The future of leadership—How is leadership in small and medium-sized enterprises going to change?

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Abstract

This paper in the Journal Gruppe. Interaktion. Organisation. (GIO) addresses changes in leadership through digitalization and their consequences for leaders. For years, digitalization has been heralding changes such as increasing leadership at a distance or use of digital communication media. Small and medium-sized enterprises (SMEs) now face the task of coping with these changes and have to contend with major uncertainties: What are major determining trends for leaders in SMEs? Which changes will shape leadership and how will they change leadership tasks and success-critical behavior? In semi-structured interviews with seven experts from SMEs we have explored these questions. Trends expected by the experts describe changes in the organizational structures and in work within the company. Structurally, companies will become more agile and diverse, hierarchies will play a less strong role and companies will cooperate more closely with each other. Work will become more location-independent, more influenced by Big Data and many tasks will be made easier or taken over by technology. In relation to established models of leadership tasks and behavior, the experts see a clear shift in tasks in favor of managing human resources, including the development of employees through coaching and the transfer of responsibility. In addition to previous tasks, the experts see managing change as a new task area. This area consists of accompanying change, acting flexibly and agilely, communicating openly and transparently and allowing failure. With regard to changes in success-critical behavior, leaders have to show more strategy orientation, communicate clearly and be open to new ideas and further development.

Keywords Leadership · Digitalization · Tasks · Skills · Leadership behavior

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Zukunft der Führung – Wie wird sich Führung in kleinen und mittleren Unternehmen verändern?

Zusammenfassung

Dieser Beitrag der Zeitschrift Gruppe. Interaktion. Organisation. (GIO) beschäftigt sich mit Veränderungen für Führung durch Digitalisierung und den Folgen für Führungskräfte. Die Digitalisierung kündigt seit Jahren Veränderungen wie zunehmende Führung auf Distanz oder Nutzung digitaler Kommunikationsmittel an. Kleine und mittelständige Unternehmen (KMU) stehen jetzt vor der Aufgabe diese Veränderungen zu bewältigen und müssen dabei großen Unsicherheiten entgegenreten: Welches sind die großen bestimmenden Trends die Führung in KMUs verändern? Wie werden diese Trends Führung prägen und Aufgaben und erfolgskritisches Verhalten von Führungskräften verändern? In teil-strukturierten Interviews mit sieben Experten von KMUs sind wir diesen Fragen nachgegangen. Die Experten erwarteten Entwicklungstrends, die Veränderungen der Organisationsstrukturen und des Arbeitens im Unternehmen beschreiben. Strukturell werden Unternehmen agiler, diverser, Hierarchien werden eine weniger starke Rolle spielen und Unternehmen werden stärker untereinander kooperieren. Die Arbeit wird ortsunabhängiger, stärker von Big Data beeinflusst und viele Aufgaben werden durch Technologien erleichtert oder übernommen. Bezogen auf etablierte Modelle von Führungsaufgaben und -verhalten, sehen die Experten eine klare Verschiebung der Aufgaben zugunsten des Managens von Personalressourcen, darunter die Weiterentwicklung der Beschäftigten durch Coaching und das Übertragen von Verantwortung. Zusätzlich zu den bisherigen Aufgaben sehen die Experten Veränderungsmanagement als neuen Aufgabenbereich. Dieser setzt sich zusammen aus: Wandel begleiten, flexibel und agil handeln, offen und transparent kommunizieren und Scheitern erlauben. Bezogen auf Veränderungen bei erfolgskritischen Verhaltensweisen müssen Führungskräfte unter anderem mehr Strategieorientierung zeigen, klar kommunizieren und offen für Neues sowie Weiterentwicklung sein.

Schlüsselwörter Führung · Digitalisierung · Aufgaben · Kompetenzen · Führungsverhalten

1 Introduction

The use of intelligent and interconnected technology in the workplace and the changes through it are a major topic in the public and research discourse (Cascio and Montealegre 2016; Kauffeld and Maier 2020). Digitalization now starts to change small and medium-sized companies (SMEs) (Hobscheidt et al. 2017). Especially in SMEs, leaders in production and product development play a key role for the success of these changes, because they are the link between top management and employees in teams and departments and are responsible for ensuring that changes are communicated and implemented successfully. Effective leaders make a significant contribution to the success of technology induced changes in the workplace (Schlicher et al. 2017).

However, leaders themselves will face severe changes and need support during these changes in order to fulfil their responsibility. Leadership research does not yet reflect this importance of changing leadership tasks and success-critical leadership behaviors. Leadership research that investigated possible changes (e.g., Mumford et al. 2000) took place at the beginning of this century, where neither intelligence nor interconnectedness of technology played a role in organizations. Commonly used models of leadership tasks and behaviors have often not changed for decades (e.g., Fleishman et al. 1991). More recent research regarding digital skills and 21st century skills (van Laar et al. 2017), however, it does not focus on leadership tasks and requirements. In the present study, we made a first step

towards filling this research gap by investigating how digitalization is expected to change leadership in SMEs and how these developments might change leadership tasks and success-critical leadership behaviors in the future. Doing this, we contribute to further developing existing models regarding changes in leadership tasks and behavior by documenting upcoming changes, and provide valuable information for suitable and successful leader assessment and development in SMEs.

2 How will digitalization change leadership?

Digitalization, in the sense of the increasing implementation of intelligent and interconnected technology, does not only change production lines and work equipment. Digitalization also, and maybe even more importantly, changes organizational structure, tasks, and requirements of work (Kauffeld and Maier 2020; Mlekus and Maier 2019). Some examples for these technologies are intelligent robots that work hand in hand with employees (Ötting et al. 2020), or intelligent algorithms in software applications that make decisions about applicant selection or shift scheduling (Ötting and Maier 2018b; Schlicker et al. 2020). Even though research in IO-psychology already started to discuss how digitalization might change work design and leadership (Cascio and Montealegre 2016; Parker and Grote 2020), technology is either seen as a context factor that changes how team members work or as a tool for leaders to facilitate

communication (Potosky and Lomax 2014). The topic of how technology changes leadership tasks and success-critical leadership behaviors has not yet been included.

However, insights about these changes are highly important for SMEs, which typically have limited time for leadership development (Chadwick et al. 2013), but where leadership quality is vital given the need to operate under conditions of limited resources (Garavan et al. 2016). Leadership development in SMEs should therefore not only be aligned with SME strategy and operating context (Colbert 2004), but also with a strategy concerning possible changes through digitalization. In order to precisely aim leadership support and be able to proactively train leaders for upcoming changes, we need to know which major changes or trends, caused by digitalization, will concern leadership in SMEs the most.

Research question 1 Which major trends, resulting from digitalization, will most strongly shape future leadership in SMEs?

2.1 How might digitalization change leadership tasks and behavior?

Since the beginning of this century, behavioral leadership theories have increasingly drawn research attention (Dionne et al. 2014) and address both leadership tasks and leadership behaviors. In the following, in order to investigate changes concerning tasks and behavior, we introduce two widely used models: The taxonomy of leadership tasks (Fleishman et al. 1991) and the LEaD model for success-critical behaviors (Dörr et al. 2012, 2018).

2.1.1 Leadership tasks

Developed in an effort to unify a multitude of classification systems, the taxonomy of leadership tasks (Fleishman et al. 1991) describes four dimensions of leadership tasks. Information search and structuring summarizes tasks concerning acquisition (e.g., gathering data from multiple sources), organization and evaluation (e.g., considering usefulness based on relevance, accuracy or source), and feedback and control (e.g., following up on assignments). Information use in problem solving summarizes tasks concerning identification of needs and requirements (e.g., being alert to opportunities to improve), planning and coordination (e.g., scheduling of assignments), and communication of information (e.g., exchanging information via various means). Managing personnel resources summarizes tasks concerning recruiting and allocation (e.g., assigning personnel according to their qualifications), development (e.g., identifying qualification needs), motivation (e.g., providing a beneficial climate), and utilization and monitoring (e.g., dividing

workloads). Managing material resources summarizes tasks concerning acquisition and allocation (e.g., issuing supplies and equipment), maintenance (e.g., safeguarding funds or repairing equipment), and utilization and monitoring (e.g., preparing reports or prescribing how funds will be used).

Some of these tasks might be influenced by the increasing use of intelligent technology. Information search and structuring (especially acquisition and organization, but also evaluation) might become less common tasks or radically change in nature because of the increased use of Big Data (huge amounts of real time data that are gathered, structured and evaluated by algorithms; e.g., McAfee et al. 2012). Some tasks (e.g., feedback or communication) might change because of an increasing use of digital and virtual communication tools, such as social media, messengers, or video conferences (e.g., Delanoy and Kasztelnik 2020). Others might change because artificial intelligence (AI) is used to recommend or make decisions (e.g., concerning the management of material and personnel resources) (e.g., Liem et al. 2018; Ötting and Maier 2018a). Again other tasks might become increasingly important or frequent, because technology frees up time for employee development and motivation.

Research question 2 How will digitalization change tasks of future leadership in SMEs?

2.1.2 Success-critical leadership behaviors

In order to summarize the most relevant, robust and success-critical leadership behaviors, the LEaD model of leadership behavior was developed (Dörr et al. 2012, 2018). It depicts five categories of behaviors for leaders. *Strategy orientation* refers to detecting market potential, phrasing future prospects and propelling innovation and is mainly based on strategic leadership (e.g., Brews and Purohit 2007; Miller and Cardinal 1994). *Results orientation* refers to setting goals, analyzing problems, and evaluating results and is mainly based on task oriented leadership (e.g., Judge et al. 2004). *Employee development* refers to coaching employees, giving feedback, delegating responsibility, and taking others perspectives and is mainly based on employee orientation (e.g., Judge and Piccolo 2004; Kuoppala et al. 2008). *Interaction design* refers to communicating effectively, providing resources, managing conflicts, implementing changes, and shaping work relations and is mainly based on transformational and charismatic leadership (e.g., Felfe 2006). *Value orientation* refers to projecting confidence, radiating authenticity, and managing ambiguities and is mainly based on authentic leadership (e.g., Avolio and Gardner 2005).

Here as well, technologies such as Big Data and AI might make some behaviors less essential (e.g., evaluating results)

or change their meaning (e.g., effective communication) and make others even more essential (e.g., implementing changes or coaching employees). In addition to these possible changes in success-critical leadership behaviors, digitalization might even create new areas of importance. Some examples could be derived from 21st century skills, such as behavior concerning the use of information management or communication technologies or ethical and cultural awareness (Vaikutytė-Paškauskė et al. 2018; van Laar et al. 2017, 2018).

Research question 3 How will digitalization change the importance of leadership behaviors of future leadership in SMEs?

3 Method

3.1 Sample

In order to achieve sufficient saturation (Charmaz 2006; Mason 2010), we sampled and analyzed interviews (each around 90–120 min) until new concepts ceased to appear. The final sample consisted of $N=7$ male experts from regional SMEs; two managing directors, two founders, two heads of human resources, and one head of research and development. The SMEs were from the key production oriented industry branches in this region (such as plant construction and engineering ($n=3$), metal and electrical industry ($n=2$), or related service industries ($n=2$)) with an average of 167.5 employees ($SD=113.48$; $min=20$; $max=350$).

3.2 Procedure

We conducted semi structured interviews based on a prospective task analysis (Kato-Beiderwieden et al. 2020). This analysis is based on job analysis methods (e.g., Task Analysis Tool; Koch and Westhoff 2012) that investigates tasks and behavior and additionally allows for a prospective analysis of future jobs. Prior to collecting the data in February 2019, our study was authorized by the university's ethics committee (no. 2019-083).

In the first step, we conducted semi-structured interviews, comprised of questions about trends that will influence leadership in SMEs, about how leadership tasks will change as a result, and descriptions of behavior that is critical for leadership success in the future. Sample questions are “If you look ahead now, which development trends do you foresee concerning future leadership?”, “How will usual leadership tasks change in digitalized working environments?”, and “How will leadership requirements change through digitalization?” The second step involved the clustering of all trends, examples of changing tasks and qualifi-

cation, and examples of behavior from the interviews. Following recommendations for job analysis (Koch and Westhoff 2012), these clusters were formed through discussion between two raters (subject matter experts in job analysis) and, in case of tasks and behaviors, matched to dimensions from the above mentioned leadership theories (Dörr et al. 2012; Fleishman et al. 1991). In cases where we could not match clusters to existing dimensions, we created new dimensions (one for new tasks and one for success-critical leadership behavior). In summary, we assigned 71 statements of trends to eight trend dimensions, 86 statements of changing tasks to five task dimensions, and 110 statements of changing success-critical leadership behavior to seven behavior dimensions.

4 Results

4.1 Major leadership trends

With regard to the first research question, the experts see eight major trends that will change leadership in SMEs. These trends could be clustered into changes concerning organizational structures and changes concerning the design of work (see Table 1).

4.1.1 Changes concerning organizational structures

Structurally, companies will become more agile and diverse, hierarchies will play a less strong role and companies will cooperate more closely with each other. Agility is described

Table 1 Major trends for leadership in SMEs

Changes to organizational structure	Changes to work
<i>Agility</i>	<i>Location-independence</i>
Increasing flexibility	Leadership over distance
Faster product cycles and processes	Digital exchange between employees
Agile project teams	Use of web meetings
<i>Diversity</i>	<i>Big Data</i>
Diversity in age, gender, culture	Data collection, management and analysis
Interdisciplinary cooperation	Data protection and privacy
Heterogeneous teams	
<i>Decrease of hierarchy</i>	<i>Technology</i>
Line management decreases	Technology takes over leadership tasks
Project teams increase	Employees are replaced by robots
<i>Stronger cooperation</i>	<i>Self-responsibility</i>
Companies join together in associations	Responsibility of employees might increase or decrease
Cooperative production	

by the experts as the increasing flexibility, faster product cycles and processes, the use of agile project teams and the increasing work with customers via platforms. Diversity is described as being able to respond to the wide-ranging needs of employees by increasing the age range, interdisciplinary cooperation and internationalization. Leaders must be able to manage interdisciplinary and heterogeneous teams. By the decrease of hierarchies, the experts understand that the previous focus on line management, power and work hierarchies in a company is decreasing and the focus on project teams is increasing. A stronger cooperation of several companies means that companies join together in associations or groups to produce cooperatively and achieve an overall result.

4.1.2 Changes concerning the design of work

Work in SMEs will become even more location-independent, more influenced by Big Data, and many tasks are being made easier or taken over by technology. Location-independent work describes that employees and leaders will not have a workplace tied to a single location in the future. This includes leadership over distance (controlling work, steering and influencing work results, and motivation) and digital coordination of employees (digital exchange, transferring tasks via software, and web meetings). The experts describe the increasing influence of Big Data as the growth of data collection, data management, and data analysis as well as privacy. Technology taking over tasks, describes the introduction of robots and assistance systems as well as the digitalization and automation of processes (e.g. of business processes or order processing). New technologies will reduce leadership tasks and possibly the number of employees. In the future, robots will be increasingly used, so that there will also be more human-robot interaction and cooperation. Furthermore, some experts predict that personal responsibility of employees (including giving employees more responsibility and teaching them to solve problems themselves) will increase. Other experts found it more likely that personal responsibility of employees will decrease: New technologies such as digital assistance systems might dictate every work step and completely undermine the autonomy of the employees.

4.2 Leadership tasks

With regard to the second research question, the experts predict several changes in leadership tasks caused by digitalization (see Table 2). In the areas of *information use in problem solving* and *information search and structuring*, it is becoming increasingly important to know specialist areas and departments across the board, to recognize interlocking systems and to work in an interdisciplinary manner.

Table 2 Changes in leadership tasks

<i>Information use in problem solving</i>	<i>Information search and structuring</i>
Knowing experts inside and outside of the organization becomes more important	
Creating synergies through interdisciplinary cooperation	
<i>Managing personnel resources</i>	<i>Managing material resources</i>
More coaching	Less routine tasks
Transfer of responsibility to employees	Digital technologies support or replace tasks
<i>Managing Change</i>	
Accompanying change	
Acting flexibly and agilely	
Communicating openly and transparently	
Allowing failure	

Concerning *managing material resources*, routine administrative tasks become less frequent, as support is provided by digital technologies (systems that allow shift planning, or task distribution) or tasks are transferred to the area of responsibility of employees. Leaders will have a greater responsibility for results. The most frequently mentioned change is a clear shift in tasks in favor of the category *managing personnel resources*, in particular the further development of employees through coaching and the transfer of responsibilities.

In addition, the experts see *managing change* as a task area that reaches new importance for future leaders. This area consists of four tasks: Accompanying change, acting flexibly and agilely, communicating openly and transparently and allowing failure. Until now, this task areas had not been included in leadership task models.

4.3 Leadership behavior

With regard to the third research question, the experts also predict several changes in the importance of leadership be-

Table 3 Changes in success-critical leadership behavior

<i>Strategy orientation</i>	<i>Results orientation</i>
More digital strategies and cultural changes	Promote employee autonomy by creating an error culture
Focus on innovative teamwork methods	
<i>Employee development</i>	<i>Interaction design</i>
Leader as coach	Communication via digital media
Consider employees as individuals	Communication of change
<i>Value orientation</i>	<i>Change orientation</i>
Conveying self-confidence and transparency	Showing a willingness to learn
Dealing with value differences between generations	Stay up to date
	Have an overview of their specialization and technological possibilities

haviors caused by digitalization (see Table 3). Regarding *strategy orientation*, it will become more important to recognize the right time for early and more frequent decisions on the market, to visualize future perspectives for digital strategies and cultural changes, and to promote not only product innovations but also innovative teamwork methods. *Results orientation* and clear target agreements remain important. Leaders must grasp essentials more quickly and weigh up possible solutions. In addition, the experts consider it increasingly important to create a positive error culture in which employees have autonomy and errors are used for further development. With regard to *employee development*, the experts see an increased importance of the leader as coach, who promotes the advancement of employees and takes their perspective in order to treat employees individually, recognize strengths and weaknesses, and be understanding. The experts also see changes in terms of *interaction design*: Early, clear, and open communication, especially via digital media, as well as the handling of change will become more important. For the experts, the latter includes creating a positive basic attitude and enthusiasm for change, taking away reservations and fear of failure, being responsive, and having the courage to make decisions that are justified in a comprehensible manner. In the category of *value orientation*, the experts see increasing importance in conveying self-confidence, dealing openly with one's own mistakes and learning from them as well as conveying contradictions between generations.

The experts also see success-critical leadership behavior that gains new importance: change orientation. An openness for the new (e.g., technology, but also cultures) becomes important, including showing a willingness to learn, having an overview of specialization and technological possibilities, and staying up to date on a wide range of management methods, including the knowledge how to use them sensibly.

5 Discussion

In the present study, we investigated which changes, resulting from digitalization, will most strongly shape future leadership in SMEs as well as their consequences for leadership tasks and behavior. Concerning our first research question, the experts from SMEs expected changes regarding the organizational structures as well as the design of work. Structurally, SMEs will become more agile and diverse, hierarchies will play a minor role and cooperation between companies will become more common. Work in SMEs will be more location-independent and influenced by Big Data and many tasks will be made easier or taken over by technology. Concerning our second research question, the experts see a clear shift in importance of routine

and administrative tasks, such as information search and structuring and managing resources, will be reduced to the benefit of tasks concerning building connections and relationships, and developing employees. Managing human resources, including the further development of employees through coaching and the transfer of responsibility will become more important and managing change will emerge as a new task area. With regard to our third research question concerning changes in success-critical leadership behavior, leaders in SMEs will have to show more strategy orientation and focus on clear communication (via multiple channels) and an openness for the new will emerge as a new area of success-critical behavior.

5.1 Implications for research and practice

Leaders have a major impact on the success of technological change (Schlicher et al. 2017), especially in SMEs who generally struggle more with the adoption of technological changes than large organizations (Lee and Xia 2006). The results from the present study provide a detailed view on which major digitalization-induced changes will shape leadership in SMEs. In addition, our prospective analysis on how these changes might influence leadership tasks and behavior provides valuable insights for an alignment of prominent leadership models with these upcoming changes. With regard to the taxonomy of leadership tasks (Fleishman et al. 1991), we could show that the importance of certain tasks clearly shifts from a focus on administrative and routine tasks to development and networking tasks. This insight is in line with other research that showed an overhang of administrative opposed to supportive leadership tasks (Hinrichsen et al. 2021) and a growing importance of relationship-oriented leadership (Schwarz Müller et al. 2018). With regard to changes in the importance of success-critical behaviors (Dörr et al. 2012), this tendency is mirrored by more importance of strategic and communicative behaviors. Concerning both research questions, our results show that digitalization will make change-oriented tasks and behaviors more important that are not included in present models. These results show, that even though a growing body of literature investigates change leadership (Dumas and Beinecke 2018), models of leadership tasks and behavior still need to incorporate this focus.

In order to withstand in times of change and uncertainty, SMEs need a sustainable strategy to prepare their leaders. In order to best support established leaders during these changes and successfully select new leaders, a stronger focus on employee orientation (e.g., empathy), strategy orientation (e.g., decision making), and change management (e.g., openness to change) is needed.

5.2 Strengths and limitations

A major strength of this study is the prospective analysis of changes in leadership tasks and behavior in SMEs through digitalization. This approach combined the theoretical foundation of leadership models (Dörr et al. 2012; Fleishman et al. 1991) with the future orientation of prospective job analysis (Kato-Beiderwieden et al. 2020) to gain knowledge about upcoming changes. However, this study also has also limitations. One limitation lies in the sample. Because we strived for a strategic view on upcoming changes, our experts were managers. In addition, because we favored in-depth information, we only included a smaller sample of managers from selected industry branches. Therefore generalization to leadership on other organizational levels might be limited (Bush 2008; Nienaber 2010). Furthermore, in German SMEs, about 15% of managers are women (Schwartz 2019), however we failed to recruit one for our sample. Another limitation is that, in order to be able to ask about future tasks, and requirements, our interview questions were more abstract and not as near to actual behavior as with traditional job analyses. Future research should therefore add to our insights by investigating a wider range of male and female leaders on different levels in SMEs, by investigating actual job holder in order to gain competency models, and by comparing leadership in SMEs with a low or high degree of digitalization.

6 Conclusion

The increasing use of intelligent and interconnected technology in the workplace will cause severe changes to organizational structure as well as leadership tasks and requirements. These changes issue major challenges to SMEs not only concerning the selection of new leaders but first of all concerning established leaders. Knowledge about upcoming changes will promote the development of leadership research and subsequently help to equip SMEs with the skills needed to meet these challenges and support their leaders.

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