

***“Digitalization and IT Backsourcing: Towards a Transformational Model for the  
German Automobile Industry”***



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**Presenter:**

**Kerstin Felser**

## Resume of the presenter

- PhD candidate at University of Gloucestershire at Cheltenham and Gloucester
- More than 20 years of professional experience in the German aviation industry
- Study of business administration

## Research interests

- German automotive industry
  - Digital technologies
  - Digital innovations
  - Digital business models
  - Digitalization of products and services
  - Digital IT strategies
  - IT sourcing strategies
  - Digital transformation
  - Digital entrepreneurship

Scope	Turnover	Investments	Workforce
<ul style="list-style-type: none"> <li>• The German automotive industry consists of the original equipment manufacturer (OEM) and a three-tier supplier network               <ul style="list-style-type: none"> <li>○ Tier 1: Production of complete vehicle modules and systems</li> <li>○ Tier 2: Production of individual components</li> <li>○ Tier 3: Production of standard parts and raw materials</li> </ul> </li> <li>• A total of around 3000 suppliers, of which around 500 are German automotive suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• In 2019, the total turnover amounted to 436.2 billion €, of which the export earnings were 282.7 billion €</li> <li>• This industry accounts for around one fifth of the turnover of the German manufacturing industry</li> </ul>	<ul style="list-style-type: none"> <li>• Gross capital investment in plants and equipment of 17.7 billion €</li> <li>• Expenditure on research and development in 2018:               <ul style="list-style-type: none"> <li>○ Worldwide: 44.6 billion €, of which 27.1 billion € in Germany</li> <li>○ The German automotive industry accounts for more than a third of total global R&amp;D expenditure in the worldwide automotive sector.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Regular workforce of 832.841 employees</li> <li>• In total 2.2 million workplaces in Germany, including the aftermarket market and other services</li> </ul>

**With regard to its demands on research and technology, the German automotive industry is described as a leading industry that sets standards recognized internationally.**

**It thus plays a key role in shaping the competitiveness of the German economy**

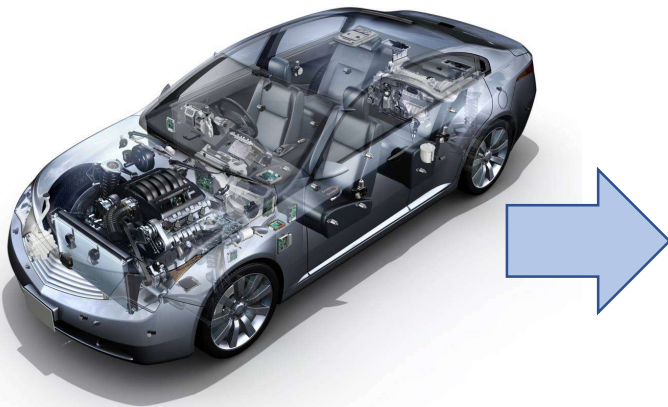
Strategy	IT Budget	Outsourcing	Outsourcing drivers
<ul style="list-style-type: none"> <li>• Low range of vertical integration</li> <li>• On average, between 70 and 80 percent of the IT budget is outsourced to external IT providers</li> </ul>	<ul style="list-style-type: none"> <li>• Each of the three major German car manufacturers has an overall IT budget of between 0.7 and 0.9 billion €</li> <li>• Internal IT employees:               <ul style="list-style-type: none"> <li>○ Volkswagen around 12.000</li> <li>○ Daimler around 11.000</li> <li>○ BMW around 5.500</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Three decades of experience in IT outsourcing</li> <li>• Multi-provider approach with a larger number of bigger suppliers, complemented by smaller but highly specialized suppliers</li> <li>• Forming a "best of breed" set of suppliers for various IT services</li> </ul>	<ul style="list-style-type: none"> <li>• Efficiency</li> <li>• Cost reduction</li> <li>• Quality</li> <li>• Access to new technologies</li> </ul>

So, why explore IT back sourcing?



## Previous automotive business model

Product-centric industry



Design, development, production and sales of high-tech physical products

## Transformation of the industry from the physical to the digital world



Digitalization in the automotive industry combines the three major breakthrough innovations of the 20th century: vehicles, computers and the Internet

## Future automotive business model

“Software-enabled Car Company“



“Mobility as a Service” (“MaaS”)

## Megatrends and changes

### C.A.S.E.

- Connectivity (connected cars)
- Autonomous driving
- Shared & Services
- Electro mobility

### Competition from world-leading internet players

### Climate protection / Energy consumption

### World-wide over-capacities

## Measures

### Digitalization

- Automation / Industry 4.0
- Smart factory
- Digital processes
- Car-Software / Automotive clouds
- Digital production platforms
- Artificial intelligence
- Ecosystems

### De-carbonization

- Reduction of CO2 Emissions
- Electric mobility
- Carbon-neutral plants

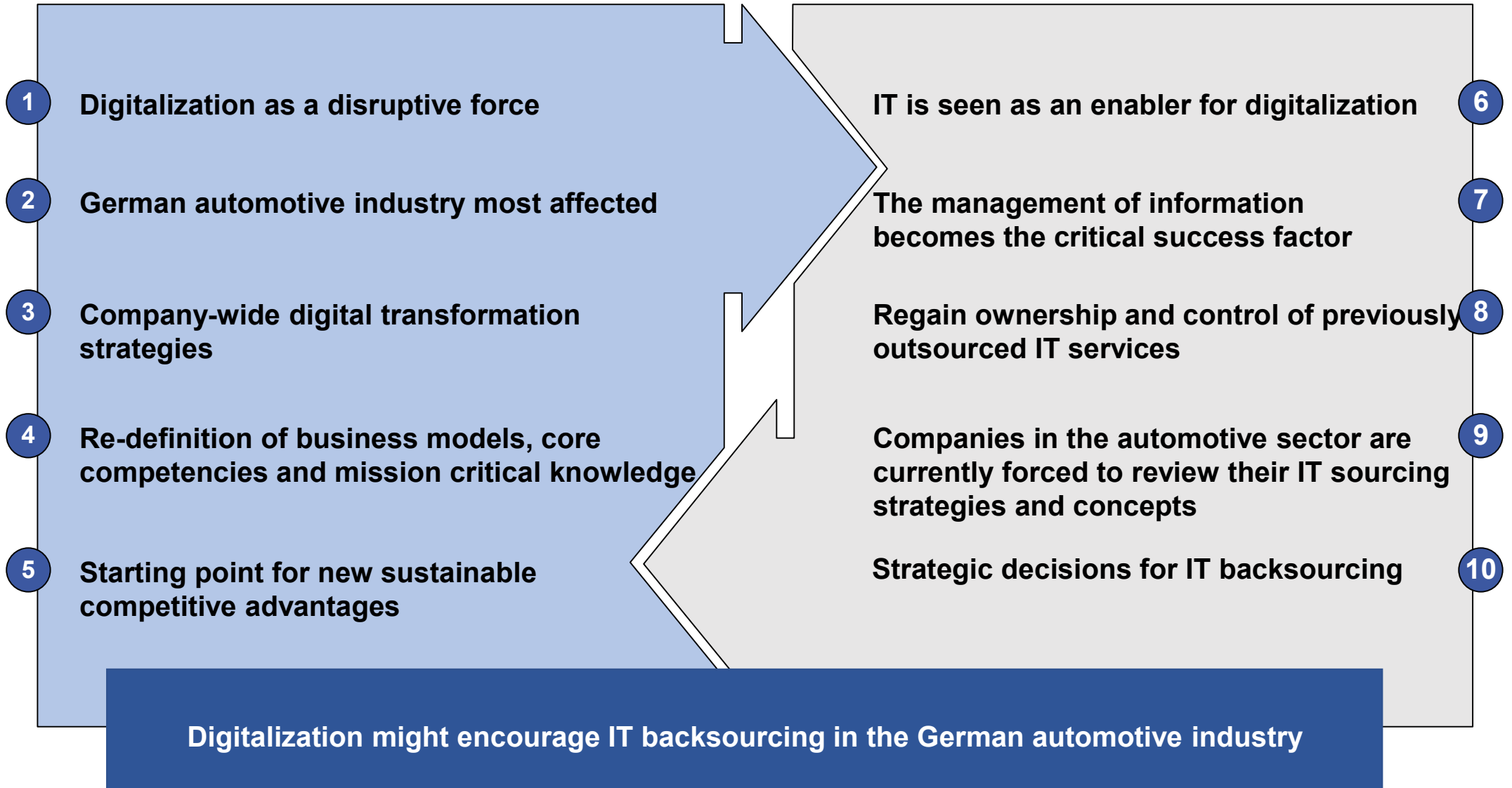
### Capacity adjustments

## Challenges

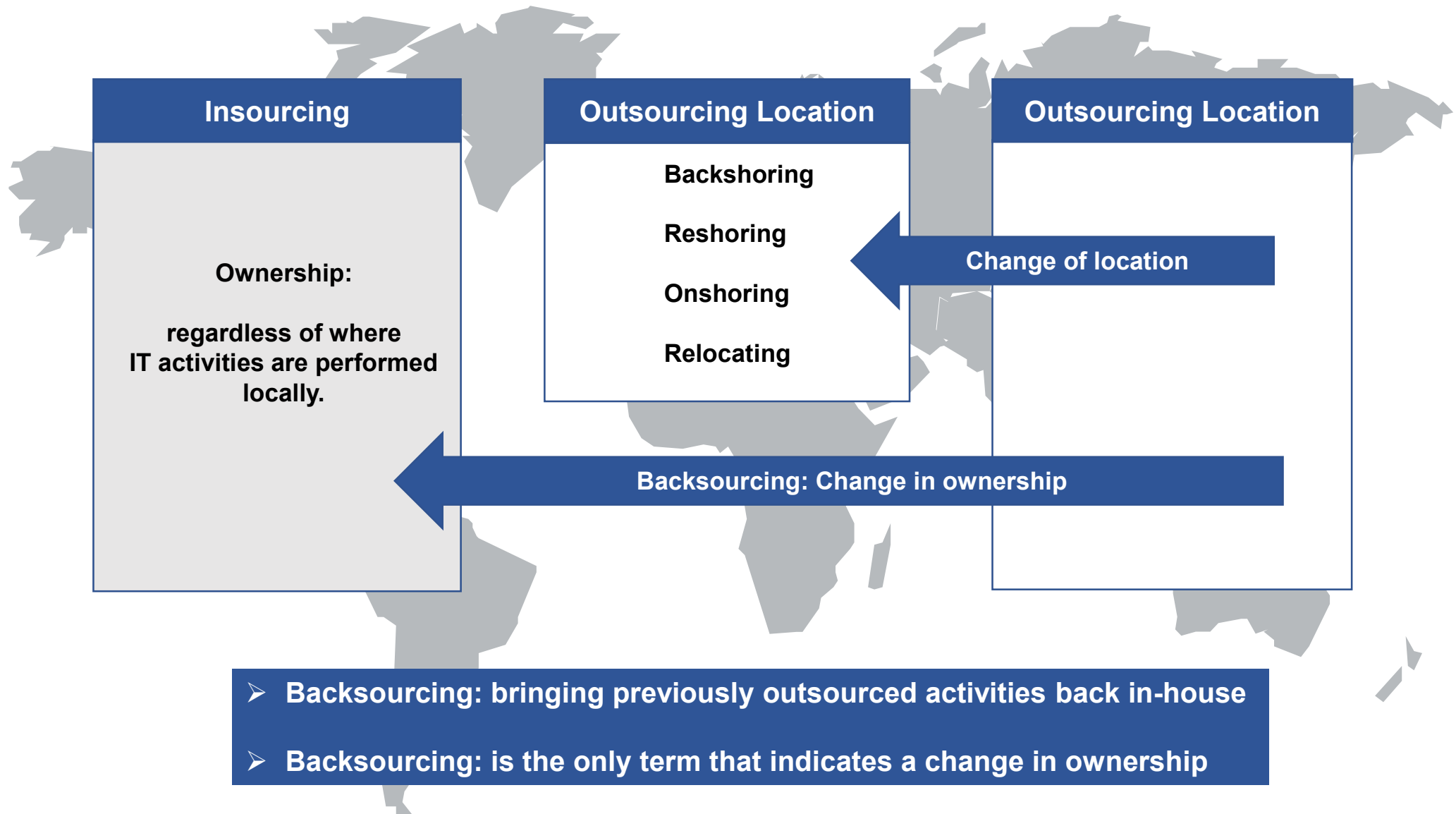
- Substantial investments
- Cost and cash preservation
- Continued sustainable competitive advantages

- Dynamic capabilities to react flexibly to the accelerating changes
- Unique digital knowledge and skilled resources to drive digital innovations
- Re-positioning of core competencies

- Digital transformation strategies
- Digital entrepreneurship







## Contract Problems: Outsourcing agreement did not meet expectations

- *Higher than expected costs*
- *Poor service quality*
- *Poor transition planning*
- *Loss of control over the core business*
- *Loss of flexibility*
- *No benefits from outsourcing*
- *Disagreement with vendor*
- *Loss of know-how*
- *Incompetence of the vendor (e.g. missing innovations on the vendor side hinders the client's business success)*

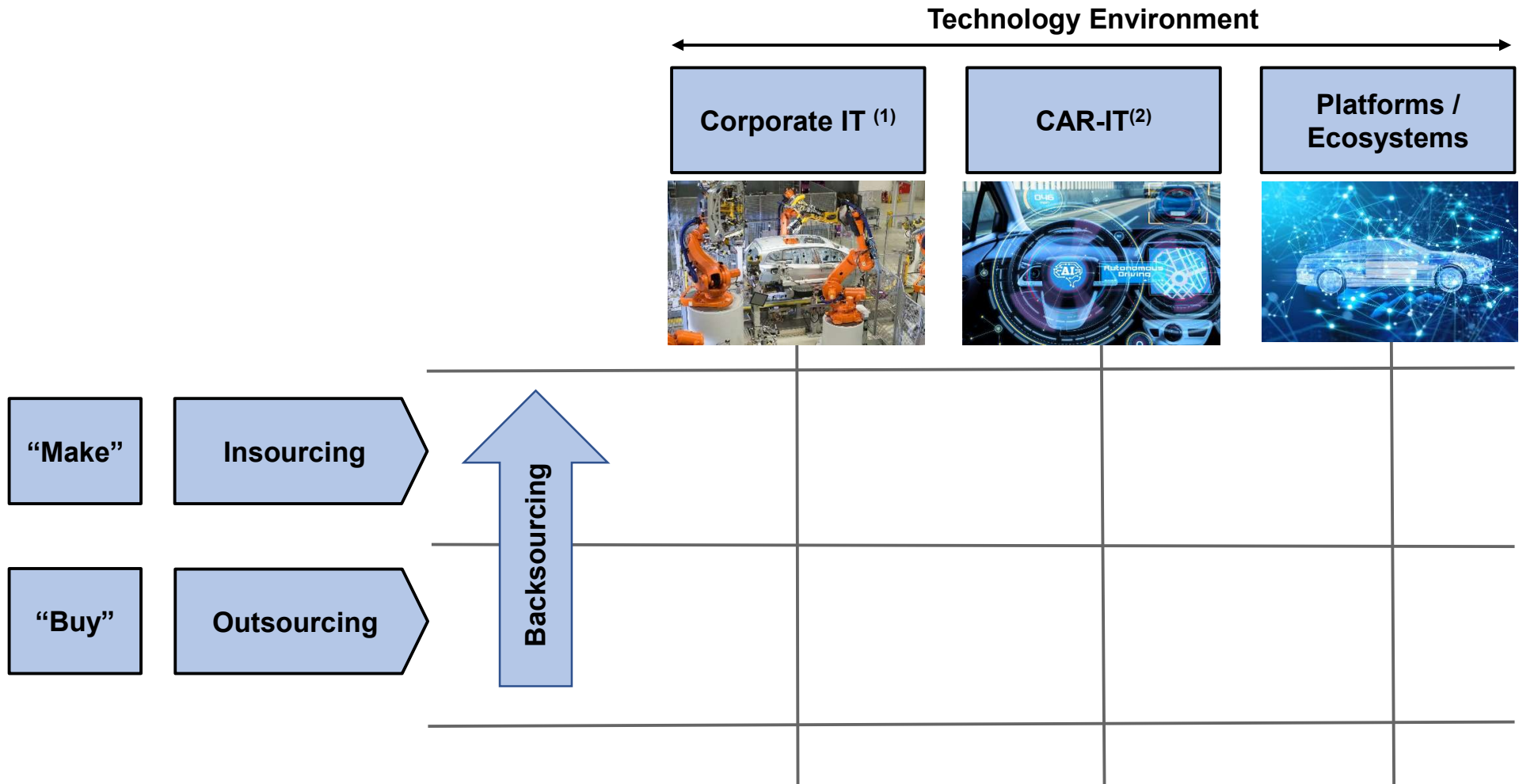
## Internal Organizational Changes

- *New or changed executive management*
- *Structural changes in the company (e.g. new business line, new corporate entity)*
- *New business strategies*
- *Recognition of IT as business enabler*
- *New / changed importance of outsourced activities*
- *Changes in IT strategy due to mergers and acquisitions*
- *Power and politics*

## External Organizational Changes

- *Changes in the environment of the company*
- *Economic cycles*
- *Bandwagon effect*
- *Changes in vendor organization*
- *Technology changes ("break-through" technologies)*

**However, little is known about the real extent of IT backsourcing**



(1) Also termed Company Business Information System, Backend-IT, Mainstream Business Systems

(2) Also termed In-Automotive IT, Connected Car, Onboard-IT

1

**Closes the gap of a currently missing evidenced view on whether digitalization is encouraging IT backourcing**

2

**Explains how companies in the German automotive industry justify decisions for IT backourcing within the digital transformation strategy**

3

**Provides insights into whether IT backourcing decisions have been made based on the need to develop dynamic capabilities and redefine core competencies**

5

**Provides information about the strategic position of the IT management in the companies and whether IT is seen as an enabler for the digital transformation.**

4

**Demonstrates the methods used by companies to establish a strategic link between digitalization and IT backourcing and to determine the resulting value.**

- 1 Digitalization is data-driven and based on an increased generation, processing and analysis of often new types of data
- 2 Data only gets a strategic value through comprehensive analysis and correlation
- 3 What matters is the management of information and the intelligent usage of this information
- 4 New core competencies and unique knowledge to manage the information becomes the critical success factor
- 5 In this context, IT backourcing could be a strategic decision to regain ownership and knowledge in order to be more flexible and respond faster to the necessary changes