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The Design of the Agile Culture Transformation Canvas

Short Paper

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Abstract

In today's fast-paced environment where priorities are constantly changing, organisations are increasingly turning towards agile. When doing so, organisations ought to consider their organisational culture because being agile is inherently a matter of culture. This is however a challenging task, in particular, because what is meant by having an agile culture highly depends on the organisation. Therefore, to help organisations in this journey we have initiated a design science research project to design the Agile Culture Transformation Canvas (ACTC). The ACTC is a visual tool that offers a collaborative space for its users to analyse their current culture, co-design their desired agile culture and define steps on how to close the gap between the two. In this short paper, we present the steps we have already taken in the design journey of the ACTC and along with the next ones planned.

Keywords: Agile culture, Design science research, Visual inquiry tool, Canvas, Agile transformation

Introduction

Although in today's dynamic climate of digitisation and globalisation agility has regularly been deemed desirable for organisations, it is now considered essential (Aghina et al. 2020). Agile is most of the time associated with the Agile Manifesto (Beck et al. 2001) which lists a set of values and principles to guide the development of software. However, according to Peters et al. (2020), in light of the changes brought by the covid-19 pandemic, agile has shifted from sometimes being considered a buzzword, to being a necessity for future growth in organisations. According to the 15th State of Agile Report (2021), the main awaited benefits of agile are, being able to better handle changing priorities, enhancing the business-IT alignment, and increasing team productivity. In light of this, organisations are turning towards agile by conducting, what is commonly termed, an agile transformation. In such a transformation agile is either brought to the IT department for software development where agile has most commonly been used or beyond those borders, to other departments in the organisation such as human resources or marketing for example (Moe and Mikalsen 2020). However, regardless of the context of use, both practitioners (15th State of Agile Report 2021) and scholars (Misra et al. 2009) agree that organisational culture is a determining factor for the success – or failure – of the transformation. Therefore, if an organisation wants to carry out an agile transformation, it ought to consider its culture to have an organisational culture which best fosters the agile methods, namely an agile culture (Strode et al. 2009). However, although considered possible, this cultural shift is difficult (Ogbonna 1992). Considering that, the *objective of this research project is to help organisations in their agile transformation from an organisational culture perspective*. To do so, we follow the recommendations brought forth by Gray and Osterwalder (2016) and take a tool-based approach. Specifically, a visual and collaborative tool-based approach which, as argued by Avdiji et al. (2020), is an

appropriate way to handle wicked managerial problems (Buchanan 1992) such as culture change. On that note, although many tools, ranging from culture-oriented tools (e.g., Cameron and Quinn (2011) to agile-oriented tools (e.g., Sidky et al. (2007)) exist, none fulfil the requirements of being visual and collaborative whilst being built on the conceptualisation of an agile culture. The latter is essential because, as argued by Avdiji et al. (2020), conceptualising the wicked concept (e.g., agile culture) is essential prior to further developing it into a visual and collaborative tool. Hence, we began a design science research (DSR) project (Hevner et al. 2004) with the objective to develop a visual and collaborative tool to help organisations in their agile transformation from an organisational culture perspective. To meet such an objective, we pose the following research question: *How to design a visual and collaborative tool to help culture change in an agile transformation?*

This paper extends preliminary work towards the design of the visual and collaborative tool that we have named the Agile Culture Transformation Canvas (ACTC). The ACTC is a visual inquiry tool that allows its users to define their current culture, co-build their desired agile culture, identify the gaps between the two, and formulate actions to close the existing gap. Visual inquiry tools are tools that, in the form of a canvas, offer empty design spaces for their users to visually and collaboratively address a wicked problem (Avdiji et al. 2020), such as culture change for instance. In the form of an improvement (Gregor and Hevner 2013) that is – an innovative solution to an already known issue, the ACTC contributes to both the academic and agile professional communities. Concerning the former, the ACTC development process extends the body of knowledge in terms of prescriptive knowledge regarding how one designs visual and collaborative tools.

The objective of this specific paper is twofold: (1) to report on the ongoing DSR journey by presenting the previous iterations the ACTC has undergone and (2) because of the importance evaluation holds in DSR (Venable et al. 2016), we aim to present the next evaluation episode that we are planning. The evaluation will be in the form of workshops (Thoring et al. 2020) held in naturalistic settings (Venable et al. 2016). The remainder of the paper unfolds as such: in the next section, we first provide a brief description of the background literature. In the following section, we present the DSR project with the past design-evaluation cycles of the ACTC along with the foreseen next steps. Finally, in the last section, we conclude by discussing the academic and managerial contributions already made and expected to be made along the DSR journey.

Background Literature

Agile Transformation

Commonly associated with the values and principles from the Agile Manifesto (Beck et al. 2001), the tenets behind agile such as speed, adaptability, collaboration and willingness to learn, for example, have in fact been documented years prior to the 21st century (Conboy 2009). Based on those tenets, agile methods such as Scrum (Schwaber and Sutherland 2017) and SAFe (Leffingwell 2007) have been developed. These methods, which include several agile practices (e.g., the sprint retrospective), embody the tenets of agile and have originally been used in a software development context. However, according to Moe and Mikalsen (2020), driven by a need for better interaction between the different parts of the organisation, organisations are expanding their use of agile beyond the frontiers of the IT department. Thus, leading to what may be termed an agile *transformation*. In opposition to an agile *adoption* which, according to Sahota (2012), solely refers to using agile methods, an agile transformation includes the notion of culture. While the former may be referred to as *doing* agile, the latter is referred to as *being* agile (Sahota 2012). An agile transformation may therefore be understood as an organisational change (Gandomani and Nafchi 2016) which takes into account the embodiment of the tenets of agile rather than solely adopting new practices (Gregory et al. 2015). According to both scholars (e.g., Gandomani and Nafchi (2016)) and practitioners (15th State of Agile Report (2021)) one of the most significant factors that will determine the success or failure of the transformation relates to the culture of the organisation conducting the said transformation. An agile culture is considered to be collaborative, transparent, adaptable, and have a rapid knowledge-sharing dynamic (Misra et al. 2009; Rebentisch et al. 2018).

Organisational Culture

A remarkable volume of published studies describing the defining characteristics of organisational culture exists. The literature has noted that it encompasses the habits, practices, ideas, and values of an organisation (Schein 1985). As a matter of fact, it has been stated in several studies that organisational

culture can include almost anything in a company (Iivari and Iivari 2011; Sackmann 1991). A seminal definition proposed by Hofstede (1980) however arises from the body of literature. The definition states that organisational culture is “... *the collective programming of the human mind that distinguishes the members of one human group from those of another*” (ibidem p.24). Additionally, an established theory which continues to be used by both scholars (e.g., Tolfo et al. (2011)) and practitioners (e.g., Gray (2016)), is the three-level theory of organisational culture proposed by Schein (1985). The theory suggests that organisational culture exists on three different levels: (1) artefacts: this level is the most visible and tangible level of the three and includes the structures and processes, (2) values: this level is deeper than the first and includes goals and social principles, and finally (3) assumptions: this level is the deepest and includes the taken-for-granted assumptions which dictate how information is processed. According to Ogbonna (1992), organisational culture change is considered possible, and regarding how one may do so, Alvesson and Sveningsson (2008) suggest conducting an “everyday reframing”. An everyday reframing is performed by changing the behaviours through small informal initiatives whilst having influential champions leading by example. However, prior to changing the behaviours, the current and desired cultures must be analysed to identify the gap between the two (Willcoxson and Millett 2000). Because such a change initiative can be considered as a wicked problem (Buchanan 1992), it may benefit a tool, specifically a visual inquiry tool (Avdiji et al. 2020). Furthermore, cultural change requires a tool that, not only engages a conversation around the problem but allows its users to collaboratively map the problem at hand in order to make it tangible (Gray and Osterwalder 2016). However, despite a vast amount of existing tools, they are either not visual and collaborative (e.g., Cultural Web, (Johnson 1992) or Agile Adoption Framework (Sidky et al. 2007)) or if they are, they are not built around the pillars of an agile culture (e.g., (Gray 2016)). The latter is an issue because as argued by Avdiji et al. (2020), visual inquiry tools must be built on a conceptualisation of the concept of interest, namely, agile culture is the case of this research. Overall, although past research has emphasised the importance of having an agile culture for an agile transformation, along with the recommendation to address wicked problems such as culture change with visual and collaborative tools (Avdiji et al. 2020; Hawryszkiewicz 2014; Osterwalder et al. 2016), such a tool does not yet exist. This gap therefore represents a worthwhile design opportunity that we seek to fulfil through this research.

The Design Science Research Project

This research is conducted using Design Science Research (DSR) (Hevner et al. 2004). DSR is a design paradigm used to develop innovative artefacts to solve relevant organisational issues through design-evaluation iterations. Given that the objective of the research is to develop a visual and collaborative tool to help agile transformation, DSR therefore seemed to be an appropriate paradigm choice. We follow the DSR process model proposed by Peffers et al. (2007) to further structure the research project. The remainder of this section is – at a high-level – structured around the steps included in the process model.

Problem Identification and Objectives of Solution

Organisational culture is amongst the largest – if not the largest – challenges in an agile transformation. We further delineated the problem by collecting empirical data by conducting a field study via a nine-month internship in a large (i.e., 1,500 employees) organisation conducting an agile transformation. Additionally, we conducted semi-structured interviews with agile practitioners to further understand the problem faced in the agile transformation (Roschnik and Missonier 2021). By engaging with the environment, that is – collecting empirical data, we further specified the targeted problem. Our main discovery is that although the term agile is frequently used, there is rarely a common understanding regarding what it means (e.g., mix-ups between agile *methods* and agile *culture*). Besides, when agile is referred to as a culture, its concrete significance remains nebulous. For instance, although people agree that in an agile culture people are trusted to be autonomous (Roschnik and Missonier 2021), autonomy is reflected differently depending on the team. Thus, the meaning behind the notion of autonomy is different. Such a phenomenon is a problem because, as previously noted in the background literature section, to change culture one must define what the desired (agile) culture is to be able to perform a gap analysis against the current culture. Therefore, as per the reviewed literature, to address the identified problem the solution must visually engage the participants (Gray and Osterwalder 2016), allow participants to depict their current and desired cultures (Willcoxson and Millett 2000) around the main building blocks of agile culture and formulate the actions they can perform (i.e., everyday reframing Alvesson and Sveningsson (2008)) to change the deeper layers

of their culture (Schein 2009). Fundamentally, the solution will serve as a boundary object (Nicolini et al. 2012) that allows its users to work on their culture by making it tangible.

Agile Culture Transformation Canvas – Development and Evaluation

To design the ACTC, we used the Design theory for visual inquiry tools (Avdiji et al. 2020). A visual inquiry tool is a type of managerial tool that, founded on design thinking techniques, allows its users to visually and collaboratively address the problem at hand and jointly ideate on its possible solutions. The design theory suggests three design principles for the design of such type of tool. Namely, (1) conceptualise the wicked managerial concept with a conceptual model, (2) instantiate the conceptual model into a shared visualisation (i.e., a canvas), and finally (3) elaborate directions of use. To inform the design of the ACTC we use the theory of organisational culture as kernel theory (Schein 1985) and to organise the evaluation strategy we leveraged the Framework for Evaluation in Design Science (FEDS) (Venable et al. 2016).

Design Principle 1 – Conceptual Model (done)

To address the first design principle, we developed a conceptual model framing the concept of agile culture (Roschnik and Missonier 2021). To design the first iteration of the conceptual model, we leveraged the existing literature describing an agile culture. We subsequently evaluated the conceptual model with seven expert interviews each lasting one hour long (Roschnik and Missonier 2022). We then iterated on its design accordingly.

Design Principles 2 and 3 (done)

As per the second and third design principles, we instantiated the conceptual model of agile culture into a shared visualisation and formulated directions of use. To do so, we designed the first version by conducting a 2-hour co-design session (Sanders and Stappers 2008) with an agile expert and a user experience (UX) designer. We decided to include an agile expert in the design of the first version of the ACTC to allow us to gather further information regarding the problem encountered in the field (Ågerfalk and Wiberg 2018), thus refining the understanding of the problem. Additionally, we included a UX designer because, due to their training in user experience, not only could they help us think outside of the box, but also help us envision the best user experience regarding how the canvas ought to be applied. Overall, the objective of the session was to produce the first version of the ACTC from the conceptual model of agile culture. To evaluate the first version of the ACTC we conducted two types of evaluations: expert interviews and an exploratory focus group. Concerning the former, we conducted three expert interviews each lasting approximately one hour. The objective of these interviews was to gather preliminary feedback regarding its perceived usefulness, ease of use (Davis 1989), elegance and efficacy (Checkland 2000, cited in Avdiji et al., 2020). Concerning the latter, we conducted an exploratory focus group (Tremblay et al. 2010) with 13 agile practitioners as participants. The objective of the exploratory focus group was to gather insight from the ACTC being used. To do so, the first author acted as a complete observer while taking notes relating to the participant's behaviours in relation to how they used the ACTC. After having tested the ACTC, participants were asked to tell us about their experience using it. We took into consideration the received feedback and iterated on the design of the ACTC to produce the second version of the ACTC.

Next Step

The next step in this DSR research project is to evaluate the second version of the ACTC in naturalistic settings (Venable et al. 2016). To do so, we will conduct workshops (Thoring et al. 2020) with teams in the targeted organisations, namely organisations conducting an agile transformation. By team, we refer to a group of people that work on a project together. The minimum number of participants is three and the maximum seven. Because if below three, the interactions among participants may be too little, and if above seven, not all participants will have the chance to speak. The workshop will last approximately 2 hours and take place in two phases: in the first phase teams will be asked to use the ACTC as per its intended use. During that time, in accordance with the goal-method framework for designing and evaluating artefacts via workshops (Thoring et al. 2020), the first author will observe participants' interactions and behaviours both with the ACTC and with each other. Because the ACTC serves as a boundary object, the objective of the workshop is to assess whether it allows the participants to discuss, form a common ground regarding their

current and targeted cultures (Willcoxson and Millett 2000), identify the gap between the two, and collectively formulate actions to conduct a culture change (i.e., everyday reframing). This first phase will also allow us to test the timing of use of the ACTC and assess whether the directions of use are understood – or not – by the participants. In the second phase, we will conduct semi-structured interviews where we will ask the participants for their feedback regarding their experience using the ACTC. Upon consent of the participants, we will record the interviews. With the data collected from the two phases, we will iterate on the design of the ACTC. We are currently searching for teams that want to partake in the workshop.

Conclusion

For several reasons, such as wanting to have better collaboration between IT and business departments or seeking to increase team productivity, organisations are conducting agile transformations (15th State of Agile Report 2021). However, an important challenge faced by organisations relates to their culture which may hinder the transformation (Gandomani and Nafchi 2016). With the objective to help these organisations adapt their culture for their agile transformation, we take a human, collaborative and visual stance and accordingly, have initiated a DSR project to develop the Agile Culture Transformation Canvas (ACTC). The ACTC acts as a boundary object and helps its users discuss the current and desired agile cultures, collectively analyse the gaps, and identify actions to take to adapt their culture. The objective of this specific paper was to report on this DSR project and provide an overview of the planned next steps in the design journey of the ACTC. Finally, by conducting this DSR project, we expect to contribute to both the practitioner and scholar community with the ACTC acting as an improvement (Gregor and Hevner 2013), and the accumulated prescriptive knowledge regarding how one designs a visual and collaborative tool.

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