PROVISIONAL DIRECTIONALITY: HOW SCRUM TEAMS USE ORGANIZATIONAL ROUTINES TO ACCOMPLISH AGILITY IN PRACTICE

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ABSTRACT

This paper examines how Scrum teams use organizational routines to accomplish agility in practice. We find that relentlessly enacting the typical patterns of organizational routines in different ways creates and recreates 'provisional directionality'—a tentative realm of possible paths. Provisional directionality is what enables Scrum teams to accomplish agility. The findings contribute to research by unpacking how agility is accomplished in practice. Moreover, our findings yield implications for managing Scrum teams.

INTRODUCTION

How to accomplish agility—i.e., the ability of a team to quickly and relentlessly address changing situations in a coordinated and competent way—is a critical concern in contemporary organizations. A recent study of agile transformations shows that 75 percent of the organizations in the survey planned, performed or completed a transformation towards agile ways of working, and 40 percent of the organizations in which this transformation is in progress or completed use 'Scrum' or 'Kanban' (Aghina, Handscomb, Salo, & Thaker, 2021). Scrum seems to accomplish agility by relying on an iterative approach, which promises continuous inspection of the status quo and subsequent adaptation of the course of actions. At the same time, Scrum involves a set of prescribed events, rules and roles, to which actors need to adhere meticulously (Schwaber & Sutherland, 2020). In other words, Scrum relies on organizational routines, that is, "repetitive, recognizable patterns of interdependent actions, carried out by multiple actors" (Feldman & Pentland, 2003: 95).

Research on organizational routines has made important progress in understanding how performing routines contributes to flexibility in organizations, i.e., how routine participants adapt the performances of routines to fit specific situations (Danner-Schröder & Geiger, 2016; Feldman & Pentland, 2003; LeBaron, Christianson, Garrett, & Ilan, 2016). However, agility is more than flexibility, because it implies acting *quickly,* and *relentlessly* addressing the requirements of changing situations (Conboy, 2009). Indeed, some scholars have mentioned that routines may also promote agility (e.g., D'Adderio, 2014; Kremser & Xiao, 2021; Pentland, Liu, Kremser, & Hærem, 2020), but they have not yet unpacked how this is possible. Research on routines in agile work settings (Dönmez, Grote, & Brusoni, 2016; Goh & Pentland, 2019; Kremser & Xiao, 2021; Lindkvist, Bengtsson, Svensson, & Wahlstedt, 2016) has also not yet explained how routines accomplish agility. Thus, the aim of this paper is to unpack how performing routines accomplishes agility in practice.

CONTEXT AND METHOD

We draw on a 12-month ethnographic study of the engineering company 'Technology Innovation Corporation' (TIC)—a high-tech manufacturing company in the mechanical engineering sector with approximately 1500 employees. Within TIC, we focus on 'Team Alpha', a software development team that uses Scrum (Schwaber & Sutherland, 2020). Scrum splits work into iterative time periods of (in our case) two weeks; so-called 'Sprints'. Scrum teams incrementally define small problems, called 'issues', and plan which of these issues should be addressed in the next Sprint. Scrum also prescribes routines (i.e., 'envisioned' routines) to which all team members should adhere. As participants repetitively perform those prescribed routines, they develop typical action patterns (i.e., 'enacted' routines) that they can use to collectively carry out their work. The counterintuitive observation that Team Alpha adhered closely (almost dogmatically) to those action patterns to respond to ever-changing situations drove our inquiry.

We applied an ethnographic approach, through which we collected observational data, interviews, documents, and digital-trace data. To analyze those data, we relied on an abductive data analysis process, paying close attention to the mundane doings and sayings of the members of Team Alpha as they performed the Scrum routines.

SUMMARY OF THE FINDINGS

Figure 1 summarizes our insights about how actors can use organizational routines to accomplish agility in practice. The top-part of the figure signifies the typical action patterns that characterized each of the Scrum routines in Team Alpha. When actors engaged in a specific routine performance, they had to effortfully enact those patterns in situ. We find three different processes of how they enacted the typical routine patterns: First, *recalling* means that an actor reminds the team of specific previous actions that are relevant to the current situation and connects these previous actions with the typical action pattern of the routine. Second, *associating* means drawing connections between the past or future enactment of the typical action pattern of a routine and the current situation. Third, *moving on* signifies that the current step of the typical action pattern is sufficient, and that the team can proceed with the step that typically follows next. Because these three processes recreate the typical pattern of the routines, they can be considered processes of patterning (Feldman, 2016).

INSERT FIGURE 1 HERE

Consider the following example of the *recalling* process from our data. When Team Alpha met to perform their Refinement routine (a regular, time-boxed meeting), an actor suggested to discuss an issue aimed at implementing a function that would allow the users of the software that Team Alpha developed to edit tabular files (what they referred to as 'table editor'). As his colleagues were not familiar with this issue, he recalled actions previously taken in relation to this functionality. For instance, he narrated how he had looked for various third-party tools that could be used to implement the table editor functionality, and that the users wanted to edit large tabular files including several thousand cells. Notably, he recalled details relevant to complete the typical pattern of the Refinement routine.

As Team Alpha enacted the action patterns of the Scrum routines, they created and recreated *provisional directionality*. We define provisional directionality as a tentative realm of possible paths that actors can take to proceed. In the example mentioned above, for example, recalling actions established a provisional directionality that the team could take to proceed. Narrating that the clients wanted to edit tabular files with several thousand cells prompted one the developers, for example, to discuss how it would be possible to use a touch function in large tabular files. Each cell would be very small, making it difficult to navigate the tabular files by touch. These actions related to the touch functionality were enabled but not determined through recalling.

We suggest that (re-)creating provisional directionality through recalling, associating, and moving on are the underlying processes of how routines can accomplish *agility*. These processes account for each definitional dimension of agility: First, provisional directionality allows team members to *quickly* react to situational changes, because it does not dictate a specific course of actions and remains open for revisions. Second, team members *relentlessly* recreated provisional directionality (through recalling, associating and moving on), as the situation changed, affording the performance of further actions. Third, creating provisional directionality was a *coordinated* act, as the team members could align on a corridor of possibilities so that these actions could build on each other. Fourth, creating provisional directionality was *competent*, which particularly became visible when team members had to make their suggestions intelligible to each other.

IMPLICATIONS FOR UNDERSTANDING AGILITY

Our insights about provisional directionality have implications for scholarly understanding of agility. Whereas prior routine research examined flexible adaptations to changing situations (Dönmez et al., 2016; Goh & Pentland, 2019), we show that accomplishing agility is not only about the adaptation *per se*, but about creating possible ways of proceeding. Our research uncovers how actors relentlessly create and recreate a tentative realm of possible paths, which lends coherence to the course of actions, but does not constrain it in a way that prevents generativity. Creating possible paths for future actions is thus the way in which agility goes beyond flexibility. Seen this way, provisional directionality foregrounds the crucial role of possibilities (Pentland, Mahringer, Dittrich, Feldman, & Ryan Wolf, 2020) for the accomplishment of agility.

In addition, we show that there is no single best way to accomplish agility (i.e., equifinality). In our data, we observed that actors used the same typical routine patterns in different ways to create provisional directionality, depending on the situation. Recalling, associating and moving on are three different processes to accomplish this, each of which influences provisional directionality differently. In situations in which it was unclear how to get started, *recalling* provided a common starting point for team members' actions. In other situations, they had to refine provisional directionality by including or excluding possible aspects, which they achieved through *associating*. Moreover, they could use *moving on* in situations where they were stuck. If actors only had one way to enact the typical routine patterns available, they could not account for the differences in situations that they encountered. Thus, they could not address situations in a competent and coordinated way, inhibiting the accomplishment of agility.

Provisional directionality also reveals that agility is accomplished through recreating patterns *in situ*. This insight emphasizes that describing abstract characteristics of routines that might be conducive to agility, such as iterative planning or a collaborative approach (Baham & Hirschheim, 2022), only provides a part of the answer. Our study reveals that it is not just the typical routine pattern per se that matters, but also how this pattern is enacted, in

situ, through the actions of different individuals. This difference is important because agility emerges through the interplay of typical routine patterns and specific situations. Participants who successfully accomplish agility are both sensitive to the current situation and know typical patterns.

In a more general sense, our insights reveal how a practice and process approach helps to understand the accomplishment of agility (Renzl, Mahringer, Rost, & Scheible, 2021; Ritter, Danner-Schröder, & Müller-Seitz, 2021). This approach helps us to consider how agility is neither an abstract characteristic of the practice nor the organization, but it is continuously and dynamically reproduced in situ.

PRACTICAL IMPLICATIONS FOR MANAGING AGILE TEAMS

Prior research proposed a variety of factors that may influence the effectiveness of Scrum, such as leadership, team orientation, trust, learning, management support and autonomy (e.g., Verwijs & Russo, 2021). We extend these findings by adding another crucial insight that contributes to the effectiveness of Scrum in practice: the more Scrum teams collectively know, use and follow typical patterns of action, the easier it is for them to create and recreate provisional directionality, which then contributes to accomplishing agility.

Based on our research, we suggest the following reasons why Scrum may fail: (1) actors do not share typical patterns of action, or (2) they cannot successfully employ the underlying processes of recalling, associating and moving on to create provisional directionality. With regards to reason 1, many factors can impair the development of typical patterns of actions, such as frequent changes in team composition, insufficient commitment of actors to Scrum, conflicting organizational structures, break-down in truces, as well as adaptations of the typical action patterns that have not yet taken root. Even if a typical action pattern exists, there may be factors that impede recalling, associating and moving on (reason 2). Such factors include insufficient discretion of the Scrum team, or conflict and power dynamics (e.g., a team manager uses his or her hierarchical power to make decisions that run counter the typical pattern).

It is important to note that enacting typical routine patterns does not mean that Scrum participants need to rigidly adhere to the Scrum framework (Schwaber & Sutherland, 2020). Routine Dynamics scholars distinguish the action patterns that are prescribed in frameworks (i.e., envisioned routines) from the typical action patterns that actors create and recreate when they perform a routine (i.e., enacted routines) (Pentland & Feldman, 2008). As our findings show, what matters are enacted routines, which may be more or less similar to the envisioned routines that the framework prescribes. The official Scrum guide reinforces a dogmatic approach when it notes that "[t]he Scrum framework, as outlined herein, is immutable. While implementing only parts of Scrum is possible, the result is not Scrum. Scrum exists only in its entirety" (Schwaber & Sutherland, 2020: 13). However, our findings suggest that the effectiveness of Scrum is not primarily grounded in whether participants adhere to the prescribed framework as closely as possible (as this might prevent necessary adaptations to the local context), but there is some value to dogmatism when applied to agreed-upon action patterns.

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FIGURE 1

How enacting routines (re-)creates provisional directionality to accomplish agility