

ESTABLISHING A DIGITAL LEADERSHIP BAROMETER FOR SMALL AND MEDIUM ENTERPRISES (SME)

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Abstract:

In this paper we explain our project of establishing a barometer to capture the actual state of digital leadership in small and medium enterprises (SME) in Switzerland. Drawing on leadership and digitalization literature, we define an ontological frame of leadership that is adequate to consider the social characteristics of digitalization (e.g., enhanced team cooperation). Subsequently, four central categories that constitute digital leadership are derived theoretically: Collaborative, social and integer, inspiring and open, resilience fostering and digital meta-competences. Each of the categories consists of different sub-ordinated aspects that serve as bases for the formulation of the concrete items of the barometer's questionnaire.

Methodologically, the theoretically derived categories and aspects are subjected to a Delphi study, which can be described as a multi-staged questioning of experts. By integrating the view of experts, the aspects can be validated. This is necessary because digital leadership is quite a new phenomenon. At the current stage of the project, preparatory work for the Delphi study is underway. Two Delphi stages of asking around 60 experts to modify, complete and rate the proposed aspects are planned.

Based on the Delphi study, the next methodological step is to formulate the definitive items for the barometer's questionnaire. Its electronic distribution is done in cooperation with SME-associations in Switzerland. To enable longitudinal comparisons, annual executions of the barometer over five years are planned. Whether the theoretical and methodological approaches proposed are appropriate to establish the barometer for digital leadership will be discussed.

Keywords: digital leadership, digitalization, delphi study, questionnaire, barometer

1. INTRODUCTION

Digitalization as a phenomenon is similar to a tsunami: Sooner or later, it will hit/concern all or most spheres of our private and work life. In the literature it is emphasized that, besides the technical aspects, it is also important that social aspects and consequences of digitalization are studied (Berghaus, Back, & Kaltenrieder, 2016; Westerman, Tannou, Bonnet, Ferraris, & McAfee, 2012). Examples of examined technical aspects are the digitalization of the customer experience or internal processes of companies. Often surveys are established to assess the state of digitalization of companies along the mentioned or similar technical dimensions. Such surveys are often referred to as barometers to digital maturity (Berghaus u. a., 2016). But social phenomena, such as the appropriate understanding of leadership in a digitalized environment, have barely been studied so far.

We not only assume that these social aspects of digitalization are important to be examined, but also that, if social aspects are not considered, the positive potential of digitalization cannot be fully realized, for companies as well as society. In line with this, we suppose that the understanding of leadership as a social phenomenon has to be adapted to the digital age in which networks seem to gain the upper hand over the classical hierarchy. In the following we present our planned project, which has, in part,

already been put in place. Its aim is to establish and apply a barometer that will offer insights into where Small and Medium Enterprises (SME) in Switzerland stand concerning digital leadership.

2. THEORY: AN INTERACTIVE LEADERSHIP APPROACH FOR A DIGITALIZED ENVIRONMENT

In the following, we present the literature and theoretical elements relevant for our project to establish a digital leadership barometer.

2.1 Interactive leadership as ontological frame

The actual leadership literature no longer focuses on single “heroic” leading persons that are surrounded by their followers (Bennis, 2007; Yukl, 2012). Leadership is rather understood as a constant interaction between leaders, employees, other leading persons and stakeholders, such as clients or NGOs (Denis, Langley, & Sergi, 2012; Drath u. a., 2008; Rühli, Sachs, Schmitt, & Schneider, 2015; Sachs, 2016; Teece, 2016). Drath et al. (2008, S. 636) describe the new understanding of leadership as “increasingly peer-like and collaborative”. According to these authors, people who share work have certain leadership beliefs and leadership practices. Beliefs are the *disposition to behave*, whereas practices are the *beliefs put into action* (Drath u. a., 2008). The crucial point is that these beliefs and practices are not determined in isolation by the leading person alone, but that they are established, consciously or not, within the collective that shares work together (e.g., a team).

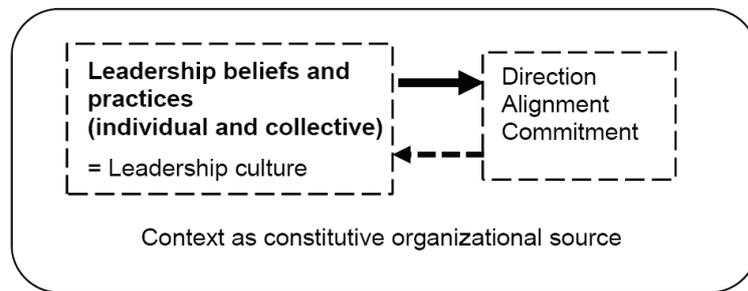
Individuals may hold *beliefs* that are also possibly held by other members of the collective. Over time, through interaction, the individuals learn about one another’s beliefs and influence each other: Individually held beliefs interact with collective beliefs. Some beliefs may become collective beliefs, because they are shared by all or most members. Furthermore, it is easily possible that beliefs of leading persons become shared more widely because they have more power. Some, but not all of the leadership beliefs are finally put into *practice*. The leadership practice as a whole can be understood as a collective’s pattern of behaviour. Following the same logic, the whole web of leadership beliefs and leadership practices lead, after a certain time, to a “stable system of belief-and-practice”, which is comprehensively called *leadership culture* (Drath u. a., 2008, S. 646).

The classical understanding sees leadership as a tripod consisting of a leader who influences its followers with the aim to achieve a common goal (Bennis, 2007, S. 3; Drath u. a., 2008). In the more interactive understanding of leadership on which this project is based, a collective that shares work produces together in ongoing interactions three outcomes based on collective beliefs and practices: *Direction*, which means widespread agreement on goals, aims and the mission within the collective; *alignment*, which means the organization and coordination of knowledge and work; and *commitment*, which includes the willingness of collective-members to subsume their own interests. According to Drath et al. (2008), the criteria for the existence of leadership are these three elements, not the mere presence of leaders and followers. Moreover, the three outcomes provide feedback (see the dotted arrow in picture 1) that may induce a change in leadership practices or beliefs (Drath u. a., 2008).

The *leadership context* can thus be understood as, e.g., organizational design, technology and historically situated moments. These aspects can be seen as constitutive sources of the beliefs and practices of people who share work (Drath u. a., 2008).

Because this interactive leadership approach contains – in contrast to the classical or “heroic” leadership literature – central assumptions necessary for leadership in a digital age, our project is ontologically anchored in this new understanding of leadership. The interactive leadership understanding allows the integration of such essential characteristics and effects of digitalization as network orientation, innovation capabilities or enhanced team cooperation. Such characteristics have been considered challenges for leadership in the age of digitalization by around 100 leaders from different industries who we interviewed in 2015 and 2016. Furthermore, and conceptually important, the interactive leadership approach is able to capture not only empirical leadership understandings that are indeed interactive, but also those that are more classical.

Picture 1: Visualization of interactive leadership and its elements



Source: authors' own picture, oriented at (Drath u. a., 2008)

2.2 Four central categories of digital leadership beliefs and practices

Although the understanding of an interactive leadership seems to be promising for use in a digitalized context, it has, until now, barely been applied in such a context. The characteristic of the understanding is, as mentioned, adequate to provide a general ontological frame for digital leadership. However, what it cannot do is provide concrete criteria with regard to the attribute “digital”. Contrastingly, more practice-oriented literature has linked leadership and digitalization which is why it is basically able to capture and characterize the change in the understanding of leadership induced by digitalization (Berghaus u. a., 2016; Ciesielski & Schutz, 2016; Saebi & Foss, 2015; Stehr, 2016; Welpe, Brosi, & Schwarzmüller, 2016).

In this paper, we focus on the element of *leadership culture* (i.e., beliefs and practices) of the ontological frame. To do so, we derived four central categories of digital leadership beliefs and practices from the practice-oriented literature: Collaborative, social and integer, inspiring and open, resilience fostering and digital meta-competences. The literature-based descriptions of the contents of the four categories were then condensed to aspects (or sub-categories); see table 1. In the following, the four categories are presented.

Collaborative

In an explorative examination on the consequences of the digitalization on job profiles in the office sector, we came, as in other literature, to the conclusion that corporate and industry boundaries are becoming increasingly blurred (Degryse, 2016; Sachs, Meier, & McSorley, 2016; Welpe u. a., 2016). This has to do with the growing network orientation in a digitalized world: Platforms for professionals like LinkedIn make individuals more independent from single organizations and more connected to their network on the platform. These network phenomenon leads in a further consequence to a decreasing meaning of hierarchies while participating opportunities for employees generally increase (Sachs u. a., 2016; Welpe u. a., 2016).

Moreover, with the general acceleration brought by digitalization, companies recruit employees increasingly on a project-basis and less on the basis of long-term contracts. Individuals often have to change the social constellation in which they are working (Degryse, 2016; Sachs u. a., 2016). Under such conditions, it is more common that leading persons will have the role of learning guides or coaches who provide concrete perspectives for problem solving (Ciesielski & Schutz, 2016).

Overall, under the mentioned circumstances an interactive understanding of leadership is essential. It is assumed that a leading person making decisions alone with only few collaborative and peer-like interactions with the working collective will not be adequate in a digitalized environment with its network character. But also interactive leadership itself can have different values. On the one hand, it is possible that a leading person can still make decisions, but by consciously involving the working collective in a consultative manner. On the other hand, decisions can indeed be shared, i.e., by a collective as a whole (e.g., Avolio, Sivasubramaniam, Murry, Jung, & Garger, 2003).

Integer and social

In a dynamic and fast changing environment, such as that induced by digitalization, social competences play a central role. Because the organizational form of projects increases in importance, working collectives more often work together in a timely limited context. Moreover, individuals may work on several projects simultaneously. In such a context, being socially competent is key. This is a condition to work together effectively and to be target-focused with so far unknown persons in unknown constellations (Sachs u. a., 2016). From a leadership perspective it is important to see the network

character of the project collective in which each individual has specific competences and contacts. An important characteristic a leading person and others need under such circumstances is trust: The members of the collective need space in which their ideas and thus contributions can develop. This space has to be provided (Ciesielski & Schutz, 2016; Welpé u. a., 2016). Moreover, for a single person it is simply impossible to have an overview of all processes in an increasingly complex environment. This makes more trust imperative (Schwarz Müller, Brosi, & Welpé, 2016; Welpé u. a., 2016). The role of leaders shifts not only towards that of a coach but also to someone who provides the necessary information and means that the members of the collective need for work (Schwarz Müller u. a., 2016; Welpé u. a., 2016).

Inspiring and open

In a digitalized world, intrinsic motivations have become increasingly important for the personnel. Fulfilment in the job is becoming a central aspect (Sachs u. a., 2016). Attractive visions have to be existent in a working collective. Thereby leading as well as other persons of the collective have to be inspired and to inspire each other, and even more so in a digitalized than in an analogue world (Ciesielski & Schutz, 2016). Digital leadership should enable or foster the members of the working collective to identify themselves with the company. A collective's members should also be convinced of the meaningfulness of their work and exemplify this during their daily work (Schwarz Müller u. a., 2016; Welpé u. a., 2016). Generally, leaders and working collectives in digitalized environments have to live in an open feedback-culture: Besides being transparent, they have to be open to critique and new ideas (Ciesielski & Schutz, 2016).

Fostering resilience

A high degree of self-competence is demanded from the members of a working collective in the digital age. They need to be aware of and have a high level of confidence in their knowledge and capabilities (Sachs u. a., 2016). At the same time, it is important to establish an error-culture ("Fehlerkultur"). To make errors is no longer seen as a "no go" that is to be avoided as much as possible. In an error-culture, errors are seen as a means to experiment with prototypes and to learn of possible faults (Ciesielski & Schutz, 2016; Fischer, 2016). Kelley (in Scharmer, 2009, S. 203) expresses it this way: "fail often to succeed sooner". In a digital environment, such a culture is not only meaningful on a technical but also on an a social level and thus important for social innovations that correspond with technological innovations (Ciesielski & Schutz, 2016). Only in this way is it possible to realize the potential of the digitalization. Such a culture has to be fostered in a working collective. Moreover, members of a working collective have to be agile and they have to learn continuously (life-long learning) (Welpé u. a., 2016).

Table 1: Theoretically derived categories and aspects

Category	Aspects	Items
Collaborative	<ul style="list-style-type: none"> • <i>Learning guides and coaches</i> as new role of leaders • <i>Interactive understanding of leadership</i>: Single-person vs. consulted or shared decisions 	See chapter 3.2: Not yet defined, will be defined during the Delphi study or after
Integer and social	<ul style="list-style-type: none"> • <i>Recognize network character</i>: which individual in the collective has which competences and contacts? • <i>Trust</i> is required to provide the needed space for individuals of the collective • <i>Provider of necessary information and means</i> as new role of leaders 	
Inspiring and open	<ul style="list-style-type: none"> • <i>Members of a working collective provide a vision and inspire</i> themselves and the individuals of the working collective • <i>Open feedback-culture</i>: Leaders and others have to be open to critique and new ideas 	
Fostering resilience	<ul style="list-style-type: none"> • <i>Members of a working collective have high confidence in their own capabilities</i> because of fast changing environment • <i>Error-culture</i>: Errors as a means to experiment with prototypes • <i>(Members of a working collective learn constantly)</i> 	

Source: authors' own table.

3. METHODOLOGICAL APPROACH

The aim of the project is to establish and apply a barometer to see where SMEs in Switzerland actually stand concerning digital leadership (see chapter 1). To establish the barometer, we have defined three project phases: Planning phase, Delphi phase and the barometer-implementation phase. The last two phases are methodological in nature. In this chapter all three project phases and the following project are explained.

3.1 Planning phase

In this phase, the literature concerning leadership and digitalization is reviewed. Thereby concepts and understandings of leadership and digitalization are considered and condensed. This literature is the deductive basis for establishing the basic categories and their sub-ordinated aspects needed for the establishment of the barometer (chapter 2.2).

Moreover, questionnaires to leadership are considered, which can support the formulation of items to the categories (e.g., Grille & Kauffeld, 2015; Kalshoven, Den Hartog, & De Hoogh, 2011). They, beginning with the items, may additionally contribute inductively to the establishment of aspects of categories. Because this is just at the beginning and the questionnaires are not definitively appointed to categories yet, this is not explored more deeply in this paper.

3.2 Delphi phase

On the basis of the theoretical categories and their aspects, a Delphi study is planned (Hug, Ochsner, & Daniel, 2013; Pawlowski & Okoli, 2004; Rakowska, 2016). Preparation for this is where the project currently stands.

The Delphi study or method can be described as a systematic multi-staged questioning of experts (Pawlowski & Okoli, 2004). The objective of doing a Delphi study as applied in this project is to validate the categories and aspects established based on the literature (Hug u. a., 2013). Because digital leadership is quite a new field, it is adequate to additionally integrate the view of experts into the future-oriented question of what the central aspects of digital leadership are. In this way, it is possible to formulate the items in the next phase in a more fitting manner for the barometer than would be the case by exclusively deriving them from theory. We define experts as persons that have a leading position in a Swiss SME and are involved in digitalization.

The Delphi study in this project consists of two stages and is oriented at Hug et al. (2013). In the first stage the experts receive the theory-based categories and aspects to *modify* and *complete* them. To do so, they are first asked to mark with a tick those aspects that they consider to fit with the corresponding category. If an aspect is ticked by less than half of the experts, it is dropped. Secondly, the experts are asked to modify non-ticked aspects according to their view. Finally, they can complete the list with additional aspects if they judge this as necessary. For the first stage it is actually not planned to provide the experts with the concrete items (i.e., the concrete questions asked in the later questionnaire, see table 1). The input of the experts is then taken to adapt the theoretical starting aspects.

In the second round the experts are asked to rate the single aspects (eventually already operationalised into concrete statements close to items) on an ordinal scale ranging from *not important* to *very important*. In this way it can be quantified if the aspects fit with the corresponding criteria. Depending on the average rating of an aspect, it will be kept or dropped.

To conduct the two Delphi-stages we plan to ask around 60 experts, and eventually more, depending on if we reach a certain saturation, i.e., increasing repetitions in the answers to the single aspects.

3.3 Barometer-implementation phase

On the basis of the analysis and adjustments of the aspects based on the two Delphi stages in the previous phase, the definitive items for the digital leadership barometer's questionnaire will be established and formulated in this phase. Again, already existing questionnaires of the leadership literature may support item formulation (see chapter 3.1).

The questionnaire will be subjected to a pretest for validation. After that, it will be sent to Swiss SMEs online by using unipark, an academic software tool for surveys. For adequate access to SMEs supporting a high response-rate, we are cooperating with different associations in the field.

The results then give insights into where the Swiss SMEs indeed stand in digital leadership. This is the aim of the project. After the analysis, the results and their interpretations will be provided to the participating SMEs and published in an appropriate form for the public. Moreover, academic publications are planned.

Additionally, it is planned that the barometer will be executed over five years, which enables longitudinal analysis. Hence, this enables insights into the development of digital leadership over time in SMEs in Switzerland.

3.4 Follow-up project: Action research in Swiss SMEs on digital leadership

After the planned execution of the digital leadership barometer, we envisage case-based action research with up to five Swiss SMEs to digital leadership. According to Sachs & Rühli (2011, S. 186), with this method, an attempt can be made to solve practical problems while at the same time gaining scientific knowledge in the examined field. The aim is to accompany the implementation and development of digital leadership in these participating SMEs as cases.

In this follow-up project, the barometer does not only serve to depict the state of digital leadership, but also as the starting point for the development of digital leadership in the participating SMEs. For the development process, the barometer will, furthermore, no longer consist of only the questionnaire with its closed questions but be of a more open nature that allows purposeful discussions that support the process.

4. DISCUSSION

In this paper the project plan was explained. Moreover, first steps like the literature review, deriving categories and aspects as well as preparations for the Delphi study have already been done. Results do not exist yet, because no data have been collected and analyzed so far. However, there are different points that should be discussed, especially at the intersection of the planning and the Delphi phase and beyond, e.g.:

- Is the theoretical derivation of categories comprehensible concerning content and process?
- Overall, is a Delphi study an adequate means to assist the validation of aspects to categories of digital leadership?
- Are the planned two stages in the Delphi study enough or is it necessary to conduct a third stage?
- Does it make sense to also consider, in addition to leadership and digitalization literature, existing questionnaires in the field of leadership to support the formulation of items and contribute inductively to the establishment of aspects?
- Does the ontological consideration fit for digitalization and a digital leadership?

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