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**The Right Digital Strategy for Your Business:  
An Empirical Analysis of the Design and Implementation  
of Digital Strategies in SMEs and LSEs**

Digitale Transformation, 82. Jahrestagung des VHB

# Agenda

- (1) Introduction**
  - (2) Theoretical Framework**
  - (3) Empirical Analysis**
  - (4) Results**
  - (5) Conclusion, Limitations and Future Research**
- References**

- Rapid **technological advancements** have fundamentally **transformed industries, creating opportunities and threats for new firms**, as well as **established firms** (Haffke/Kalgotas/Benlian 2016; Sebastian et al. 2017).
- Companies have to **transform their current business models** by integrating and using new technologies to ensure the **successful survival of companies in the digital future** (Bharadwaj et al. 2013; Hess et al. 2016; Vey et al. 2017; Becker et al. 2018).
- But: what matters is not **when**, but **how**, companies carry out their digital transformation (Hess et al. 2016).
- A **clear strategy** that takes into account **the use of digital technologies** is therefore **crucial for the future business success** of companies of **all sizes and industries** (Hess et al. 2016).

# Introduction

## Previous works on digital strategies

- Recent scientific research has shown that **digital strategies are a highly current research topic**, which is currently at an **early stage of investigation** (see e.g. Bharadwaj et al. 2013; Pagani 2013; Woodard et al. 2013; Matt et al. 2015; Hess et al. 2016; Mithas et al. 2016).
- **Different approaches** of the term “digital strategy” (Bharadwaj et al. 2013; Woodard et al. 2013; Hess et al. 2016; Mithas et al. 2016; Sebastian et al. 2017)
- **Development of a strategy** due to competition (Mithas et al. 2013)
- **Approaches to creating added value** due to a digital strategy (Pagani 2013)
- **Components** of digital strategies (Matt et al. 2015)
- All studies are based on a **qualitative research design** with companies of **different sizes** (see e.g. Hess et al. 2016; Woodard et al. 2013).

# Introduction

## Research gap: Digital strategies in SMEs and LSEs

- A large number of the traditional large-scale companies (LSEs) are **still at the beginning of their digital transformation** and most of them still generate their **sales from traditional, analogue products and services** (Sebastian et al. 2017)
- **Born digitals** have become **strong competitors for LSEs** by using modern technologies to attack the traditional, mostly analogue business model and the way in **which big old companies add value** (Sebastian et al. 2017).
- Small and medium-sized enterprises (SMEs) **differ significantly from LSEs** but **face the same challenges** (Pullen et al. 2009; Bidan et al. 2012).
- SMEs are also influenced by digitalization, since the way to **create and capture value has changed in the digital era** (Bharadwaj et al. 2013; Lucas et al. 2013; Klötzer and Pflaum 2017).
- SMEs have to **rethink their strategic direction** and, in particular, their digital strategy and adapt them to the **changed underlying situational conditions** (Bouwman et al. 2019).

# Introduction

## Research questions and structure of the paper

- Research questions:

*Do SMEs and LSEs have a digital strategy, and how is it structured?*

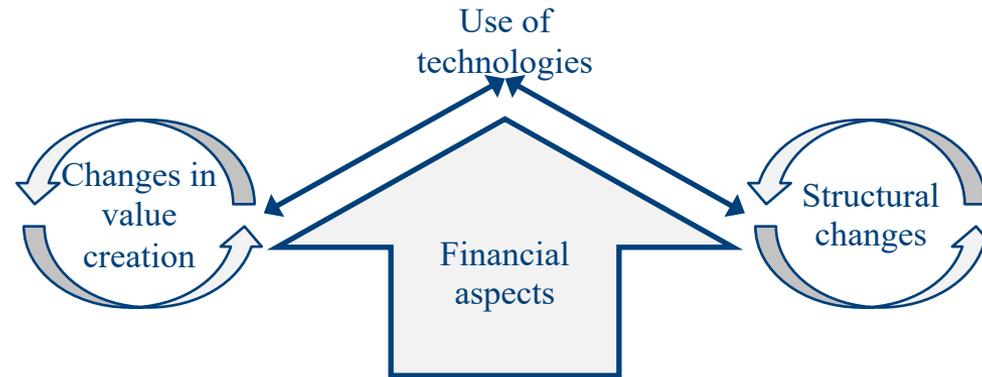
*Are there differences and/or similarities between digital strategies in SMEs and LSEs?*

- Structure of the paper:

1. Introduction
2. Theoretical framework
3. Methodology and data analysis
4. Results and cross-case analysis
5. Discussion and derivation of digital strategies for SMEs and LSEs
6. Conclusion, limitations and future research

# Theoretical framework

## Digital transformation framework (Matt et al. 2015)



- **Use of technologies:** SMEs and LSEs have to understand the role of new digital technologies (Horlacher and Hess 2016; Becker et al. 2018). These new digital technologies result in new opportunities, but also threats for all company sizes (Haffke et al. 2016; Leischnig et al. 2016).
- **Changes in value creation:** SMEs and LSEs must be clear about how they will create added value in the digital future. New players not only attack SMEs and their business models, but also compete directly with large, traditional companies and their performing business models (Bharadwaj et al. 2013; Sebastian et al. 2017)
- **Structural changes:** SMEs and LSEs need a suitable organizational and management structure in order to implement the digital transformation (Horlacher and Hess 2016; Köhler and Hess 2016). This means different mindsets (Fitzgerald et al. 2013) an agile organizational structure coupled with flexible and agile working methods (Nowotarskia and Paslawski 2015).
- **Financial aspects:** LSEs have significant advantages due to their company size and financial and market power. SMEs generally do not have “financial cushions” or “play money” for digital transformation (Pullen et al. 2009; Bidan et al. 2012).

# Methodology and data analysis

## Research design, interview guide and data analysis

- **Approach** according to **Eisenhardt (1989)** and **Yin (2014)**
- **Expert interviews:** between November 2017 and January 2018
- Interview guide:



- **Data analysis**
  - Two independent researchers using the computer program *MAXQDA Plus 12*
  - Triangulation: Interview data was supplemented by available secondary data
  - A cross-case analysis was carried out in which the interview data were examined several times with regard to certain patterns. The literature also recommends using tables at this point in order to have a simplified comparison between the cases (Miles and Huberman 1994; Yin 2014)

# Empirical Analysis

## Sampling

Case	Company				Study Participant
	Industry	Legal Form	Employees	Revenues (EUR Million)	Position
SME 1	Media	Ltd.	< 300	< 60	Managing Director
SME 2	IT	Ltd.	< 300	< 60	Managing Director
SME 3	IT	Ltd.	< 300	< 60	Managing Director
SME 4	Retail	Partnership	< 300	< 60	Managing Director
SME 5	Marketing	Partnership	< 300	< 60	Managing Director
SME 6	IT	Partnership	< 300	< 60	Managing Director
SME 7	Sport	Ltd.	< 300	< 60	Managing Director
SME 8	Personnel Service Industry	Ltd.	< 300	< 60	Employee in Digital Area
SME 9	Architecture	Ltd.	< 300	< 60	Managing Director
SME 10	Food Industry	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Head of IT Department
SME 11	Food Industry	Ltd. & Limited Partnership	$300 \leq x < 3,000$	$60 \leq x < 600$	Commercial Manager
SME 12	Food Industry	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Managing Partner
SME 13	Electronical Industry	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Commercial Manager
SME 14	Healthcare	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Division Manager
SME 15	Automotive and Software	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Founder
SME 16	Law Consulting	Partnership	$300 \leq x < 3,000$	Not Specified	Head of Digitalization
SME 17	Financial Service Provider	Stock Company	$300 \leq x < 3,000$	$\geq 600$	Financial Consultant
SME 18	Marketing	Ltd.	$300 \leq x < 3,000$	$60 \leq x < 600$	Managing Partner
SME 19	Media	Stock Company	$300 \leq x < 3,000$	$60 \leq x < 600$	Head of Digital Development and Transformation
LSE 1	Industrial and Engineering	Stock Company	$\geq 3,000$	$\geq 600$	Key Account Manager Software
LSE 2	IT	Registered Company	$\geq 3,000$	$\geq 600$	Head of Digitalization
LSE 3	IT	Stock Company	$\geq 3,000$	$\geq 600$	Head of Enterprise Sales
LSE 4	Industrial and Engineering	Ltd.	$\geq 3,000$	$\geq 600$	Head of Digital Transformation
LSE 5	Industrial and Engineering	Ltd.	$\geq 3,000$	$\geq 600$	Head of Lean Production
LSE 6	Healthcare	Partnership	$\geq 3,000$	Not Specified	Head of IT
LSE 7	Wholesale	Ltd. & Limited Partnership	$\geq 3,000$	$\geq 600$	Sales Director
LSE 8	IT-Consulting	Ltd.	$\geq 3,000$	$\geq 600$	Technical Account Manager
LSE 9	Chemical Industry	Limited Partnership	$\geq 3,000$	$\geq 600$	Head of Strategy
LSE 10	Research Industry	Registered Company	$\geq 3,000$	$\geq 600$	Managing Director

## 4

# Results

## Purpose of the digital strategy

	SMEs	LSEs
Internal and external processes	42%	60%
Entire company	42%	60%
IT system	11%	0%
Business program	5%	0%
Individual business areas	0%	10%
Projects	0%	10%
Total	100%	100%

- Both the **SMEs and LSEs wanted to adapt internal and external processes** by developing a digital strategy
- Internally processes: throughout the **whole company** (e.g. SME8)
- Externally processes: with the **whole environment** (e.g. LSE2)
- “**transforming the existing business model into the digital world, developing new business models** to drive the business forward into the future” (SME 19).

**Both SMEs and LSEs understood the fundamental idea of the digital transformation and the need for a suitable digital strategy** (in line with Hess et al. 2016; Becker et al. 2018)

The **basic purpose** is to use all the **advantages of digital transformation to survive in the digital age**. This can be accomplished in **particular by optimizing internal and external processes** and ultimately also by adapting the entire company **with its business model(s)**.

# Results

## Presence of a digital strategy

	SMEs	LSEs
No, and it is not planned	31.5%	0%
No, not yet formulated, but ideas available	31.5%	20%
Yes, an overarching strategy	21%	60%
Yes, several sub-strategies	16%	20%
Total	100%	100%

- SMEs, in particular, did not have digital strategies:  
“**we have ideas that we act on**, but simply did not need any formulation” (SME 5)  
“**many individual topics** that could be subsumed under a digital strategy” which had not been done for capacity and time reasons (SME11)
- In LSEs, on the other hand, it was imperative to have an “**all-encompassing [digital] strategy**” (LSE 1) which took into account the “**vision, mission and focus issues** of different business units and different markets in different forms” (LSE 7).

**Both company sizes have recognized the meaning of a digital strategy**, although **not all have formulated such a strategy**. In **SMEs**, in particular, a formulation has not yet been implemented due to a **lack of resources (capacities and times)**. In **LSEs**, on the other hand, the **strategy is very detailed** in that, in addition to the **strategic focus**, the **vision** and **mission** are also clearly defined.

Because of their size **all of the companies needed to strategically align their entire business to digital development to ensure a successful digital transformation.**

# Results

## Design – Use of technologies

	SMEs	LSEs
New software	47.5%	10%
Entire IT infrastructure	10.5%	40%
New/modern technologies for special business areas	10.5%	20%
Prototyping and benefits of prototypes	5%	10%
Data-based solutions	5%	0%
Cloud-based tools	5%	20%
No special technologies	16.5%	0%
Total	100%	100%

- The development of a digital strategy in the SMEs was primarily linked to **new software solutions “for automation”** (SME 2 and SME 3) and **“for new graphic visual solutions”** (SME 5)
- For the LSEs, on the other hand, digital strategies primarily involved aspects of **technological solutions that affect the entire IT infrastructure**

It can be stated that in **SMEs** the digital transformation could be **implemented by new software**, while the **LSEs** were focusing on the **“standardization and reduction of [corporate-wide] IT infrastructure”** (LSE 6)

**New software solutions are also particularly helpful for SMEs**, since these solutions can produce **selective improvements** and **often no company-wide and uniform IT infrastructure is required**. In **LSEs**, on the other hand, a **uniform solution for their IT infrastructure and data basis is crucial for strategic decisions and for their long-term orientation** (Becker et al. 2018).

# Results

## Design – Changes in value creation

	SMEs	LSEs
Added value through physical products	63%	30%
Added value through combination of products and services	21%	30%
Added value through services	16%	40%
Total	100%	100%

	SMEs	LSEs
No changes in the value added	31.5%	10%
New services	16%	0%
New combination of products and services	16%	40%
New and more data	10.5%	20%
New products	10.5%	10%
New technologies	10.5%	20%
Higher networking of production	5%	0%
Total	100%	100%

- The study of Hess et al. (2016) also shows that **companies can add value in different ways.**
- **SME:** the **future value creation** will also largely be in the area of **physical products**
- **LSEs:** In the future, the **type of added value will shift towards bundled product services, data and technologies**

**Digitalization has an impact on the change in the context of achieving added value** (Bharadwaj et al. 2013; Klötzer and Pflaum 2017; Sebastian et al. 2017).

The present study shows the **tendency to change the added value by both SMEs and LSEs** adapting their type of added value to the new situational conditions

# Results

## Design – Structural changes

	SMEs	LSEs
Flatter and more flexible hierarchies	37%	30%
No changes	37%	40%
Founding or enlargement of certain departments	16%	10%
Founding cross-divisional teams	10%	20%
Total	100%	100%

- In both **SMEs and LSEs**, the study showed that digitalization requires **flatter and more flexible structures**, since **digital transformation requires “faster action hierarchies”** (SME 16). At the same time, **“certain levels of hierarchy more or less fall away** because of **organization and communication across the enterprise”** (SME 3)
- Most of the **SMEs and LSEs were already well structured for digital changes**, and it is more crucial to **“put the right people in the right places to achieve a clean communication and a good interaction”** (SME 3) and a **“you culture”** (SME 17).

Against the background of the “Digital Transformation Framework” it is striking that **some companies see no need to change their organizational structure.**

The literature shows that most **SMEs, in particular, are already organized very flat, agile and flexible.** **LSEs**, on the other hand, **are sometimes still very hierarchically structured**, which means that a **change in the organizational structure is made very challenging** (Nowotarskia and Paslawskia 2015)

# Results

## Design – Financial aspects

	SMEs	LSEs
Generated sales through products and services	58.5%	50%
Internally determined budgets	21%	30%
Financing by shareholders or investors	10.5%	0%
Governmental funding	5%	10%
Internal financing, but with the help of external partners	0%	10%
Not specified	5%	0%
Total	100%	100%

- Both **SMEs and LSEs** were financing the required transformation of **digitalization through generated sales through products and services or through clearly defined budgets of the period**
- The companies were ensuring that digitalization as the “**internal investment theme**” (LSE 4) was using only “**the resources available (...) for change**” (SME 16), enabling companies to “**operate profitably and cost-effectively**” (SME 6).

The study shows that digitalization is financed by the cash flows generated from sales or by previously defined budgets. **Hardly any SME or LSE uses other alternatives**, which means that it can be concluded that digitalization can be viewed as an **internal, planned project**.

The study by Hess et al. (2016) came to the same conclusion that companies **use internal funds for the digitalization and digital to finance the digital transformation program**.

# Conclusion, Limitations and Future Research

## Conclusion and lessons learned

- ✓ **Purpose of the digital strategy:**
  - SMEs: Internal and external processes and whole company
  - LSEs: Internal and external processes
- ✓ **Use of technologies:**
  - SMEs: New software
  - LSEs: Optimization of the entire IT infrastructure
- ✓ **Nature of future value creation:**
  - SMEs: Added value through physical products
  - LSEs: New combinations of products and services
- ✓ **Nature of futural organizational structure:**
  - SMEs: Flatter and flexible hierarchies
  - LSEs: Flatter and flexible hierarchies
- ✓ **Financial aspects:**
  - SMEs: Generated sales and derived budgets
  - LSEs: Generated sales and derived budgets

**SMEs and LSEs do not always have digital strategies, but they need such a strategy for a holistic and successful digital transformation.**

# Conclusion

## Limitations and future research

- The present paper demonstrates that there are some **obvious differences regarding to implementation and design** of digital strategies in both SMEs and LSEs.
- There is still a “black box” around the topic “digital strategy”, but due to the results of the study, the present work represents a **further contribution** to the **digital strategy research**.
- **Further research is still required** because the findings of the present paper have to be validated by a **quantitative survey**.
- What's next?
  - **Who should develop and implement** the digital strategy?
  - What is the **relationship** between a **digital strategy and other strategies**?
  - How does the digital strategy **contribute** to the **company's performance**?

**Any Questions?**



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