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# Potentials, Challenges and Success Factors of Innovation Management in German SMEs in the Service and Production Sector

Marcus Triller, University of Rostock
Dennis Vogel, University of Rostock
Michael Fellmann, University of Rostock

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# Outline



- **Significance of the Object of Study**
- **Aims and Structure of the Study**
- **Methods**
- **Results**
  - **Status Quo** of Innovations in SMEs
  - **Success Factor** Findings
  - **Challenges** Findings
  - **Different Preconditions** for Innovation
  - **Supporting Innovation** Capability through IT
- **Conclusion**

- More than **22 million SMEs** provide about **83.9 million jobs in the EU**
- SMEs as „engine of the European economy“

- **However:**
  - Increasing knowledge intensification
  - Disruptive changes due to digitalization
  - Lower productivity growth
  - Increased competitive pressure due to globalization

**How can German SMEs hold their own in global competition?**

# Introduction

## Significance of the Object of Study

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"Driver of economic growth and the expansion of companies" [Gault / Maravelakis et al.]

"Realization of even a few unsuccessful innovations can threaten the existence of SMEs." [Ernst-Siebert / Spielkamp&Rammer]

"Companies do not give high priority to increasing their innovative capacity." [Kaschny et al.]

"Innovations are basically uncertain, risky and unpredictable." [Dold&Gentsch]

"Innovate or die" [Cooper&Edgett]

**Innovations are an opportunity and a necessity for SMEs**

**but at the same time a major challenge!**

**RQ1:** What is the development **status of innovation activities** in German SMEs?

**RQ2:** What are relevant **success factors and challenges** for the innovative capacity of SMEs and what potentials can be derived from this?

**RQ3:** What are the **differences** between service and production companies?

**RQ4:** How can **IT support** the success factors relevant to the innovative capacity of SMEs?

- SME definition according to the European Commission:

| Company category | Number of employees | Annual turnover (€) | Annual balance sheet total (€) |
|---|---|---|---|
| micro | until 9 | 2 mil. | 2 mil. |
| small | 10 - 49 | 10 mil. | 10 mil. |
| medium-sized | 50 - 249 | 50 mil. | 43 mil. |

- **In addition:** The share held by a large company may not reach 25 percent

# Methods



- **Quantitative survey** of companies from Rostock and Schwerin (n=30): status of innovation activities of SMEs
  - KOMPASS database
- Results were supplemented by 18 guided **expert interviews**
  - Analyzed according to Mayring
  - Guided semi-standardised questionnaire
  - Sample includes: Executives, innovation managers, employees in marketing, technical design and development
- Extended by a **systematic literature analysis** concentrated on in-house innovation activities

# Results

# Results

## Status Quo of Innovations in SME (RQ1)



- None company had an institutional innovation management
- Innovation process is **individually** linked to projects
- **Innovation tools:** Self-developed methods and tools, brainstorming, the Kanban method and monthly idea pitches are used
- **Evaluation criteria:** Feasibility, required know-how and economic efficiency

# Results

## Thematic Background (RQ2)

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| Category: | Success factor: |
|---|---|
| Leadership | • Management support for innovation<br>• Rewarding innovation activities<br>• Supervisors as teachers |
| Organization | • Flat hierarchy<br>• Decentralized structures<br>• Fast process flows |
| Corporate culture | • Open communication<br>• Innovation-friendly climate<br>• Sharing of knowledge |
| Innovation Team | • Involvement of all corporate divisions<br>• High willingness of employees to innovate<br>• Qualification of employees |
| Idea generation | • Exploitation of all sources<br>• Application of idea generation methods<br>• Coordination of idea generation / collection |
| Idea acceptance | • Clear evaluation criteria<br>• Prioritization and derivation of measures<br>• Preparation of financial scenarios |
| Idea realization | • Flexible project organization<br>• Appropriate resourcing<br>• Use of project management measures |

# Results

## Thematic Background (RQ2)

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| Category: | Challenges: |
|---|---|
| Resources | • Insufficient financial / material resources<br>• Insufficient human resources<br>• Insufficient technical resources |
| Strategy and methods | • Insufficient planning<br>• Insufficient methodological knowledge<br>• Insufficient early technology identification |
| Barriers | • Leadership that inhibits innovation<br>• Knowledge barriers<br>• Will barriers |

- **Areas of the companies**:

Plant engineering, architecture/construction, crafts, trade, real estate, IT, food, market research, medicine, recruitment, production, tax and legal advice, technology, sales and advertising

- **Field of activity of the interviewees:**

Management (16), innovation managers (2), Marketing (1), technical design and development (6), from other positions (5)

# Results

## Success Factor Findings (RQ2)

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- Open communication ($\bar{x}$ = 1.30), an innovation-friendly climate ($\bar{x}$ = 1.47) and management support for innovation ($\bar{x}$ = 1.53) were considered particularly significant

5-likert scale
complete disagree = 5
fully agree = 1

- When assigned into categories:

| Category: | SME (total) | | Service company | | Production company | |
|---|---|---|---|---|---|---|
| | $\bar{x}$ | R | $\bar{x}$ | R | $\bar{x}$ | R |
| Corporate culture | 1.56 | 1 | 1.53 | 1 | 1.68 | 1 |
| Leadership | 2.30 | 2 | 2.35 | 2 | 2.00 | 3 |
| Organization | 2.37 | 3 | 2.43 | 4 | 1.97 | 2 |
| Innovation Team | 2.39 | 4 | 2.38 | 3 | 2.50 | 4 |
| Idea realization | 2.47 | 5 | 2.46 | 5 | 3.00 | 7 |
| Idea generation | 2.63 | 6 | 2.64 | 6 | 2.55 | 6 |
| Idea acceptance | 2.83 | 7 | 2.87 | 7 | 2.53 | 5 |

# Results

## Challenges Findings (RQ2)

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- Insufficient human resources ($\bar{x}$ = 2.10) and insufficient planning ($\bar{x}$ = 2.90) represent significant challenges

- Resources was clearly rated as most relevant category:

| **Category:** | **SME (total)** | | **Service company** | | **Production company** | |
|---|---|---|---|---|---|---|
| | $\bar{x}$ | R | $\bar{x}$ | R | $\bar{x}$ | R |
| Resources | 2.75 | 1 | 2.77 | 1 | 2.67 | 1 |
| Strategy and methods | 3.24 | 2 | 3.27 | 3 | 3.00 | 2 |
| Barriers | 3.27 | 3 | 3.25 | 2 | 3.42 | 3 |

5-likert scale
complete disagree = 5
fully agree = 1

# Results

## Different Preconditions for Innovation (RQ3)

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| Service sector: | Production sector: |
|---|---|
| Open communication | Management support of innovation |
| Innovation-friendly climate | Open communication |
| Management support of innovation | Fast processes |
| Insufficient personnel resources | Insufficient technical resources |
| Inadequate planning | Insufficient financial / material resources |
| Personnel will barriers | Inadequate planning |

- Service innovation can differ significantly from product innovation:
  - Less formal and technologically organized
  - More incremental
  - Includes also environment

# Results

## Supporting Innovation Capability through IT (RQ4)



- Outstanding relevance of IT support for innovation management
- Innovation software supports the entire innovation process, as well as the controlling and documentation

| **IT deployment** | **Support from:** |
|---|---|
| Blogs | Open communication and an innovation-friendly climate |
| Information systems | Information sharing and changing power relations |
| Wikis | Documentation of knowledge, work processes, manuals and important issues |
| Databases | Medium- and long-term storage of ideas by means of a computer database |
| Campaigns, idea competitions | Possibilities for idea generation with high acceptance in the workforce |

# Results

## Supporting Innovation Capability through IT (RQ4)



- Mentioned IT support:
  - In-house tools and programs, newsletters, portals, blogs, magazines or journals
- Possible idea platform is considered positive
- Mentioned measures:
  - Online shop, bookkeeping and merchandise management systems
  - IT as “co-component” of the innovation process, focus on process optimization and automatization
  - Invoicing system to visualize costs and benefits

# Conclusion



- **Highly relevant:**
- **Service sector:** Open communication, an innovation-friendly climate and personnel resources
- **Production sector:** Management support for innovation, fast processes, technical and financial / material resources

- **Resources** and the **corporate culture** play a central role in both sectors

- IT and knowledge management are of essential importance for the innovative capacity

# Thank you for participating!

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