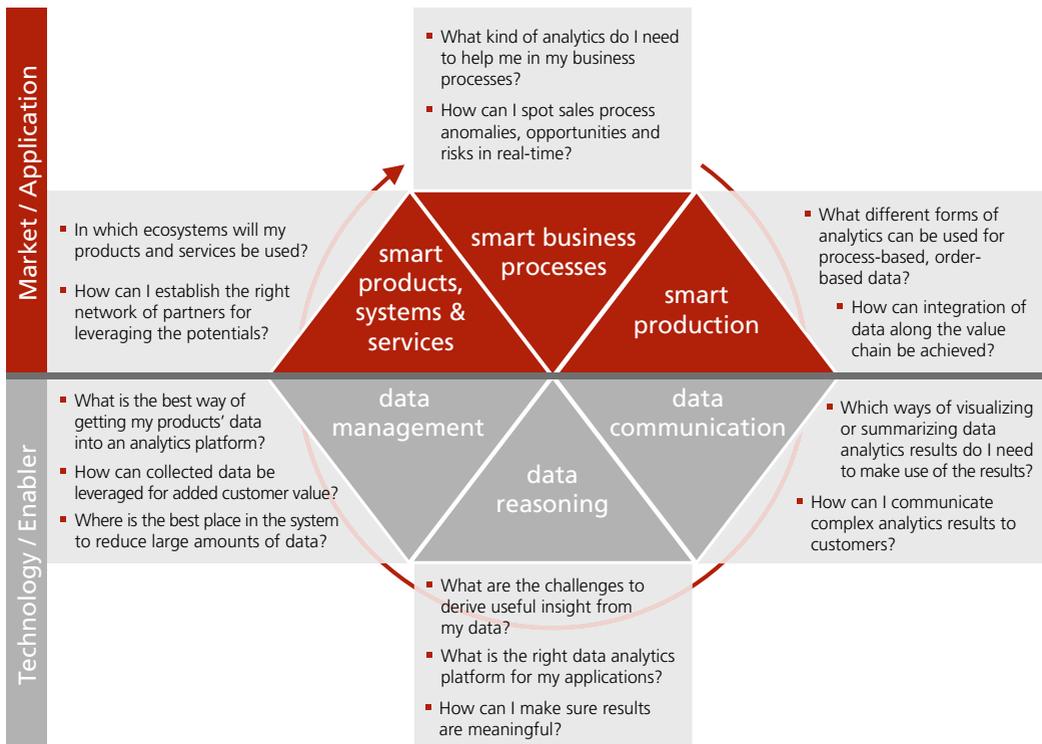
Specifically, the study covers a broad, explorative range of questions and issues covering technologies, applications and available tools in the field of advanced data analytics.

Furthermore, today's and future digital business models are analyzed and developed. On the one hand, the study addresses technology users already working with or planning to implement data analytics in the context of smart products, production, services or business processes. On the other hand, it enables technology providers to know their future markets and applications. Thus, the study forms a community covering all relevant elements of the »smart« value chain.

## Objectives

In our study we aim to create transparency and hands-on experience with regard to

- current and future potential of advanced data analytics for smart products, production and services as well as business processes
- relevant recent technology developments and upcoming technology trends
- available data analytics tools and decision factors for choosing the right platform
- existing best practices as well as challenges and opportunities for the design, development, production or management of new applications based on data analytics
- new digital business models enabled by data analytics and derived market development opportunities



Exemplary key questions to be answered by the study. The consortium partners decide on the final questions.

# Partners and Markets in Focus

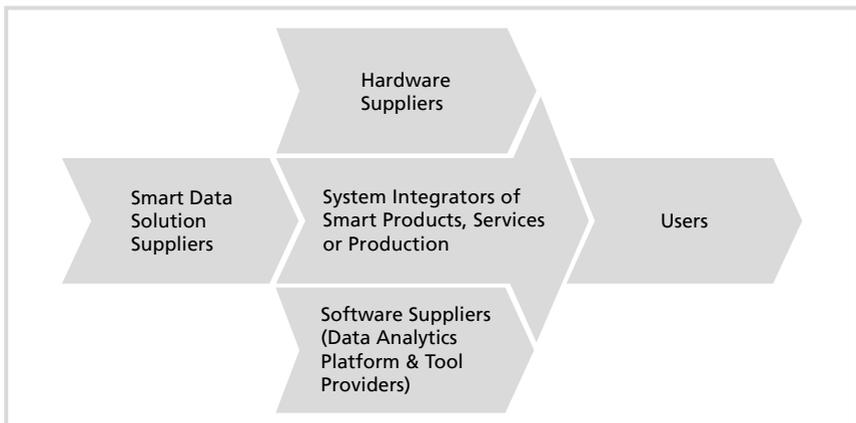
## Networking with cross-industrial Players and Experts

In order to achieve the mentioned objectives, the consortium study will be based on the extensive knowledge and previous projects done by the research partners in the context of »Industrie 4.0«, »Data Analytics« and other smart applications, and leverage the pooled expertise in the consortium.

Furthermore, we are building an expert network that enables knowledge exchange and

information generation across value creation stages and business sectors.

In other words, we are bringing together all experts and decision makers involved with data analytics in smart products, production, services and business processes. Benefit from the opportunities provided by our network and determine which innovations will be cutting edge in the market soon!



Addressed partners in the study



## Markets

Advanced data analytics for smart products, production, services and business processes have already been established in specific markets such as consumer and electronics

already, but will also have an extensive effect in various other industry sectors in the future. In this consortium study we will focus on the following markets:



Automotive



Aerospace & Defense



Healthcare & Medical



Government Services



Industrial Solutions



Energy & Storage



Consumer & Retail



Transport & Logistics



Communication

# Study Approach

## Methodology

The study aims at providing transparency on advanced data analytics applications, technologies, tools and related future trends as well as aligning these with requirements from diverse applications within the most relevant target markets. This broad information basis will then be utilized to derive and assess highly attractive market opportunities and emerging potentials as well as new digital business models enabled by the use of data analytics.

### Phase 1 - Pilot Study

Status-quo of market applications, relevant trends, technologies and tools

### Phase 2 - Technology/Market analysis

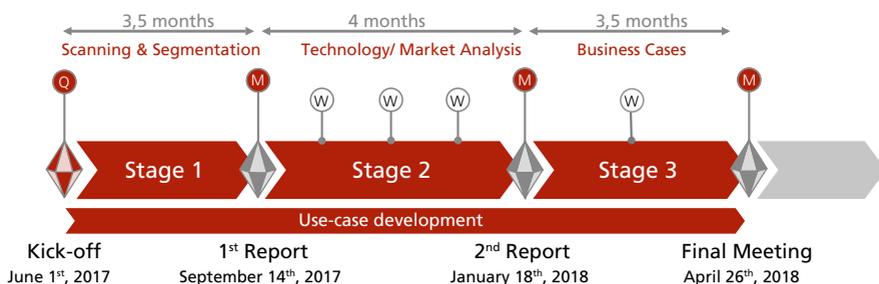
Detailed analysis on selected applications regarding technological opportunities and market potential

### Phase 3 - Business Cases

Comprehensive business cases on selected highlight applications regarding technical feasibility and market competitiveness

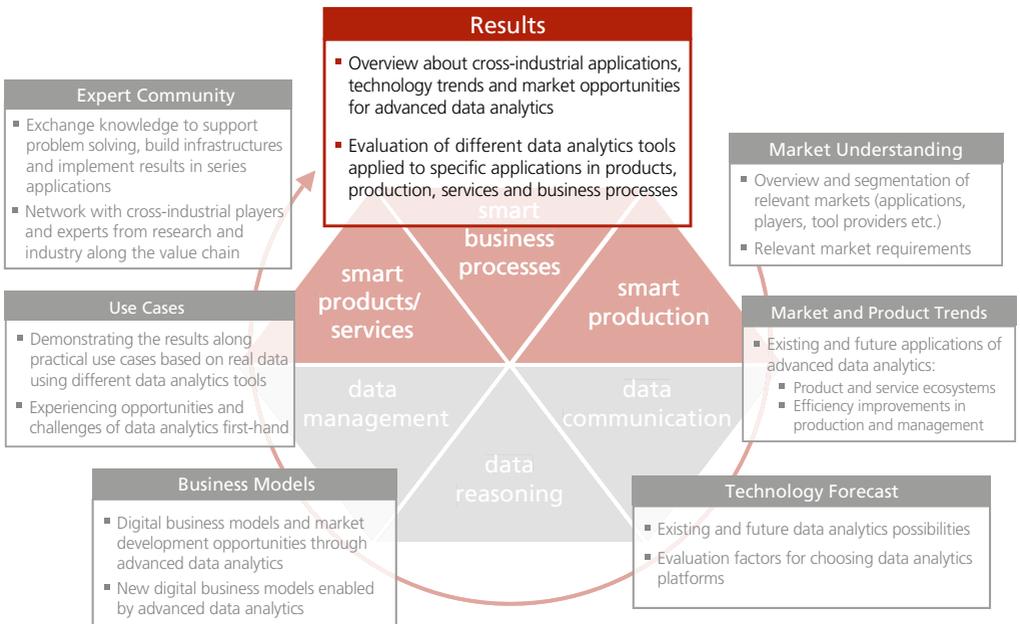
### Use Cases

Experience and test of different data analytics tools on real data





## General Study Approach



# Participation and Benefits

## Your Participation in the Project

Your participation in this consortium study provides a broad access to an expert community regarding current performance and future development of smart applications and data analytics in practice. Through your regular participation in the project meetings and

workshops you will be able to influence and direct the progress of the study. Furthermore, the consortium will get exclusive access to all independent study results.

## Your Benefits

- Learn how to leverage data to create value to your business
- Understand and shape the roadmap of upcoming data analytics applications in your industry
- Discover the technical challenges for the application of advanced analytics and how to cope with them
- Get to know digital business models enabled by data analytics
- Experience data analytics tools in selected use cases
- Network with cross-industrial players and experts

## Time Frame

Start: 1<sup>st</sup> of June 2017  
End: 26<sup>th</sup> of April 2018

## Costs

Investment in this study: € 25,000



idea

Vision

Social Media

www.

45,000  
50,000  
65,000

\$\$

92.000  
30.2000

# Long-term Opportunities

## Community for Smart Products, Production and Services

The consortium study also serves as an expert community for exchanging and generating knowledge on advanced data analytics and smart applications. After the participation in the study, the consortium has the option to join a dedicated center in the field of »Smart

Data Analytics«, »Industrie 4.0« and smart applications at the RWTH Aachen Campus, with infrastructure, software and machinery which can be used to conduct specific and agile development projects.

## Benefits of a long-term Participation in the Center Community

- Consolidation of study community and further development of study results
- Access to an entire company infrastructure (from shopfloor to ERP level)
- Test and validate company specific use cases of data analytics in a real production environment
- Interdisciplinary development of »Industrie 4.0« solutions and demonstration under real life conditions
- Participation in »living demonstrator« concepts
- Use of center facilities for customers and for further education events?





# Your Expert Network



## Fraunhofer Institute for Production Technology IPT

- Founding year: 1980
- 415 employees
- Business portfolio: Turbomachinery, Tool Making, Optics, Lightweight Technologies, Life Sciences Engineering, Integrated Mechatronic Systems
- Knowledge and experience in all fields of production technology for developing and optimizing solutions for modern production facilities

[www.ipt.fraunhofer.de](http://www.ipt.fraunhofer.de)



## FIR (Institute for Industrial Management) at the RWTH Aachen University

- Founding year: 1953
- Industry-oriented research in the areas service management, information management and production management
- Part of the initiative for excellence in North Rhine-Westphalia (NRW)

[www.fir.rwth-aachen.de](http://www.fir.rwth-aachen.de)



## DFA Demonstration Factory Aachen

- Founding year: 2013
- Small-scale production of marketable products with a high vertical range of manufacture on 1.600 m<sup>2</sup>
- Application, exploration and further development of »Industrie 4.0« solutions with industrial and research partners
- Implementation of smart systems enabling transparent and consistent order tracking on the shop floor
- Further education in a real production environment

[www.demofabrik-aachen.de](http://www.demofabrik-aachen.de)



## Laboratory for Machine Tools and Production Engineering (WZL) of RWTH Aachen

- Founding year: 1906
- 760 employees
- 16.000 m<sup>2</sup> offices and laboratories
- Business portfolio: Manufacturing Technology, Gearing Technology, Machine Tools, Metrology and Quality Management, Production Engineering and Production Management
- Knowledge and experience in all fields of production engineering and production management for developing and optimizing solutions for modern production facilities

[www.wzl.rwth-aachen.de](http://www.wzl.rwth-aachen.de)



Knowledge Exchange<sup>®</sup>

## KEX Knowledge Exchange AG

- Founding year: 2012
- Technology and market information provider
- Demand-based provision of information: Scanning, scouting and monitoring of markets and technologies, as well as exclusive access to an unique network of experts

[www.kex-ag.com](http://www.kex-ag.com)

# Contact Information

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