

**INPUT PAPER**

# **Drivers of innovation for digital business models**

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# Input: Drivers of innovation for digital business models

**This input paper presents the current status of discussions within Plattform Industrie 4.0's Working Group on Digital Business Models. It is designed to serve as a basis for other discussions outside Plattform Industrie 4.0 and does not present any final results.**

## Plattform Industrie 4.0's new Working Group 6

The discussion about what Industrie 4.0 contributes to value creation is increasingly focusing on mechanisms of action and architectures of digital business models. Questions surrounding the added value it can bring to German industry, and how it can raise Germany's competitiveness and quality of life, are being discussed by government, scientists, business associations and the social partners alike. Plattform Industrie 4.0 has therefore set up a new Working Group on Digital Business Models in Industrie 4.0 to address these questions and, through structured discussion between different stakeholders, to provide stimulus for action.

## Understanding and grasping opportunities for industry

Our aim is to develop a collective understanding about the components and mechanisms involved in digital business models and about the opportunities they provide. Presenting examples, we will set out what digital business models already exist on the market and will analyse their architectures and the dynamics of the value creation networks upon which they are based. This input paper presents the first steps taken in this work, setting out initial results from our expert workshop on drivers of innovation in the goods-producing industry.

## What are digital business models?

The focus of the working group is on digital business models. By looking at use cases on the market and feeding in scientific expertise, we seek to identify mechanisms of action and to develop typographies.

We define business models in accordance with Osterwalder and Pigneur (2010), as follows: "A business model describes the rationale of how an organization creates, delivers, and captures value." This typically includes the value propositions, the value creation architecture, a partner network,

and the profit model. Customer segments, channels and relationships are summarised in the customer concept. According to Jaekel (2015), digital business models in value creation architecture are characterised by their focus on data and analytics, and they organise their partner network as a scalable ecosystem via platforms. This goes hand-in-hand with a transformation of the value proposition (products and services) and the profit model (cost structures and revenue). One of our tasks will be to assess how applicable this definition is for the goods-producing industry.

## Added value of digital business models

Digitalisation has been around in industry for a long time now. Up to now, the focus has primarily been on its use to improve operative efficiency, facilitate quality control and reduce costs. This includes:

- Speeding up and simplifying (production and logistics) processes to achieve cost reductions
- Facilitating greater scalability by raising the share of software in the product, often in conjunction with the use of platforms
- Using of network effects (when certain types of platforms are involved)

Sensors, integrated software and communications technology etc. have been used in the goods-producing industry for many years now to make physical products increasingly smart. Products, machines and communication infrastructure are growing closer together to become the Internet of Things and Services and are enabling the development of (new) smart services based on the use of data. Whilst this is the case, new value creation is generated through new value propositions – which are realised by meeting specific needs based around the customer. This might, for example, be based on the use of data. In their existing form, the business models used for the retail market have proven unsuitable.

SMART PRODUCTS



SMART SERVICES



NEW EXPERIENCES



Source: Frank Riemensperger, accenture

Smart services, i.e. personalised services based on the use of data that provides a new service proposition, will stand out in future competition. This includes, for example, self-driving vehicles that do not have accidents, trains that are always on time, machine tools that alert the operator of ways that their work can be optimised, and smart dialysis machines that lengthen patients' lives and also improve quality of life.

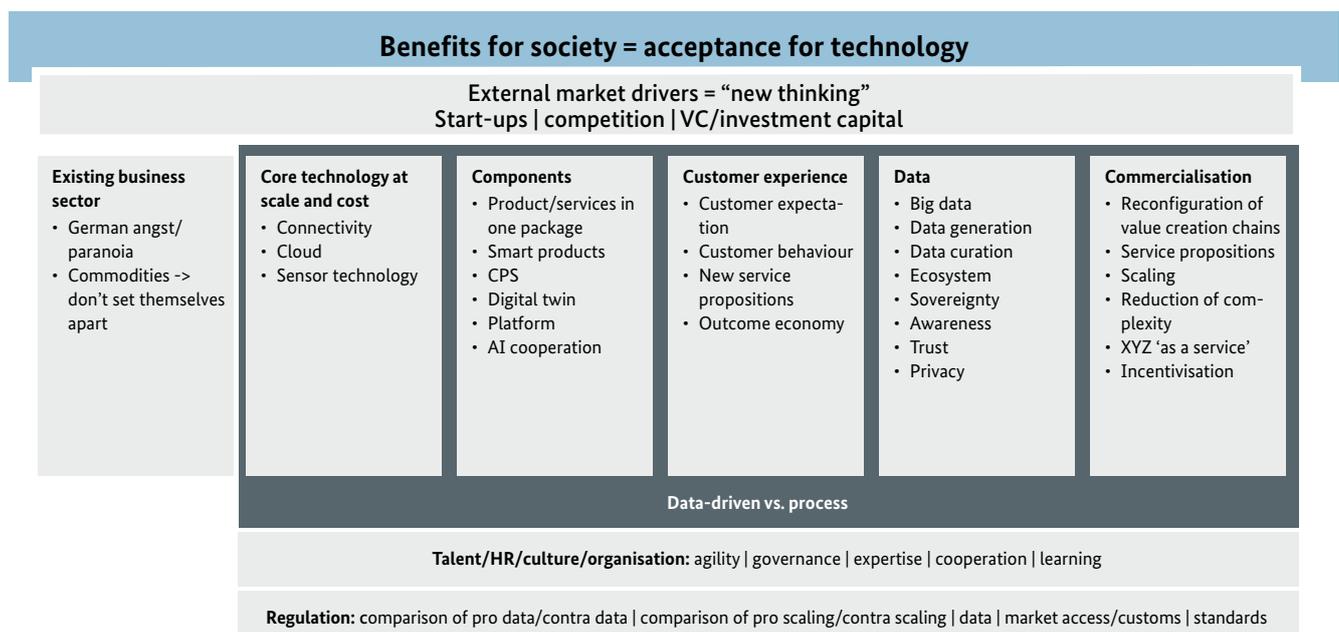
In order to be a leader in the global competition for data-driven BBC business models, operating data need to be made commercially usable to enable new service propositions to be created, as described above. What's key is that we extend our focus from just product and production to operations that incorporate data-based services. The for-

mula for this is: Smart Products + Smart Services + New Experiences.

The use of Artificial Intelligence (AI) in the processing of operating data generated by these smart products is about to take off and is ushering in a new phase of value creation. The ability to bring together expertise specific to a particular branch of industry with the use of data is what separates the winners from the losers in the race for market leadership.

In order to strengthen its lead position in Industrie 4.0, Germany needs a keen understanding of digital business models. This means it needs to identify drivers of innovation, to make these stronger, and to orchestrate them smartly. A basic overview developed by our experts is provided below.

Drivers of innovation for digital business models



Source: Plattform Industrie 4.0

## Drivers and enablers of digital business models

German industry is driven by both competition and innovation alike, as well as by permanent efforts to preserve existing business. The availability and affordability of key technologies are central in this.

Experts are agreed that we are on the cusp of a major economic transformation where customer expectations, value propositions, and an economy focused around the contribution a product or service makes to value creation are the drivers of a new order. The building blocks in this transformation are smart products, platforms and ecosystems, as well as digital twins – all based on improved (omni-)connectivity and technological progress around greater speed and miniaturisation. The quality of data (the “raw material”), the operating system, and the governance structure then make the key difference. And the right regulation is also crucial in order to provide the best possible operating environment.

## People as key drivers of innovation for digital business models in the goods-producing industry

This paper clearly shows that the ability to succeed in competition depends on how well the eco-system is orchestrated. Placing a focus on drivers of technology and competition is often not enough – the human factor – from the mechanical engineers to the administrative staff – is also decisive in this success.

## Literature

Jaekel, M. (2015): Die Anatomie digitaler Geschäftsmodelle, Springer, Heidelberg

Osterwalder A, Pigneur Y (2010): Business model generation, Wiley, New Jersey

