Facilitation of Digital Culture and Creativity through an Ideation Strategy: A Case Study with an Incumbent Automotive Manufacturer

K. Ö. Kartal, L. Maul, M. Hägele

Abstract—With the development of new technologies come additional opportunities for the founding of companies and new markets to be created. The barriers to entry are lowered and technology makes old business models obsolete. Incumbent companies have to be adaptable to this quickly changing environment. They have to start the process of digital maturation and they have to be able to adapt quickly to new and drastic changes that might arise. One of the biggest barriers for organizations in order to do so is their culture. This paper shows the core elements of a corporate culture that supports the process of digital maturation in incumbent organizations. Furthermore, it is explored how ideation and innovation can be used in a strategy in order to facilitate these core elements of culture that promote digital maturity. Focus areas are identified for the design of ideation strategies, with the aim to make the facilitation and incitation process more effective, short to long term. Therefore, one in-depth case study is conducted with data collection from interviews, observation, document review and surveys. The findings indicate that digital maturity is connected to cultural shift and 11 relevant elements of digital culture are identified which have to be considered. Based on these 11 core elements, five focus areas that need to be regarded in the design of a strategy that uses ideation and innovation to facilitate the cultural shift are identified. These are: Focus topics, rewards and communication, structure and frequency, regions and new online formats.

Keywords—Digital transformation, innovation management, ideation strategy, creativity culture, change.

I. INTRODUCTION

DIGITAL transformation or rather the process of becoming a digitally mature organization has become an imperative for all kinds of businesses [1]. Companies have to address new challenges and new developments that will disrupt whole industries, in order to stay alive. They will be required to be agile and nimble, innovative and adaptable. The popular theory of Charles Darwin can be applied to organizations in the digital age, too. Stable and rigid organizations must evolve to organizations that are adaptable for change, no matter how strong and big they are [2].

Mobile devices, social media, analytics, cloud computing, digital security and many more emerging technologies are used by consumers and customers in their daily lives, leading to changing behavior and expectations on products and services [1], [3]. Customers are no more waiting for the launch of products that meet their needs, but are rather more proactive. They want companies to address their future needs, even before

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they are aware of them by themselves. Companies that are able to anticipate future needs are able to gain competitive advantage and create new customers [4], [5].

Technology will continue to advance and as technology is advancing, users will do as well. Societies will adapt to this development and change their needs and requirements; the environment and other factors will change accordingly. This change will not be one-time, but it will be a continuous process and it will be fast-paced [6]. Consequently, businesses that are not able to respond quickly enough to the change of the environment which they are operating in will not remain successful and profitable. New entrants will fill the arising gaps and push incumbent companies out of the business.

II. PROBLEM STATEMENT

Although many organizations recognize the urgency of adapting to changes in the business environment caused by new arising technologies, many of them have not understood key determinants for successful transformation in the digital age [7]. The facilitation of these key determinants, like digital culture, a coherent strategy, and especially inventiveness and creativity, is necessary for the survival in this change process [7], [8]. One of the biggest barriers and key determinants in the change process of digital maturation was identified as the facilitation of a digital organizational culture [1], [9]-[14]. The interconnected relationship between an organizational culture, supporting the digital maturing process, and creativity and innovation was identified by [8]. Workshops and platforms are used by incumbent organizations such as Daimler AG as tools and channels in the facilitation process. This study will focus on understanding the strategy behind the activities of the case site, regarding the facilitation of core elements of digital culture. Thereby the effects on the digital maturation process as well as upsides and downsides of the approach will be identified.

III. METHODOLOGY

"[A] research design should not only indicate what data are to be collected […]" [15], it should also include "(a) study's questions, (b) its propositions and (c) its units of analysis" [15]. This study aims to investigate the concept and design of a strategy, based on ideation workshops that target to facilitate core elements of digital culture. The result of the study will be the provision of more insights into an automotive industry

incumbent's strategy that aims to facilitate a digital culture as a fundament for its transformation efforts. The specific objectives will be:

1. Identify and investigate definitions of digital transformation and identify core elements of digital culture.
2. Explore the processes and elements used by the case site as part of the ideation strategy.
3. Explore and identify the best practices and problem areas of the ideation strategy and identify focus areas for the design of ideation strategies with the objective to facilitate the core elements of digital culture.

Therefore, this paper was designed as a single, embedded case study. An embedded case study consists of more than one sub unit of analysis and combines majorly qualitative and quantitative methods into a single study [16]. This helps to broaden the data collection to multiple sources and to increase the validity of the study through triangulation. Single case studies are used best in situations, where a more detailed and careful investigation is needed in order to e.g. explore new theoretical relationships [17]. The different sources can be interviews, document reviews, surveys and similar other data collection methods. This specific design is used because the goal is to describe features, environments and processes of a phenomenon and identify key components of environmental systems [18].

IV. LITERATURE REVIEW & FRAMEWORKS

Kane et al., 2016 found that digitally maturing companies are constantly and intentionally cultivating their cultures. These cultures share common characteristics. Innovation and ideation are incorporating and facilitating most of these characteristics [19]. "In digitally maturing organizations, nearly 90% of strategies focus on improving decisions and innovation" [20].

Kane et al. found that companies that are achieving higher levels of digital maturity are focusing their strategies on innovation and are "[…] twice as likely to be investing in innovation than early stage companies." It is added that "in this fast changing, complex world, if a company sees innovation as something incremental, it will be marginalized in the coming years" [21]. This statement emphasizes the strategic relevance of innovation for achieving digital maturity. Concluding from these findings, the first connection for the framework can be made: Digital maturing companies have common characteristics of their culture (core elements) that make them advanced in the maturation process [21]. Most of these characteristics are facilitated and embodied by innovation and ideation [19], [8]. Therefore a high majority of organizations focus their strategy on innovation and ideation in order to achieve the facilitation of a culture with the same characteristics (core elements) as that of a digitally maturing company [21], [19], [8].

However, [21] also propose a model that creates the connection between the strategy and the culture of a maturing organization into a more holistic framework. "To navigate the complexity of digital business, companies should embrace what we call digital congruence – culture, people, structure and tasks aligned with each other so that […] the challenges of a constantly changing digital landscape […]" can be addressed. This model of alignment of the four dimensions mentioned is considered for an overall conclusion of Digital Maturity frameworks, as it not only increases the effectivity of the whole framework if all dimensions are aligned to each other, but it also decreases if this is not the case.

With the three overarching frameworks for digital maturity, digital culture and strategy to achieve digital maturity, the loop closes. All of them are connected and influencing each other. They can be summarized in an overarching framework to provide a holistic overview, as shown in Fig. 1.
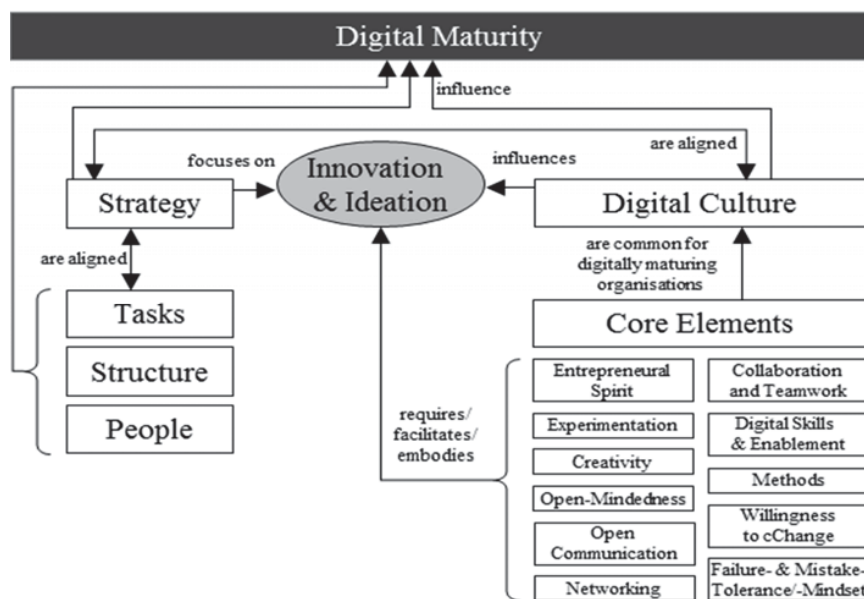

Fig. 1 Conclusion of Digital Maturity frameworks from literature

V. CASE SITE AND DESCRIPTION

A. Case Site

The case site for this study was selected as the DigitalLife@Daimler department, which is part of Daimler AG's strategy division. DigitalLife@Daimler deals with the company-wide digital transformation with a strong human-centricity and focus on culture and innovation [22]. Main activities in respect to culture and innovation are idea generation and implementation through offline events ("Open Space" events, "Innovation Camp" events and "Shark Tanks"), as well as through online challenges run on a community platform ("Crowd Ideation Platform") following human centered design principles as seen in [23]. The case is selected due to its high representativeness, enabling a profound analysis of the problem statement and the research question, as well as due to the willingness and availability to take part in the study.

B. Data Collection

This case study is based on three different collection methods and sources of data to ensure the collection of relevant and required data for the objectives and quality. The three methods/sources used are: semi-structured interviews (with a survey part), document reviews and observation, during the time at the case site. After the unit of analysis, the unit of observation is being considered. In order to prevent the researchers from making inferences based on the wrong unit (unit of analysis and observation), which is a frequent mistake [16], the unit of observation will be defined here. The units used for data collection in this study are individuals, documents and observations during the deployment period.

The selection of participants to be interviewees for the study was a non-random approach. Specific criteria were defined, which needed to be fulfilled, to qualify an employee as an interviewee. The purpose behind this sampling approach was to create a triangulated view on the same study topic and problem statement. Furthermore this approach enables the collection of broad and multifaceted data from a more representative holistic observation unit. Fig. 2 illustrates the triangulation design.

In total, 15 employees at Daimler were interviewed, each in a 45-minute meeting. In order to achieve the triangulation described, participants were divided into three groups. Two of these groups are constituting the base of the interviews. On one hand, the organizing team members who are part of DigitalLife@Daimler were interviewed. They are each responsible for one workshop/tool that is part of the ideation strategy: "Open Spaces", "Innovation Camps" and the "Ideation Platform", but all are knowledgeable over all considered tools. On the other hand, 10 participants who are employees of the organization and participated in one of the two events and used the idea platform were interviewed. Those two groups already create a detailed and multifaceted view on the ideation strategy and its parts. However, the third perspective is selected as the management. Two managers with decision authority and management experience were interviewed in order to create a holistic perspective. The strategic orientation of the managers is added to the operational and participative perspectives of the other groups creating an insightful view on the investigated case.

The participants group constitutes the largest group. To compare the workshops and the strategic context, four participants were chosen from the "Open Space" workshop and six from the "Innovation Camp". For the "Innovation Camps", the three most important regions outside Germany were chosen. The six "Innovation Camp" participants are divided into participants from USA, China and India. Germany is represented in the "Open Space" workshop. Next to the triangulation of the functions (participant, organizer and management), a differentiation between the workshops, as a tool of the overall ideation strategy, and a geographical differentiation were considered in order to create high representativeness of the data collection and observation unit (see Fig. 2).
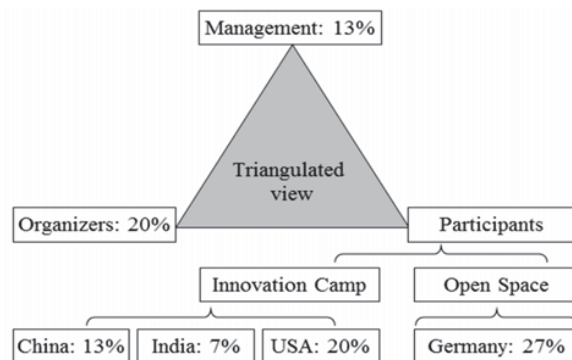

Fig. 2 Triangulation of three perspectives for the data collection

VI. CASE ANALYSIS & FINDINGS

This section aims to provide a short overview into the processes and the elements of the ideation strategy of the case site. First, the elements will be introduced and then their positioning and connection within the process of the ideation strategy will be shown (see Fig. 3).

A. Open Spaces (OS)

The Open Space is a tool and part of the ideation strategy of the case site team at DigitalLife@Daimler. It is employee centered, which means that only employees of the case company can participate. Within the employees of the case company there is no limitation; every employee can participate. The event is designed for 100 employees. The goals of this tool, as they are set by the organizers, i.e. the department, are primarily cultural change, networking, and idea generation. The workshop needs a top management sponsor who is interested in the implementation of the ideas and the collaboration culture. It is an ideation workshop with employees of different backgrounds. It has no agenda and is only about generating and discussing ideas regarding the given focus topic by the sponsor. The freedom given to the employees is high, which is reflected in the organization. There is no agenda, only idea generation with voting afterwards. The highest voted teams pitch in front of the top management and the participants. The winning ideas

are followed up together with the sponsor, e.g. participating in the Digital-Life-Day-Pitch. The ideas generated here are not well developed or refined, but rather a raw idea that needs to be further developed. It is aimed to be conducted on a yearly basis in Germany and 1-2 times abroad, resulting in a reach of about 300 people per year. The communication of the results and the event in the intranet are not calculated as direct reach.

B. Innovation Camps (Design-Thinking-Camps) (IC)

The Innovation Camp is the second workshop format that is used to facilitate core elements of digital culture. It is a 2-3 days design thinking event with the aim to train and enable employee's digital skills, push innovation, experimentation and an entrepreneurial spirit, and teach systematic ideation. The standard design thinking process that is implemented in this workshop enables the participants to actively research about the idea, ideate and raw prototype also in interaction with customers. Thereby, the focused topic provides the frame for the ideation. Design thinking is the method that is sought to be transferred to enable the participant to use it in the usual work place for internal innovation and implementation. It is conducted 3-4 times a year internationally with 4-5 teams of 4-6 employees. The ideas in this workshop are further developed and refined compared to the ones generated in the Open Space. Key elements of the workshop are design thinking, customer interviews, as well as raw prototyping and pitch trainings. The ideation skills are combined with a follow up of the ideas with top management sponsors like in the case of the Open Spaces.

C. Crowd Ideation Platform (CIP)

The Ideation Platform itself is not a workshop format but an online tool that supports the process between the offline activities. Furthermore, it is a platform for the conduction of online ideation challenges. These ideation challenges are different to the two focused offline workshops in terms of their much bigger reach. Every employee can bring their own ideas and everybody can participate. This should aim to facilitate an inclusion message towards the employees. Mainly it is used for idea generation, evaluation and funding/voting. Two processes exist: The usual process is that the platform, as an online tool, is used to create a page for the participants of an offline workshop, which was initiated by a top management sponsor. On that page, only those participants can vote, fund or evaluate the ideas and can inform themselves on the process. Interaction with other participants is possible through comment functions. The other process is the specific problem of a department. A department of the case company can set up their own problem statement and ideation challenge and can use the platform as a tool for the same three aspects: idea generation, evaluation and voting/funding. The case site then provides help to set up the page on the platform and support in the process. More than 105,000 employees are currently registered as users on the platform.

D. Shark Tank on Digital Life Day (DLD)

The Digital Life Day is not a tool, but rather an event where the successful ideas from the Crowd Ideation Platform, Open Spaces and the Innovation Camps are presented and pitched. It

is an event that bridges the gap between ideation and implementation. Some 1,000 internal guests participate each year. Many speakers and market booths for exhibition as well as 10 ideas from employees, selected during the process (from Open Spaces and Innovation Camps), are participating. Target groups are digital minded employees and top management. The aim is to provide communication material and inform the employees on the activities to create inspiration and awareness. The Digital Life Day is seen as a motivation factor for many employees participating in the workshops.
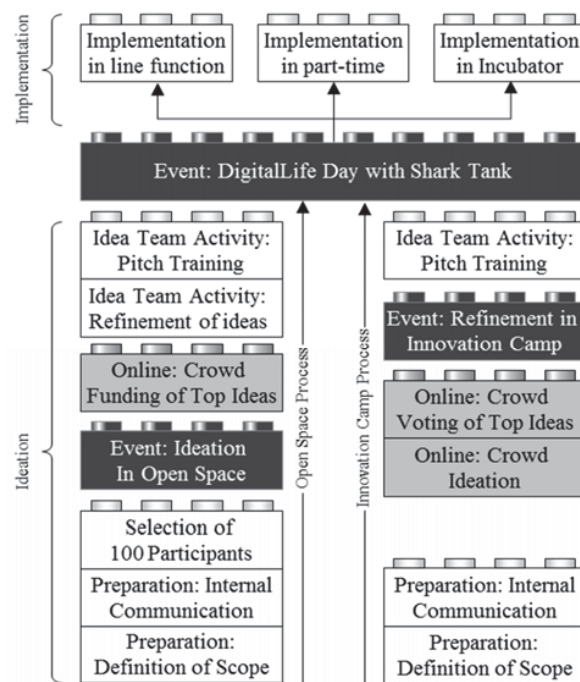

Fig. 3 Connection of formats within the ideation strategy

E. Comparison of Effectivity in Facilitating Digital Culture

The interviewees and participants of the workshops were asked to fill out a survey with the question to rate the effectiveness of the workshop towards the facilitation of each of the core elements on a scale from 1 to 4. Fifty out of 100 participants from the Open Space and six out of 25 participants from the Innovation Camps were invited to fill out the survey. The sample size is on purpose not calculated to ensure a confidence interval or an error margin. The participants filling out the survey were randomly chosen among the participants. However, the sample selected is not guaranteeing an unbiased outcome, since all participants that applied are already more prone regarding digital topics, cultural change, and regarding their willingness to change and their interest. The data suggests that both workshop formats have their own strengths and weaknesses, which is represented in the peaks as shown in Fig. 4. While Open Spaces seem to emphasize slightly more on experimentation, creativity, open mindedness, networking, enablement, change and teamwork, Innovation Camps are accounted slightly more for entrepreneurial spirit, methods, test-fail-learn-mindset and failure-mistake-tolerance. Since all

of the 11 average values for both formats are rated above average (2.5), one first conclusion can be that both formats are suitable to facilitate digital culture. The different values are worth a closer look in the following section.

During the interviews the management and organizer interviewees were asked what the intended focus areas for each of the workshops are. This information is combined with the document review and observation data and the following intended focus areas are carved out. After comparing them with the impression of the participants, regarding what was facilitated in their eyes, it can be seen that there is a significant difference (Table I).

The implications that can be drawn here are that both workshops are very similar in their effects and not strongly focusing on certain areas. They both cover the adjacent areas and are successfully facilitating all core elements. However, the missing sharpness results in the fact that neither workshop format is concentrating on a special focus area and effectively inciting intended elements over others. The workshop formats

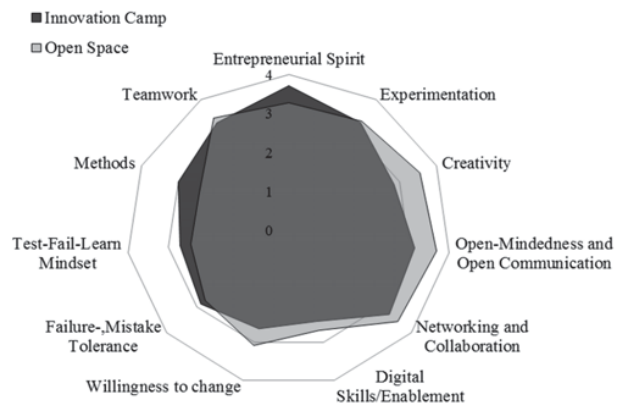have to be further sharpened and redesigned to achieve the full intended effects.

Fig. 4 Comparison of Workshop formats: strengths and weaknesses

TABLE I
COMPARISON OF THE FORMATS' INTENDED FOCUS AND ACTUAL IMPRESSION

Rank	Open Space: *Intended Focus*	Open Space: *Actual Impression*	Innovation Camp: *Intended Focus*	Innovation Camp: *Actual Impression*
#1	Experimentation	Digital Skills and Enablement	Digital Skills and Enablement	Failure-, Mistake-Tolerance
#2	Entrepreneurial Spirit	Open-Mindedness and Communication	Methods	Methods
#3	Creativity	Creativity	Creativity	Test-Fail-Learn Mindset
#4	Networking & Collaboration	Networking & Collaboration	Entrepreneurial Spirit	Entrepreneurial Spirit
#5		Willingness to change	Experimentation	

Covering all elements through different workshop formats will enable them to reinforce each other, because all elements are connected and often prerequisites to each other. The sharpening of the workshops can enable the case site to combine and arrange the workshop formats in a strategic way. It will allow users, which are the employees or sponsors and departments, to choose a workshop format based on where they want to have the focus. The facilitation will be stronger and more precise and the effects targeted according to the intended focus areas.

F. Design of the Ideation Strategy and Areas for Improvement

The following section will deal with five focus areas for the design of an ideation strategy in an incumbent company that were derived from the interviews from the strategic positioning that exists currently at the case site and findings from literature. The strategic focus areas/implications will be arranged as mid- to long-term implications, whereas smaller changes that were identified by the interviewees will be arranged as short-term implications due to the fact that their implementation will be faster in realization.

The five focus areas for the design of an ideation strategy that were carved out, were identified across the three perspectives, which are management, organizers and participants and their relevance was commonly highlighted. They are connected to

each other.

The strategic focus areas consist of strategic directives. They are prerequisites and facilitators of each other and will help to increase the effectivity of the workshops in inciting and facilitating the core elements of digital culture within the organization (See Fig. 5).

VII. CONCLUDING DISCUSSION

Digital maturity is a phenomenon that causes challenges for many incumbent companies across all industries and gains more and more relevance. Many companies fail to address these challenges. The aim of this paper is to carve out what digital transformation and digital maturity are and how the various definitions in the literature overlap and differ. Furthermore, the barriers to digital transformation that are often identified as the reason for organizations to fail in the transformation process are determined. Culture is identified as one of the major and most underestimated barriers for incumbent companies and a set of core elements to support the digital maturation process is identified. The exploration of a strategy, including processes and its elements, is done with the help of the case site at the digital transformation department of an incumbent automotive manufacturer. This case presents an example of how industry is approaching the topic of cultural shift in practice. Connected to that, the focus areas for the design of an ideation strategy that aims to facilitate core elements of a culture to support digital

maturation are explored and positioned in the framework.

The paper analyzes the connection between digital maturity and cultural shift. Furthermore, it identifies the relevant elements of culture that have to be considered and based on that, it proposes focus areas that need to be regarded in the design of a strategy that uses ideation and innovation to facilitate the cultural shift. With that, this study fills an existing literature and research gap. The literature available today covers major topics like organizational culture, digital transformation, innovation and change strategies, but it presents a gap when it comes to the topic of realization and conception/design of a strategy that should connect all of them in order to incite and facilitate that cultural shift. This is the gap that the paper aims to fill. In consequence, it opens up a new research field and delivers the initiation for the exploration and development of other approaches and models that aim to facilitate digital culture and that incumbent organizations can use to shape their initiatives to incite a cultural shift.
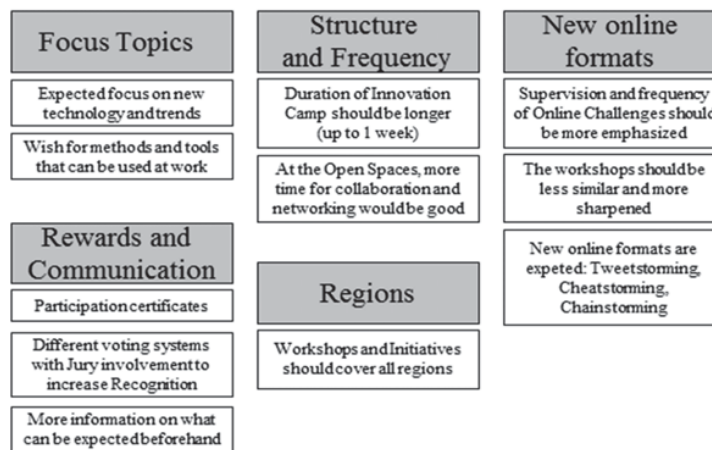

Fig. 5 The top focus areas for the design of the Ideation Strategy

VIII. LIMITATIONS AND FUTURE RESEARCH

A. Limitations

This paper provides focus areas for the design of an ideation strategy that aims to facilitate core elements of digital culture, best practices in the strategy and processes and areas of improvement; literature and interviews supported. Despite the contributions to research, the paper has limitations.

One limitation lies in the design itself: A single in-depth case study. Regarding the limitations given in time and resources and the missing availability of other case sites, this case design is selected. A multiple case study design on the other hand can provide a stronger and suitable result, regarding the generalization to other incumbent organizations in the automotive industry. However, the focus of this paper is not to develop a model that is generalizable on other automotive organizations, but to explore the strategy and activities of an incumbent manufacturer in order to facilitate core elements of digital culture that enable a digital maturation of the whole company. Furthermore, due to the novelty of this topic, this study aims to contribute to the research and ignite interest into further future research. However, the possible effects of this limitation are recognized.

Furthermore, the conduction of the study within one department that deals with digital transformation and without including e.g. internal incubators or labs is constituting another limitation. Other departments that are dealing directly or indirectly with the facilitation of digital culture and its core elements exist and therefore the possibility of other strategic focus areas and processes exist that could have been explored and included. However, the case site seems to be highly suitable for this case, since it has a variety of activities and processes that are comprised in the ideation strategy.

Another limitation is that the literature, while providing understanding towards the concepts of digital maturity, digital culture and strategies that exist to facilitate it, is both is limited and subject to change, since the topic of research is novel. Areas that were identified along the data collection were covered with research literature as well, which mitigates the influence of this limitation.

The last limitation with effects worth mentioning is the type of study. The ideation strategy and its activities that aim to facilitate digital culture are changing. The transition of the strategy and its design from the past until now and into the future will constitute a limit in validity to this study.

B. Future Research

Resulting from the discussion of the findings and the limitations of this study, the following fields for future research are proposed. A follow up study could deal with the strategic focus areas identified and explore best practices, models and frameworks for each of them. Another possible future research field could be the analysis of different elements of a workshop design and what elements of such can lead to which results, regarding the effectivity in facilitating the core elements of digital culture. For example, the effects of the chosen target groups, the venue or the motivation on the effectivity of the facilitation and incitation. Quantitative follow up studies could focus on the analysis of the impression of the employees on the

level of digital maturity that is existing within the whole organization or within specific departments. Furthermore, departments which are by nature of the job family, more resistant or prone to change or to the adaption of core elements of digital culture, could be identified by quantitative studies. This would help the departments in the organization that are dealing with digital transformation and culture shift to focus their activities precisely on certain departments or combination of departments that are targeted as target groups. An important follow up study would be the expansion of the design of this study to a multiple case study design with different departments in different companies. This would allow to compare the strategies in designs and effectivity and to explore the practices of similar incumbent companies in the automotive industry. The multiple case studies could use similar concepts and frameworks as used in this study and could enable the testing of the results of this study for replication and generalization.

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