The Role of Cultural Values for Digital Transformation: Insights from a Delphi Study

Full Paper

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Abstract

The rapid advancement of digital technologies has fundamentally changed the competitive dynamics of industries. To cope with an increasingly unstable environment and to fully leverage the opportunities opened by new technologies, organizations need to transform their businesses. Digital transformation initiatives are prevalent throughout industries, yet often experience failure due to inert organizational cultures preventing change. We adopt a value-centric approach to organizational culture to identify cultural values critical for digital transformation success. Our exploratory Delphi study with 25 research and industry experts resulted in twelve identified cultural values. The results point to an ideal combination of two culture types of the competing values framework, emphasizing values that foster innovation and concern for people. With the identification of an ideal target culture for cultural change initiatives, we extend the knowledge in IT-enabled business transformation literature and lay the foundation for future research on the role of culture in digital transformation.

Keywords
Organizational values, culture, digital transformation, Delphi study.

Introduction

Rapid advancement of digital technologies throughout almost all industries has fundamentally changed the environment of firms, the competitive dynamics within industries and customer demand (Downes and Nunes 2013; Lucas and Goh 2009; Porter and Heppelmann 2014; Westerman et al. 2011). The emergence of digital technologies threatens the existence of firms whose analogue value proposition can be digitally substituted (Lucas and Goh 2009). While new technologies put pressure for digitalization even on areas that have always been relying on the physicality of their value proposition (Rishi et al. 2008), digital technologies also present new opportunities for growth of businesses. However, integrating and exploiting the opportunities originating from digital technologies remains a major challenge for businesses, especially firms in industrial-age industries, and calls for more research (Yoo et al. 2010).

To fully leverage the benefits of new digital technologies, the implementation of IT needs to be accompanied by organizational transformation. Otherwise, the benefits from IT deployment remain marginal if only superimposed on existing organizational conditions (Venkatraman 1994). Digital transformation therefore exceeds the mere digitalization of products and services by the use of digital technologies (Hess et al. 2016). To enable business improvements, holistic changes are required. Firms need to transform and digitalize their entire business models and the accompanying existing organizational conditions, such as structures, processes and culture (Fitzgerald et al. 2014; Venkatraman 1994).

While culture is often perceived as a valuable strategic asset that has the potential to support business transformation and the exploitation of digital technologies (Downes and Nunes 2013; Westerman et al. 2011), organizational culture can also be the source of inertia that prevents change, as was prominently the case in the digitalization of Kodak (Lucas and Goh 2009). In research and practice alike, cultural change is perceived as essential for successful business transformation, especially for coping with disruptive transformations triggered by new technologies (Philip and McKeown 2004; Venkatraman...
Yet despite the perceived necessity for cultural change, most articles only briefly touch upon culture within their actual research topic. While single values and generalized cultural attributes were sporadically proposed to foster successful digital transformation, it has not been holistically analyzed which cultural values are actually crucial for digital transformation success. We intend to address this research gap and address the question:

*Which organizational values are crucial for a successful digital transformation of businesses?*

In addressing this question, we follow previous IS research and take a value-centric approach to culture. Values, the shared beliefs of organizational members on what is considered desirable, form the foundation of organizational culture (Deal 1991) and are highly suitable for studying culture in an IS context (Leidner and Kayworth 2006). In a normative approach, this research aims at identifying cultural values that support successful digital transformation and thereby define and propose an ideal organizational culture as target for cultural transformation initiatives. In order to identify organizational values, we conducted an exploratory Delphi study with digitalization experts from various industries in Germany. The study gathered the knowledge of 10 academics and 15 experts from practice in a three-phase process of brainstorming, selection and ranking. Our study results in an exploratory attempt to specify an organizational culture supportive of digital transformation. With the identification of target cultural values ideal for cultural change initiatives, we close a gap in research and lay the foundation for future research on the role of culture in digital transformation.

The remainder of this research paper is organized as follows: first, we provide an overview of the research background underlying our Delphi study and define the major concepts the study builds upon. Next, we describe the selected methodological approach, a Delphi study design, expert panel characteristics and the data collection process. Finally, we present and discuss the findings of our Delphi study, outline theoretical as well as practical implications, point out limitations and suggest areas for future research.

**Theoretical Background**

**The Concept of Culture in IS Research**

Although the concept of culture is familiar to IS literature, it is challenging to research given the multitude of divergent definitions, conceptualizations and measures used to study this concept (Straub et al. 2002). The concept of culture holds both implicit elements, such as beliefs or norms, and explicit elements, such as structures or practices. A cultural model established in literature and frequently referred to is the three-level model of culture by Schein (1990), that comprises both elements. According to Schein, basic assumptions are the essence of culture and represent the underlying belief system towards behavior, relations and reality. Basic assumptions are manifested in values that themselves become apparent in visible artifacts such as behavior, language or technology. In corporate settings, organizational values form the foundation of organizational culture (Deal 1991). It is therefore not surprising that the vast majority of theories and models of organizational culture in IS research focus on values as the core of organizational culture (Leidner and Kayworth 2006). We follow this research and take a value-centric approach to our definition of organizational culture. Organizational values can be defined as shared beliefs of organizational members about what is considered as desirable, i.e. ideals and norms that impact the members’ actions by setting expectations and boundaries for appropriate behavior (Schein 1990).

An extensive body of research has emerged in IS literature that sheds light on the links between culture and IT on a national level (Leidner and Kayworth 2006), e.g. all of Hofstede’s dimensions were found to have been included as independent variables in IS models (Ford et al. 2003). A second stream of IS research examines the role of organizational culture. Organizational culture was found to influence IS development, to be affected by IS implementation and moderate IS adoption and use (Leidner and Kayworth 2006). As an independent variable, people- and development-oriented organizational cultures have been found to be supportive of IS adoption and implementation success (Leidner and Kayworth 2006). The role of organizational culture as dependent, moderating or independent variable to IS artifacts was also confirmed in BPM (vom Brocke and Sinnl 2011) and IS strategy literature (Kummer and Schmiedel 2016). While the two streams on culture in IS have emerged as largely separate and experience little overlap, they share a value-centric approach towards defining culture (Leidner and Kayworth 2006).
Digital Transformation and Organizational Culture

Digital transformation distinguishes itself from previous IT-enabled business transformations in terms of velocity and its holistic nature (Bharadwaj et al. 2013; Porter and Heppelmann 2014). Digital technologies radically increase the speed of innovation, disruption and competitive dynamics of a firms’ environment (Downes and Nunes 2013; Porter and Heppelmann 2014; Westerman et al. 2011). To cope with the rapidly changing environmental conditions and the increased pace of these changes due to technology innovation, organizations need to fundamentally transform and restructure their organizations in order to survive in a disrupted environment (Downes and Nunes 2013; Porter and Heppelmann 2014). Digital transformation therefore exceeds the mere digitalization of products and services and companies need to redefine their industries and value propositions (Porter and Heppelmann 2014). Thus, we define digital transformation as the IT-enabled change in organizations through digitalization of products, services, core processes, customer touch points and business models (Fichman et al. 2014; Hess et al. 2016).

In order to accomplish such fundamental business transformations, organizations formulate digital transformation strategies, establish digitalization initiatives and implement IT in order to survive disruption and to seize emerging opportunities opened up by new technologies (Bharadwaj et al. 2013; Downes and Nunes 2013; Hess et al. 2016). Scholars from various disciplines and research fields agree that culture essentially impacts the success of business transformations, or as Philip and McKeown (2004) put it: “business transformation is about bringing radical changes in organizational culture in terms of structure, processes and above all, people’s attitudes, beliefs and behaviors” (p. 625). Following Venkatraman (1994)’s proposition, that organizational and cultural transformation is essential to fully exploit the benefits from new IT deployment, the establishment of a digital mindset and a change of culture is therefore considered essential for successful digital transformation (Fitzgerald et al. 2014).

Although prior literature acknowledges the role of culture in facilitating and managing organizational transformation (e.g. Pillay et al. 2012) and early academic contributions on IT-enabled business transformation already pointed out the necessity of cultural transformation (Venkatraman 1994), culture has surprisingly only played a minor role in digital transformation research. Taking a closer look at research on digital transformation, most articles only briefly touch upon culture within their actual research topic and lack a clear definition of and approach to culture. Single values and generalized cultural attributes were sporadically proposed to foster digital transformation success, such as innovativeness (e.g. Fichman et al. 2014), risk affinity (e.g. Fitzgerald et al. 2014), collaborative working environments (e.g. Westerman et al. 2011), trial or error mentality (e.g. Kane et al. 2016; Piccinini et al. 2015), or agility (e.g. Kane et al. 2016). But despite the importance of organizational culture for a successful digital transformation and call for cultural change, no empirical approach has been made to holistically analyze, which organizational values support digital transformation. We therefore take a normative approach and aim to specify an ideal target culture for successful digital transformation. Specifically, we will identify cultural values that are crucial for digital transformation success.

Methodological Approach: A Delphi Study Design

In order to answer the research question, which organizational values are crucial for a successful digital transformation of businesses, we conducted a Delphi study. The Delphi method relies on expert knowledge and aims to obtain consensus on a specific question via a structured process of iterative questionnaires with controlled feedback (Okoli and Pawlowski 2004; Paré et al. 2013; Schmidt 1997). The Delphi technique has a long history of application in IS research (Skinner et al. 2015) and has previously been applied in the field of digital transformation (Piccinini et al. 2015), as well as in studies on organizational culture (e.g. Schmiedel et al. 2013). While various Delphi design types exist, the ranking-type Delphi, which has the purpose of issue identification and prioritization, is most common in IS research (Okoli and Pawlowski 2004; Skinner et al. 2015). Compared to other research methods, the Delphi technique has the advantage of fostering an effective communication process through iterative rounds of feedback while avoiding the direct confrontation of experts that could potentially lead to biases (Okoli and Pawlowski 2004; Skinner et al. 2015). It is applicable for gaining insights from the collective experience of experts, especially for exploratory purposes when a lack of sufficient empirical literature exists (Paré et al. 2013; Singh et al. 2009). The Delphi technique is thus a suitable method for addressing our research question.
To meet both the call for higher methodological rigor in application of the Delphi technique in IS research and concerns regarding this method’s soundness (Paré et al. 2013), we followed the procedures and quality criteria proposed by Paré et al. (2013), Schmidt (1997) and Okoli and Pawlowski (2004).

Panel Selection

The selection of appropriate experts for the panel is a crucial aspect for any Delphi study’s results, considering that the Delphi method relies on the expertise of panel participants. Therefore, we took particular care in the selection of appropriate experts for our study. Following Delbecq et al. (1975)’s suggestion, we prepared, as a first step, a knowledge resource nomination worksheet, identifying classes of experts and participation expertise requirements for each class of experts. We identified two categories of experts with profound expertise with regard to our research question: researchers studying digital transformation and practitioners dealing with digital transformation on a day-to-day basis.

To ensure profound expertise among the panelists, we defined selection criteria for both academic and practitioners. Specifically, researchers were required to be currently active in research, to have published in the field of digital transformation, and to hold a degree at least at PhD level. For practitioners, we selected only those in a senior position in digitalization initiatives or consulting projects, and who had previously contributed to the discussion on the role of culture in digital transformation (e.g. via articles, posts and presentations).

As a second step, we populated our identified expert categories with names of potential candidates. To identify potential academics for our panel, we scanned institutes for information systems at German universities for research in the field of digital transformation and validated the expertise in the field of our research question via past publications in the last 5 years. We identified 19 potential academic participants for our study. To identify potential practitioners for our panel, we first scanned our personal network for potential candidates. The list was extended by contacting authors of whitepaper publications, articles, blogs, etc. on the role of culture in digital transformation. The company and Xing-profiles (business-related social network popular in Germany) of all potential practitioners were scanned to check, whether the above stated selection criteria for participation had been met. In this way, we identified 34 potential practitioners for the study.

The next step was to invite the identified experts to take part in the study. The targeted panel size was 20, a little over the commonly suggested size (Okoli and Pawlowski 2004; Skinner et al. 2015) to account for possible drop-outs during the study period. In total, 10 researchers and 15 practitioners committed to participate and completed the first round, which resulted in response rates of 53% and 44% respectively.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Panel profile</th>
<th>(N = 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panelist’s primary functional affiliation:</td>
<td>Research:</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Consulting:</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Transformation initiatives:</td>
<td>20%</td>
</tr>
<tr>
<td>Industries the panelists work in/ for:</td>
<td>Automotive:</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Banking &amp; finance:</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>Trade &amp; manufacturing:</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>FMCG:</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>IT &amp; communication:</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Media &amp; publishing:</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Public sector:</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 1. Profile of the Delphi Expert Panel

The panelists’ average age was 43 years, they had an average of 9.5 years of experience in digital transformation and held various senior job positions, i.e. positions with responsibility for digital transformation activities including positions such as CEO, CDO, executive transformation manager or partner at business consultancies. All academic panelists held chairs at German universities, except for one post-doctoral researcher and one member of faculty senate.
Data Collection and Analysis Methods

Our Delphi study was entirely designed and conducted over the Internet via a standard online survey platform. Conducting a Delphi study online held the benefits of shorter data collection periods, lower logistic efforts and superior usability compared to paper-based surveys or email communication (Singh et al. 2009). Over the study period from Jan-Feb 2017, we conducted a total of four rounds and experts were given one week’s time to respond to each round. In line with previous exploratory Delphi studies (Keil et al. 2013; Okoli and Pawlowski 2004), we adopted the Delphi method design of Schmidt (1997) and structured our study into three phases: brainstorming, selection and ranking phase.

The brainstorming phase serves to identify issues. In the first round, we provided participants with definitions of the central constructs as outlined in the theoretical section to ensure a common understanding. Subsequently, we proposed the following question: Which organizational values do you consider as crucial for a successful digital transformation of businesses? We asked the experts to name and briefly describe a minimum of five values. We followed the recommendation of Schmidt (1997) and did not limit the number of responses with the aim of maximizing the diversity of the initial set of values. In the first round, we generated a total of 143 values. In the next step, all 143 values were scanned for duplicates and items describing more than one value were separated. The remaining values were combined and grouped into meaningful categories, resulting in a consolidated list of 20 values. Each participant received an individual questionnaire, containing the initial responses and corresponding categorization and description. The experts were asked to validate the classification and description and if necessary provide suggestions for improvement or further clarification. This step was essential for validating our categorization, reducing noise, ensuring construct validity and for giving participants the opportunity to clarify their responses if necessary (Okoli and Pawlowski 2004; Paré et al. 2013; Singh et al. 2009). After revision and the implementation of suggested changes, a consolidated list of 20 values was obtained.

The selection phase aims to determine the most important values. We sent the consolidated, randomized list of values to the experts and asked them to select the 10 values they considered most important for a successful digital transformation (Schmidt 1997). Following Piccinini et al. (2015) and Singh et al. (2009), we targeted a range of 12-15 final items and thus set the cut-off to 45%. At the end of the selection phase, the experts condensed the initial list down to 12 values.

In the ranking phase, the shortened list of values retrieved in the previous phase was sent to the experts in randomized order. Following Piccinini et al. (2015) and Singh et al. (2009), we indicated for each value the percentage of panel experts who selected the respective value in the previous round to be among the top 10 choices to provide the experts with controlled feedback of the panel’s evaluation. The panelists were asked to rank the values in order of their importance for a successful digital transformation.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Brainstorming</th>
<th>Selection</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Theme</td>
<td>Collection of initial values</td>
<td>Validation of initial values</td>
<td>Selection of Top 10 values</td>
</tr>
<tr>
<td>Responses</td>
<td>25</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Response rate</td>
<td>100%</td>
<td>92%</td>
<td>95%</td>
</tr>
<tr>
<td>Number of values</td>
<td>143</td>
<td>20</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 2. Overview of the Data Collection Process

Kendall’s coefficient of concordance (W) was computed to obtain the degree of consensus among the experts, as common for Delphi studies in the IS discipline (Keil et al. 2013; Okoli and Pawlowski 2004; Singh et al. 2009). Kendall’s W is preferable to other methods, as it is simple to apply and provides a unique and easily understandable solution (Schmidt 1997). The values for Kendall’s W range from 0 to 1, with 1 indicating perfect consensus. Consensus is classified as strong or moderate for Kendall’s W values greater than 0.7 and 0.5 respectively, values smaller than 0.5 indicate weak consensus (Schmidt 1997). In the fourth round of our Delphi study, we reached a Kendall’s W of 0.3.
The ranking step of the Delphi method is recommended to be repeated until either sufficient consensus is indicated by Kendall’s W, or the level of consensus levels-off in two successive rounds (Schmidt 1997). However, Schmidt (1997) further highlights the importance of considering the trade-off between feasibility and the potential gain from conducting further rounds. Due to the decrease in experts’ motivation (indicated by the increased number of sent reminders and increased reluctance to answer additionally posed open questions), we refrained from further straining the participants with additional rounds. As the potential gain from another round was further judged to be low compared to risking either drop-outs or forcing artificial consensus, we decided to stop our study after one ranking round.

## Results

Throughout the brainstorming, selection and ranking phases of the Delphi study, cultural values crucial for digital transformation success were identified, consolidated and ranked according to their importance. Table 3 presents the results of the selection and ranking phase of our study.

<table>
<thead>
<tr>
<th>Organizational Value</th>
<th>Phase 2 – Selection</th>
<th>Phase 3 – Ranking</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Openness towards change:</strong> the organization’s openness towards new ideas and its readiness to accept, implement and promote change</td>
<td>95%</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td><strong>Customer centricity:</strong> the organization’s orientation of all activities to meet customer needs: products and processes are designed with focus on customer needs and continuously adapted to changes thereof</td>
<td>91%</td>
<td>2.90</td>
<td>1</td>
</tr>
<tr>
<td><strong>Innovation:</strong> the organization’s pursuit of improvement and growth through the development of innovations</td>
<td>77%</td>
<td>5.10</td>
<td>3</td>
</tr>
<tr>
<td><strong>Agility:</strong> the organization’s willingness to work, act and re-structure and be flexible and adaptable in order to react to change</td>
<td>73%</td>
<td>5.81</td>
<td>4</td>
</tr>
<tr>
<td><strong>Willingness to learn:</strong> the organization’s pursuit of continuous advancement through the acquisition of new skills and knowledge</td>
<td>86%</td>
<td>6.71</td>
<td>5</td>
</tr>
<tr>
<td><strong>Trust:</strong> refers to the mutual trust between the organization, its leadership and members, as well as the organization’s trust in its external partners</td>
<td>45%</td>
<td>6.95</td>
<td>6</td>
</tr>
<tr>
<td><strong>Entrepreneurship:</strong> the organization’s intention to promote the empowerment of its members to act proactively and independently, and take responsibility</td>
<td>50%</td>
<td>7.05</td>
<td>7</td>
</tr>
<tr>
<td><strong>Tolerance towards failure:</strong> the organization’s tolerant attitude towards reasonable mistakes and support of learning from failure</td>
<td>55%</td>
<td>7.43</td>
<td>8</td>
</tr>
<tr>
<td><strong>Communication:</strong> the organization’s intention to build internal and external networks for knowledge and information sharing</td>
<td>59%</td>
<td>7.62</td>
<td>9</td>
</tr>
<tr>
<td><strong>Risk affinity:</strong> the organization’s willingness to take risks and make decisions under uncertainty</td>
<td>45%</td>
<td>8.33</td>
<td>10</td>
</tr>
<tr>
<td><strong>Participation:</strong> the organization’s support of open, non-hierarchical discussion and democratization of decision processes</td>
<td>45%</td>
<td>8.57</td>
<td>11</td>
</tr>
<tr>
<td><strong>Cooperation:</strong> the organization’s positive stance towards teamwork, cross-functional collaboration, and readiness for cooperation with external partners (e.g. customers)</td>
<td>55%</td>
<td>8.62</td>
<td>12</td>
</tr>
</tbody>
</table>

Kendall’s W: 0.3

Table 3. Results of the Selection and Ranking Phase of Our Delphi Study
From this list of values, three cultural orientations emerge. The first group of values addresses an externally oriented culture and comprises the top ranked value of customer centricity and growth oriented values such as innovation on rank 3 and entrepreneurship. The second group of values addresses a cultural orientation towards flexibility and adaptability. Values such as the top ranked value of openness towards change and agility on rank 4 are emphasized. The third orientation is internally directed, focusing on the organization’s members and their interactions. It comprises the lower ranked values of willingness to learn, trust and communication. These three cultural orientations match the distinct dimensions of the competing values framework of organizational culture.

Since its introduction as a framework for understanding organizational effectiveness (Quinn and Rohrbaugh 1983), the competing values framework (CVF) has been enhanced and applied in multiple studies as a method of analyzing organizational culture (e.g. Cameron and Quinn 2005). Based on indicators identified to be supportive of organizational effectiveness, Quinn and Rohrbaugh (1983) determined two dimensions along which those values could be clustered. One dimension differentiates criteria which emphasize flexibility from criteria which emphasize stability and control. The other dimension differentiates between internal and external orientation. A matrix emerges from the combination of these two axes which distinguishes four types of ideal organizational culture that were labeled according to their most prominent characteristics: clan, adhocracy, market and hierarchy (Cameron and Quinn 2005).

Subsequent to ranking the values in round 4 of our Delphi study, the experts were asked to rate each value on 7-point scales along the two dimensions of the CVF, i.e. external-internal orientation and flexibility-stability. The organizational values were then positioned along the dimensions in the CVF according to the average values. As depicted in Figure 1, all organizational values of our Delphi study fall into the clan and adhocracy culture types. In the subsequent section we will discuss how these two culture types and their values can contribute to digital transformation success.

![Figure 1. Delphi Study Results in the Competing Values Framework (CVF)](image)

**Discussion**

The results of this study propose an organizational culture emphasizing flexibility in order to support digital transformation. The dominant importance of flexibility becomes evident in the overall distribution of organizational values in the upper half of the framework and the top ranking places of openness...
towards change and agility. Flexibility and agility were found to be key managerial challenges in digital transformation (Piccinini et al. 2015) and are considered essential virtues for an organization to successfully master digital transformation that requires the constant adaptation to an increasingly unstable environment. Transformation processes can be supported by the organization’s culture of agility that could facilitate restructuring or the adoption of new management concepts. However, business transformations can only be successfully implemented if change is accepted. An organization that values openness towards change fosters the willingness to accept, implement, promote and ultimately establish a change-oriented mindset, which is required to master digital transformation and considered a key skill for digital talents and leaders (Kane et al. 2016). Our expert panel identified organizational values of both flexible culture types of the competing values framework. The allocation of organizational values in the framework indicates that there is not one single culture type ideal for successful digital transformation, but that the targeted organizational culture should comprise both, clan and adhocracy cultural values.

The upper right quadrant of the CVF represents the adhocracy culture, referring to a dynamic organizational culture fostering innovation and pioneering. Organizations with an adhocracy culture continuously strive for improvement and growth through innovation (Cameron and Quinn 2005). Successful digital transformation requires the development of new products, processes which itself needs to be supported by an organizational culture emphasizing an innovative mindset and ambition for improvement (Fichman et al. 2014; Fitzgerald et al. 2014; Kane et al. 2016; Westerman et al. 2011). However, experimenting with new, rapidly developing technologies often requires risk taking and making decisions under uncertainty. An organizational culture that fosters risk taking and values entrepreneurship lays the basis for digital innovation and success. Digitalization further increases the complexity of organizational activities and projects increasingly expand the competence of single functions. In order to master this complexity, cooperation is key (Westerman et al. 2011). Technologies can enable new and faster ways of internal cooperation, but without a culture that supports cooperation, those technologies lose effectiveness. Most importantly, the customer-centric orientation of adhocracy cultures promotes constant growth and thus provides the organizational members with a sense of urgency for digitalization that is frequently lacking within organizations (Fitzgerald et al. 2014). Customer-centric organizations perceive digitalization as essential for being able to meet changing customer needs and therefore show a higher readiness to change which facilitates the digital transformation of organizations.

The upper left quadrant of the CVF represents the clan culture, named after its similarity to family-type organizations. The clan culture is characterized by an internal focus and concern for people (Cameron and Quinn 2005). Organizations undergoing digital transformation can benefit from holding a clan culture, because it promotes willingness to learn and emphasizes trust. Mutual trust between the organization and its members is key for an increasingly digitalized working environment. Working from home and flexible working hours are becoming standard, yet such flexibilities require the organization’s trust in its members’ commitment to the organization’s cause. Clan culture organizations further create an environment tolerant towards failure, which is an essential requirement for innovation (Kane et al. 2016; Piccinini et al. 2015). Combined with adhocratic values which encourage members to take risks, the created environment supports exploration, innovation and ultimately digital transformation success.

**Conclusion, Limitations and Future Research**

**Theoretical and Practical Implications:**

With this study, we answer the call for more normative work on culture in IS (Kummer and Schmiedel 2016). We contribute to research on digital transformation by identifying organizational values crucial to digital transformation success and therefore shed light on the question which culture is required to master digitalization. This research is an important first step for understanding the role of culture for successful digitalization. By identifying cultural values crucial to digital transformation success, we propose an ideal target culture for cultural change initiatives. With our research, we thus contribute to the literature by laying the foundation for future research on the role of culture in digital transformation. Based on our findings, future research is now able to take a prescriptive approach and study how, and with what measures organizational values can be changed in order to reach the ideal target culture supportive of a successful digital transformation.
The results of our research also have implications for practice. By identifying values that are crucial for digital transformation success, we provide practitioners with a target culture on which they are advised to base their cultural change initiatives. Moreover, we positioned the identified values in the competing values framework. Based on our findings, practitioners can use the organizational culture assessment instrument as a tool for managing culture in the course of digital transformation (Cameron and Quinn 2005). The tool is based on the competing values framework and allows practitioners to analyze their status-quo culture and to identify areas in need of cultural change in the course of digital transformation.

Limitations and Suggestions for Future Research:

Before suggesting directions for future research, we acknowledge the limitations of this research. First, we conducted our study with an expert panel from Germany, therefore our findings might not be transferable to other nations. However, as the German economy is characterized by previously analogue industries now under pressure for digital transformation, it provided an ideal context for our research. Further, organizational culture was found to be impacted by national culture (e.g. Hofstede and Peterson 2000). We thus expected varying results for international experts that would have further complicated to reach consensus. A second limitation of this study concerns the relatively small degree of reached consensus, as indicated by a Kendall’s W of 0.3. The low level of consensus may be ascribed to the subjectivity of digital transformation “success”, leading experts to divergent evaluations of the values’ importance. Third, although the sample of the Delphi methodology is not required to be statistically representative (Okoli and Pawlowski 2004), caution is advised in generalizing, as our results are based on only a limited number of experts (Keil et al. 2013). Despite this, it is important to note that our panel experts’ experience covers a broad range of industries and a multitude of digitalization initiatives. We can therefore be reasonably confident that the identified values represent a fairly general representation of an organizational culture supportive of digital transformation.

Despite the mentioned limitations, we believe this study to be an important first step in investigating the role of culture in digital transformation. We lay the groundwork for future research on this issue by identifying cultural values crucial to digital transformation success and proposing the combination of two organizational culture types of the competing values framework as ideal target cultures for cultural change. Now that an ideal culture for digital transformation success has been identified, future research is encouraged to take a prescriptive approach and to investigate how this target culture can be achieved. Specific areas of interest include, but are not limited to, the question of whether the implementation of IT is able to change culture to become supportive of digital transformation. We conducted our study with experts from various industries and thus received a fairly general representation of an ideal culture for digital transformation. Future research is encouraged to also take into account differences between industries to gain a deeper understanding of the role of organizational culture for digital transformation.

REFERENCES