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"NO ONE CAN DO IT ALL": THE (CHANGING) ROLE OF EXTERNAL MANAGERS FOR TEAM EMPOWERMENT IN AGILE TEAMS

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Research Paper

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Abstract

Agile software development teams need a high degree of team empowerment. Yet, autonomous decision-making and self-organization are at odds with traditional command-and-control management. As more and more organizations adopt agile methods at a large scale, managers can be either a burden or a facilitator in the endeavor to achieve agility. Prior research has studied the internal processes of agile teams, but our understanding of the role of team-external managers is limited. In this research, we conducted a case study in five teams in a large organization currently undergoing an agile transformation. We developed a theoretical model of team-external management and its effects on team empowerment. We provide recommendations for practitioners and a set of hypotheses for empirical testing in future studies.

Keywords: Agile software development, Team-external management, Team empowerment.

1   Introduction

Two decades have passed since Beck et al. (2001) formulated the 'Agile Manifesto', a set of principles for software development teams. Since then, *agile methods* such as Scrum, eXtreme Programming (XP), or the Spotify model have become the de-facto standard for developing software (Baskerville et al., 2011; VersionOne, 2020). Organizations have adopted these more light-weight, flexible, and iterative methods to enable their teams to react more quickly to changing market conditions and customer needs. Positive experiences have led teams in domains outside of software development to work in an agile style (Niederman et al., 2018). As a result, agile methods are not solely used in software development teams anymore but are adopted on a large scale across the whole organization for product development (Dikert et al., 2016), and (scaled) adoptions have set off *agile transformations* (Laanti et al., 2011; Paasivaara et al., 2018).

Agile teams require *empowerment*, comprising both autonomy and self-organization. This challenges traditional organizational structures and processes: teams make autonomous decisions and self-organize their efforts to a significant extent (Hoda et al., 2013; Masood et al., 2020; Xu & Shen, 2016). The project manager's role fundamentally changes from team-directive to team-supportive (McAvoy & Butler, 2009; Remus et al,. 2019). *Team autonomy* provides individual team members and groups the power to self-organize (Hoda et al., 2013; Moe et al., 2019) and the discretion of self-direction (Dikert et al., 2016; Moe et al., 2019). In studies of teamwork, increased team autonomy has been mostly identified as positive for team performance and related factors such as job satisfaction or well-being of team members (Cordery et al., 1991; Stewart, 2006; Wall et al., 1986), especially in uncertain contexts (Cordery et al., 2010; Langfred, 2004).

Previous research has highlighted that the desired flexibility and adaptiveness in agile teams is reflected in higher degrees of team autonomy (Larman, 2003; Lee & Xia, 2010), self-organization (Chow & Cao, 2008; Highsmith et al., 2001; Hoda et al., 2013), self-management (Sharp & Robinson, 2004), and team empowerment (Larman, 2003; Maruping & Magni, 2012). Even though these studies show the importance of empowerment for teams working with agile methods, they often focus on the team and team-internal processes. Managers, however, still exist in organizations that adopt agile methods, and recent studies highlight the continued significance of managers also in the context of empowered teams (e.g., Garvin et al., 2013; Remus et al., 2019). Nevertheless, limited guidance exists on the role of managers operating explicitly outside of teams or their control (Cram et al., 2016; Dreesen et al., 2020). Thus, their role is often overlooked in agile transformations, although management support is vital as especially middle management has the capacity to either hinder or drive agility (Dikert et al., 2016).

Our objective is to understand the role of *team-external managers (TEM)* and their impact on the work of agile teams. Furthermore, in the same way that agile teams are impacted by the work of TEM, managers themselves operate not on a green field, but within an organizational context that encourages or confounds their actions. Consequently, we ask the following question: *"How do team-external managers influence team empowerment of agile software development teams?"*

To answer our research question, we use an exploratory, embedded multiple case study design (Sarker et al., 2018; Lee, 1991). We add to the body of knowledge on ASD by developing a theoretical model to explain how team-external management affects a team's perception of empowerment.

The remainder of the paper is structured as follows. In Section 2, we provide an overview of related work on agile teams, team empowerment, and team leadership. In Section 3, we describe our research design. Subsequently, in Section 4, we present the results of our analysis. Finally, we discuss our results, implications, and limitations in Section 5.

2   Theoretical Background and Related Work

Agile software development (ASD) is an umbrella term for a variety of distinct methods, such as Scrum, eXtreme Programming (XP), or Crystal (e.g., Martin, 1991; Poppendieck and Poppendieck, 2003; Schwaber, 1995; Stavru, 2014). Collectively, these approaches emphasize an iterative development model, close collaboration between stakeholders, and a lightweight approach to project documentation (Cohen et al., 2004). *Agile methods* have essentially been developed to counteract the shortcomings of traditional software development (Beck et al., 2001; Highsmith & Cockburn, 2001) such as limited opportunities to adjust to changes and to integrate feedback (Mahadevan et al., 2015).

The basic mechanism for problem-solving in agile methods is a *cross-functional team* that comprises all skills necessary to deliver value to the customer. Those teams, ideally suggested to be made up of intrinsically motivated teams of equals, work in short iterations, get feedback as soon and often as possible, and use this feedback to continuously improve both the product and their team processes (Beck et al., 2001). Thus, the emphasis is on significant flexibility and autonomy for teams (Hoda et al., 2013; Wood et al., 2013). In agile teams, the overall development process is not planned and scheduled upfront by an all-powerful project manager; rather, progress is made in short iterative phases, with decisions made collectively by the team as solutions evolve (Cockburn et al., 2001; Highsmith et al., 2001).

One crucial aspect of ASD teams is the necessity of *empowering* an ASD team, providing both autonomy and purpose (Cockburn & Highsmith, 2001). Empowered teams have been around long before agile methods became popular, starting when Trist and Bamforth (1951) published their research on self-organizing coal miners. Specifically, four features are characteristic for empowered teams: (1) *potency* (the collective belief of a team that it can be effective), (2) *meaningfulness* (the team's belief that its tasks are important and valuable), (3) *autonomy* (the degree to which team members experience freedom, independence and discretion), and (4) *impact* (the team's work is significant and important for an organization) (Kirkman & Rosen, 1999).

While some scholars use the terms *empowered*, *self-organizing,* or *autonomous teams* synonymously (e.g., Moe et al., 2008), empowered teams are not only managing themselves, but the construct of empowerment goes beyond that: teams need to know the purpose and implications of their work to feel a sense of empowerment (Kirkman & Rosen, 1997). We argue that this broader definition of empowerment reflects the ideal ASD team better than concepts such as self-organization or team autonomy (Hoda et al., 2012; Werder & Maedche, 2018). According to the Agile Manifesto (Beck et al., 2001), not only do "[t]he best architectures, requirements, and designs emerge from self-organizing teams", but teams also need to know that they contribute to the "highest priority [of an organization, which] is to satisfy the customer", which gives a team purpose and, consequently, noticeable impact. Thus, we consider agile teams a sub-category of empowered teams.

Prior research has shown that team empowerment is positively related to a variety of desirable outcomes concerning team performance such as productivity, proactivity, and customer satisfaction. In addition, team empowerment positively influences attitudinal variables, for example, job satisfaction, organizational commitment, and team commitment (Cheong et al., 2016; Kirkman & Rosen, 1997; Mathieu et al., 2006; Maynard et al., 2007, 2012; Moe et al., 2008; Moe, Dingsøyr, & Dybå, 2009; Parker et al., 2015). Only when the team has decision-making authority for problems within its domain, the team can be as responsive and adaptive as needed while taking on responsibility for the problem itself (Moe et al., 2009, 2010, 2019).

Structural, processual, and cultural factors can facilitate or hinder the emergence of empowered teams. For example, high specialization and the resulting division of labor are a major challenge, especially if the specialization leads to highly siloed organizational structures (Moe et al., 2008). Also, high specialization often supports high individual autonomy, which is again potentially problematic for empowered teams: while team autonomy is an important characteristic of an empowered team, it decreases individual autonomy because the team makes most of the decisions instead of the individual (Moe et al., 2009). Nevertheless, empowerment itself can also have negative effects if empowerment initiatives overwhelm employees. For example, specific empowering leadership behaviors can increase job-induced tensions (Cheong et al., 2016). Especially if team empowerment is illusory, or heavily limited by existing organizational processes and structures, empowerment initiatives can also enhance cynicism (Brown & Cregan, 2008). That is not to say that empowering teams is a non-beneficial endeavor in itself, but that organizations need to be very careful in the process because changing power dynamics can easily create tensions and produce unintended outcomes of empowerment initiatives (Baarle et al., 2019).

One of the central factors of successfully developing team empowerment is team management. The breadth of roles and responsibilities that management personnel take on in an organization is defined in well-established theories of *leadership* and *management*. While some researchers view leadership and management as the same (Zaleznik, 2004), others argue that leadership is one aspect or sub-category of management (Mintzberg, 1973), or even an entirely separate concept (Kotter, 1990). While activities such as "initiating change", "giving directions", and "motivating team members" are related to the notion of leadership, the operational implementation – meaning "planning", "organizing", and "controlling" – is often more narrowly defined as management. The two concepts are hard to define strictly or separately from each other (Hunt, 2004) but the differentiation is important to understand the shift of responsibilities in empowered teams. As Highsmith & Cockburn (2001) have stated, ASD relies on "a world view that organizations are complex adaptive systems […], in which decentralized, independent individuals interact in self-organizing ways,". Concepts such as *shared leadership* – that is closely intertwined with ASD teams (Dombrowski & Mielke, 2013; Parker et al., 2015) – describe the shift from "traditional managerial hierarchies […] to 'thick networks of relationships'" (Hunt, 2004, p. 27). Leadership and management responsibilities do not need to be filled by one person, traditionally a project or team lead, but specialized knowledge in a particular issue allocates leadership (Moe et al., 2009). Accordingly, team members share decision-making authority while acknowledging that their influence on a specific decision is dependent on their experience and knowledge in the domain of the problem (Hoegl & Parboteeah, 2006). Those characteristics are at odds with traditional command-and-

control management in large enterprises, where structures and processes have grown for decades, and hierarchies and bureaucracy have been established (Uhl-Bien & Marion, 2009).

This is where *team-external managers* (TEM) come into play. We define TEM as *functional managers who are connected to agile teams but not involved in the team's day-to-day inner workings*. While TEMs exist on different levels of an organization, spanning from team leads to executive management, we explicitly investigate the role of direct supervisors in this study. We suggest that over time, the role of TEMs in agile environments will change, and the number of managers will likely decrease, but there is still "management" and "managers". The managers' responsibility is to design constraints and create conditions for empowered teams to work effectively, self-organize, and continuously improve. Also, managers have a role in providing alignment and coordination with other teams and the overall organizational strategy (Moe et al., 2019; Vidgen & Wang, 2009). For empowered teams, TEM are expected to "generally refrain from interfering in team-internal operational decisions" (Hoegl & Parboteeah, 2006), and prior research suggests that TEMs' behavior can become a major barrier for team empowerment if they provide low external autonomy – the degree to which external leaders refrain from influencing the team's activities (Moe et al., 2008).

Prior research has identified governance mechanisms that managers still can use in an agile setting, and has called for further research on how these findings apply in different contexts (Lappi et al., 2018). Others have defined management roles in broad terms as, for example, "mentors", "coordinators", "negotiators", or "process adapters" (Shastri et al., 2017), or have formulated guiding principles of agile leadership such as "setting the direction", "establishing the simple, generative rules of the system", or "encouraging constant feedback, adaptation, and collaboration" (Parker et al., 2015). It remains unclear, however, how these roles and principles translate to organizational structures, routines and practices, or management levels. In addition, recent studies indicate that not only the management style but also the manager's prior role and relationship to the team could influence their ability to positively influence team empowerment. For example, team coaches – facilitating the team's work without being involved in the actual execution and often having no prior relationship to the teams – seem to be in a better position to positively influence team empowerment than disciplinary managers (Mathieu et al., 2006; Rapp et al., 2016).

3   Research Design

Given limited theory on the role of both antecedents and outcomes on the role of TEMs for ASD teams, we chose an *exploratory multiple-case study approach* (Sarker et al., 2018) as a data-centric approach involving inductive reasoning for building theory. This allows us to collect rich data on the phenomenon in a real-world context to arrive at new insights on the interplay between organizational environments, TEMs, and ASD teams. We focus on five teams as the unit of analysis within one single case organization. The organization (hereafter referred to as INSUR) is a large German insurance company which is currently undergoing an organizational transformation and adopts ASD methods on a large scale for this purpose. This presents a unique opportunity to investigate our research questions in a critical case, with extensive access to internal data and teams, as well as the possibility to collect longitudinal data. For this study, data was collected from several teams, which all operate within the case organization. In this way, variations that result from external (e.g., environment or market influences) or internal factors (e.g., overall organizational structure, processes, or culture) can be controlled for (Lee, 1989). The selection of teams follows a combination of literal conditions of the cases lead to predicting the same results) and theoretical (conditions of the cases lead to predicting contrasting results) replication logics (Dubé & Paré, 2003).[1]

INSUR is a German insurance company with approximately 10,000 employees, which belongs to a

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[1] Earlier results of the study have been published as a research-in-progress paper before.

multinational insurance enterprise operating worldwide. INSUR has an internal national IT department that is responsible for software development and operations. In addition, an international IT subsidiary oversees providing and operating a partially standardized, global IT infrastructure. The adoption of ASD methods at INSUR has progressed in two phases, while a third phase is currently being prepared.

In phase 1, before 2019, the adoption was primarily driven by bottom-up efforts from within IT teams. The first teams started experimenting with Scrum around 2015. Over the years, ASD became more prevalent and the company has started to officially introduce agile methods in *pilot teams* – mostly Scrum (Schwaber & Beedle, 2002) as well as Kanban and XP practices. INSUR has a strong workers' council that was involved in the efforts to introduce ASD from the beginning and negotiated a works agreement on how to transition from a traditional SD approach early on. After that, teams could voluntarily start to use ASD practices and several teams chose to do so.

In phase 2, senior IT executives issued a mandate for remaining SD teams in the IT department to adopt ASD methods at the beginning of 2019. The voluntary movement to adopt ASD methods had lost its momentum and the IT department struggled with managing the duality of traditional and agile SD approaches and their inherent contradictions. Simultaneously, two organizational changes were implemented: first, the responsibilities of traditional functional managers in the IT department were revised and, partially, these management positions were reassigned. Specifically, these managers were encouraged to refrain from business decisions concerning the teams and instead invest more time in coaching and developing individual employees. On average, the manager-to-staff ratio was between 1:15 and 1:25. Second, a new quarterly planning cadence was implemented to manage inter-team dependencies. Beyond the inter-team quarterly planning, INSUR has explicitly refrained from imposing standardized team-internal processes. Instead, the organization has given individual teams discretion to combine agile methods or practices in their specific working contexts as they see fit. This has resulted in a wide variety of working models across teams, ranging from textbook examples of the Scrum process to fully tailored approaches.

For each of the five teams, different sources of evidence were collected to serve as converging lines of inquiry, allowing for triangulation of the different perspectives on the question how TEM influence agile teams at INSUR (Yin, 2009). These sources include (1) internal documents and intranet data, (2) observations from attending team events shadowing the team, and (3) semi-structured interviews: (a) group interviews with all team members to establish a common understanding of the project team setup, goal, and work processes as well as an overview of management personnel who interact with the team, and (b) semi-structured individual interviews. The individual interview participants were team members and their respective disciplinary supervisors as well as other stakeholders of the team (e.g., senior managers). The interviews covered interactions between a team member and their peers, stakeholders, and functional supervisors. In total, we conducted five group interviews and 40 individual interviews lasting 45-70 minutes. Out of the 40 individual interviews, 11 participants were managers, and 29 participants were team members (including product owners and agile coaches, who are official team members at INSUR). The interview guidelines for the three forms of interviews, the case selection criteria, as well as a participant overview can be accessed via OSF in an online appendix[2].

Our data analysis started in parallel to the data collection phase. After the first round of interviews in TEAM1 concluded, the interviews were transcribed and thoroughly read. We noticed that the interviewees mentioned responsibilities of TEM that we had not anticipated. The interview guidelines were adjusted accordingly for the following teams. We started to analyze our data using open coding: we identified managerial roles, contextual factors, and effects on team empowerment dimensions in the interview transcripts. We did not limit or predefine our coding scheme regarding team-external management. The coding scheme was continually adjusted by comparing existing codes in one team with both the other teams and data from observations and internal documents. For example, internal role descriptions and training documents were compared to the set of management roles that both TEMs and

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[2] See https://tinyurl.com/hfsjm3yr.

team members mentioned in the interviews. In a next step, the resulting coding scheme was refined after several iterations: some codes were combined, others dropped, and new ones emerged. An overview of first- and second-level codes as well as exemplary quotes can be found in the OSF online appendix.

For team empowerment, we used an a priori construct based on its four characteristics (Kirkman & Rosen, 1999; see Section 2). In addition, we used codes – (strongly) positive to (strongly) negative – to mark how participants assessed the effect of TEMs' behaviors on team empowerment. For example, a participant described how a TEM tried to influence the team's prioritizing process but failed due to strong resistance as team members felt that the TEM imposed on the team's decision-making authority. We registered this instance as task-related management having a strongly negative influence on autonomy.

Subsequently, we started the within-case analysis: for each team, we prepared a case write-up that summarized our understanding of a product or project description, the organizational environment, team processes, management involvement, team-internal and -external contexts, and the perceived state of team empowerment. We created a visualization of organizational structures per team (see the appendix on OSF), comprising all management layers beyond the team context, and matched team-external management roles to the individuals that engage in these roles for each team.

In the cross-case analysis, we compared our findings per teams and identified similarities and differences between the teams. We analyzed how team-external management configurations influence team empowerment dimensions across teams and extracted patterns. If we could find similar patterns across more than one team, we registered a potential relationship between team-external management and team empowerment.

4 Findings

4.1 Model of Team-External Management of ASD Teams

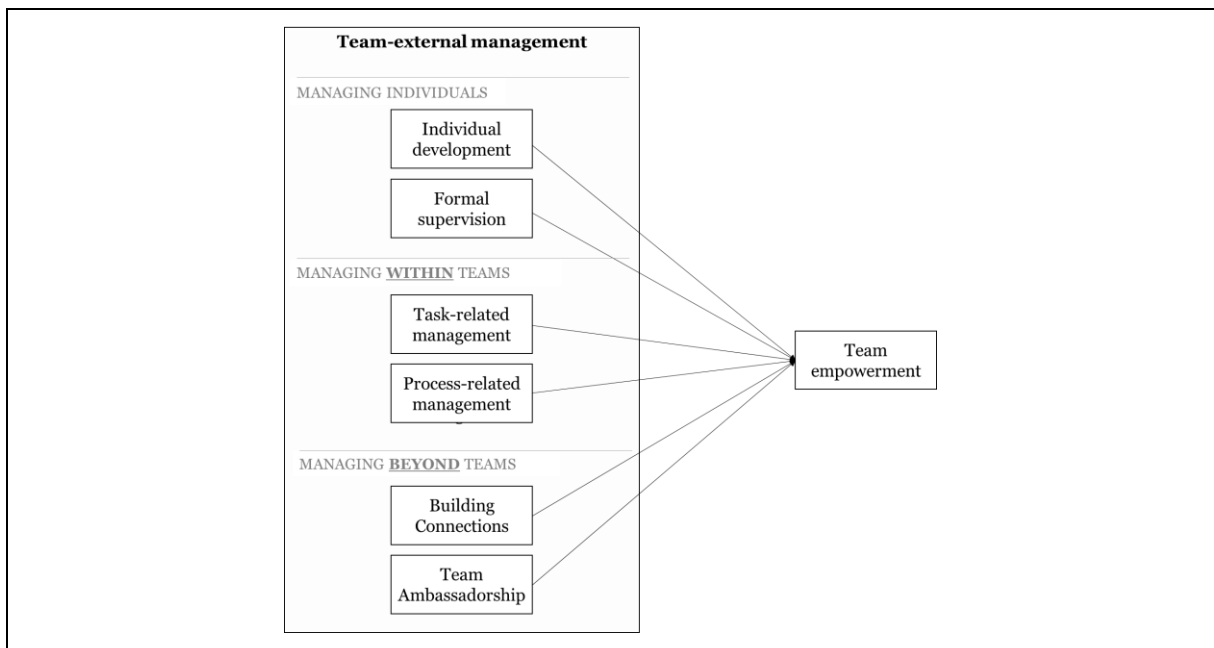Figure 1 summarizes as our main finding a proposed model of team-external management of ASD teams.

Figure 1.   Model of team-external management of ASD teams.

In sum, our data suggests that the way in which TEMs interact with ASD teams can differ vastly, even within a single organization. Despite common management guidelines and standardized training, TEMs invest their time to varying degrees in different activities related to management, which we categorized into three main types: (1) *managing individuals*, (2) *managing within teams*, and (3) *managing beyond teams*. We found supporting evidence that the form of team-external management (i.e., the categories of team-external management those individual managers prioritize in managing a team) considerably influences team empowerment.

4.2   Managing Individuals

The first group of tasks that all TEMs at INSUR regularly took on (but each to varying degrees) is *managing individuals* through (a) *formal supervision* and (b) *individual development*. For example, formal supervision includes the handling of staffing, overtime, requests for time off, compensation, or feedback and performance management. Individual development refers to managers encouraging or initiating personal development, giving career advice, organizing and approving training, and individual coaching or mentoring. In all cases, this type of management is directed at the team members as individual employees. These tasks are explicitly part of a manager's responsibilities according to INSUR's policies, especially the encouragement of personal development.

Formal supervision if often considered the most basic managerial responsibility, and several interviewees first named some or all those tasks when asked which responsibilities their direct managers regularly took on:

"[The role of our manager], it's a disciplinary one, because the three of us are all part of her business unit. Sure, she does all the stuff like jour fixes, goal-setting, typical HR or organizational topics." (PART1-2)

Neither employees nor team-external managers stated that much time is spend on such tasks. Furthermore, while formal supervision is often the first aspect of management that comes to mind and one that is seen as essential or inevitable, it is seldomly considered a prestigious part of management that managers take pride in:

"Sure, I'm doing all the disciplinary stuff. But that's not why I wanted to become a manager, I enjoy working on the topics. People notice well-done projects, not well-written performance reviews or something." (TEM2-1)

Increasingly, some parts of formal supervision are transferred to the team directly. This change is often informal at first: regarding requests for time off, all the teams stated that the role of direct managers is a formal one at best while the team members discussed the vacation schedule among themselves in the first place. Still, the direct manager must officially approve time off in most cases. Partly, this responsibility was also officially transferred. For example, one team reported that requests for time off are no longer officially approved by a manager but by the team members themselves. Similarly, the role of TEM for staffing is partially transferred to the team: at the very least, team members are included in job interviews across all interviewed teams today, in some cases the teams are also in involved in creating job postings.

Considerable differences between managers and teams can be observed for the performance management process. Over the past years, INSUR has established quarterly to biannual feedback meetings (instead of annual feedback) between individual employees and their direct supervisors in which a performance evaluation and the definition of objectives for the next three to six months take place.

The official evaluation influences variable salary components for a very small part of employees, but it has no direct consequences for most team members. Accordingly, most interviewees indicated that they do not benefit from or attach importance to the performance management process:

"My boss told me that I could come up with goals and we could talk about it at the end of the quarter and that's it. You just notice that this goal setting process is useless. At the end, we all know where we're going and that's it." (TEM5-2)

Increasingly, the defined objectives are team goals instead of individual goals. None of the interviewees disagreed with this practice as it simplified the process and reduced the time that team members needed to invest.

The degree to which managers engage in activities concerning *individual development* varies greatly for each employee. For most employees, managers initiate, organize, and approve training or conference attendances if the development of the individual benefits the team (i.e., if an employee acquires a skill that is necessary or relevant to the team). Less often, managers act as coaches, mentors, or sparring partners concerning individual development. The individual's career aspirations and, often correspondingly, their age appear to influence the desire or need to include a manager in discussions around trainings or career advancement. Several interviewees strongly rejected the assumption that their manager functions as a mentor or coach altogether:

"I certainly don't see her as a mentor. If I need a sparring partner or something, I would talk to [her boss] in the IT unit or upper management on the business side." (PART1-2)

Overall, managers' estimates on the time that they invest in individual development are much higher than employees'. Potentially, this mismatch results from the fact that managers often invest a lot of time in developing a select few employees that actively seek advice and counselling.

4.3 Managing Within Teams

The second category of team-external management activities refers to the *management of or within teams*, namely through (a) *task-related management* and (b) *process-related management*. Task-related management describes the way managers influence requirements by prioritizing work items or posing tasks themselves. Process-related management includes a manager's interference with the inner workings of a team, specifically the way in which requirements are gathered and organized, work is planned and distributed, team members communicate, or stakeholders are managed. For both task-related and process-related management, the managed entity is not the individual employee, but the team.

Before ASD methods were introduced, both task-related and process-related management were a major part of the daily work and standard responsibilities of managers at INSUR. Many interviewees noted that "in the old world" managers had at least veto power for functional decisions, oftentimes they took planning or process organization into their own hands and consulted with the teams in case of uncertainties. Following our data, this dynamic has changed considerably in both theory and practice at INSUR: for task-related management tasks, the product owner (or, in one case, the product owner and the project manager) is officially in charge; for process-related tasks, the responsibility lies with the team itself. While the degree to which TEMs follow these official guidelines differs, a large majority of interviewees agreed that the involvement of the team (including product owners and agile coaches) in formerly managerial tasks has notably increased over the last four years:

"Overall, working at INSUR has definitely changed. Before, when [former manager] was our team lead, he has often asked for our opinion, but now we are just doing it ourselves and so far it's working fine." (PART3-1)

For *task-related management*, TEMs are often faced with a dilemma: while the ASD teams officially organize and prioritize tasks themselves, the managers officially and practically often remain the point of contact for senior management or other teams. Some managers explicitly mention that such requests should be directed to the team (or to the product owner), but this process remains difficult to enforce due to conflicting standards and structures across departments and – sometimes – resistance from upper management. As a result, TEMs are often expected to ensure that certain tasks get done, at times disregarding existing priorities and product road maps.

Conflicts typically arise in two cases: first, INSUR is currently undergoing a major digital transformation including the decommissioning of legacy systems and a large-scale move from self-hosting to cloud computing. For this topic, TEMs often act as stakeholders that communicate non-adjustable deadlines for overarching infrastructure or architectural changes:

"We have massive technical debt that we need to tackle. At the moment, we must migrate to the cloud, like yesterday. And [our manager] is talking to all our stakeholders and saying 'No, we can't do your stuff right now'. She knows that we need a good, stable basis first." (PART4-3)

Second, a new quarterly planning process for the IT teams has been established at INSUR in 2019 to map out the high-level tasks that a team takes on over the next three months. Nearly all team members criticize this process in the interviews due to its decision-making mechanisms: while teams are generally expected to decide themselves which tasks can be done based on project priorities and the team's availability in the upcoming quarter, every team has experienced an instance in which TEMs have overruled team decisions and sometimes pressured the team to take on additional work that it has not committed to in the initial process. These decisions are typically made by senior management instead of direct supervisors:

"The downside [of the quarterly planning process] is that the top managers, the department managers, make the final decision. My boss acts like the senior product owner. We need to tell it like it is." (TEM5-3)

For *process-related management*, TEMs more commonly refrain from interfering in team decisions. If they still do interfere, managers are often confronted with major resistance from the teams. Interestingly, all teams that were interviewed – regardless of their ASD methodology of choice, years of experience, or other characteristics – referred to themselves as "troublemakers", "rebels", or "inconvenient":

"We were one of the pilot teams and we just figured it out ourselves. It's not like we're doing Scrum by the book today. We just choose whatever works for us. And I know that some people think that we're difficult, but I think it's good. But we certainly have some kind of reputation." (PART2-3)

The teams visibly take pride in determining their work processes themselves and applying methods, tools, and practices as they see fit. Members of two of the teams indicated that they have experienced disagreements with their direct supervisors concerning their choice of ASD methodology, specifically Kanban instead of Scrum. In those cases, the managers had explicitly or implicitly voiced their preference for Scrum, but both teams decided to stand firm on their decision to practice Kanban in spite of managerial opposition.

"Right now, we are deadlocked. We know that he prefers Scrum but it just makes no sense for us. [...] At the end, we are the team and we need to work with it. If he accepts it or not." (PART3-2)

One notable exception, when team have little discretion to design their own process, is the quarterly planning process: the process was established for all IT teams and participation is mandatory. Although most interviewees acknowledged that the quarterly planning increases transparency and predictability across teams, the process entails considerable preparatory efforts and enforces a relatively strict cadence in which work is done and results are assessed. Thus, the teams are required to establish new procedures to prepare the quarterly planning, commit in advance to complete a set of tasks, and adjust to the externally imposed timeline.

4.4   Managing Beyond Teams

The third category of team-external management activities – *managing beyond teams* – comprises (a) *building connections* and (b) *team ambassadorship*. Building connections refers to activities in which the manager facilitates or supports the forming of a team's external connection to other teams or individuals to improve communication and cooperation across the organization. Team ambassadorship includes managerial actions to externally promote a team's successes, communicate and solve its challenges, and iteratively shape organizational processes and structures to allow the team to work effectively. In most cases, managing beyond teams refers to the whole team, but the team is often represented by individual employees acting as a point of contact for the team.

The activities of managing beyond teams have been a part of managers' responsibilities at INSUR since before the agile transformation had started. Generally, interviewees often described respective behaviors when they talked about the positive aspects, or "good things", that their managers do:

"It's not like someone makes her do that, it's just her personality. She's really good at networking. And it's not like our project would fail without her, but she makes stuff easier for us. [...] She has opened a lot of doors." (PART1-3)

Nevertheless, these activities appear to be a responsibility that managers have on the side, or on top, of management imperatives such as formal supervision. If managers neglect their duties to handle overtime or staffing necessities, they may be reprimanded; if they do not engage in building connections or acting as the team's ambassador, there are no immediate consequences.

Building connections refers to a manager's creation of relationships and networks from or to the team. On the one hand, teams experienced their managers as facilitators in setting up groups of teams that tackle similar problems. For example, one team's manager had noticed that several teams in her organizational unit worked on disconnected infrastructure components and had too little regular communications, which resulted in frequent rework. She consulted with the team members and led an effort to establish periodic planning and review meetings across the five teams that ultimately allowed for more efficient and streamlined work for all teams involved. In other cases, TEMs often referred teams to the correct contact persons for specific topics or started the conversation between their teams and others. Vice versa, TEMs also often ensure that team members receive necessary information. For example, several managers have set up biweekly or monthly meetings in which they share news from other departments, staffing updates, upcoming changes, or human resource-related information.

"She organizes those department meetings, like once a month. And I like those a lot, because she is very structured and speaks briefly, comes to the point. [...] She always summarizes the highlights of what goes on at INSUR, like the big picture." (PART1-4)

Overall, however, not all teams rely on their TEMs to build connections for them: especially if teams or individual team members have been working on a product or project for a long time, they are often more knowledgeable than their managers on who to contact to resolve issues or create attention. Nevertheless, all interviewees appreciated a manager's efforts to create organization-wide information networks and keep all parties in the loop.

If TEMs engage in *team ambassadorship*, they act as both promoters and problem solvers. Regarding team promotion, some managers make a point of habitually encouraging team members to communicate success stories themselves. As several interviewees stated, product owners were often invited to present the team's work in front of senior leadership or executive committees or publish intranet articles on completed milestones. This approach is highly appreciated by team members as managers do not take the credit for the team's work but rather shine the spotlight on teams themselves:

"[In the quarterly planning] there's a management review and for a long time, we as product owners were not allowed to be there. And at the end all the managers were like 'Look at what we achieved'. But actually, we, the teams, did that. [...] [My manager] criticized that like a thousand times. And now, finally, we can attend the review, we're part of the decision." (PART4-2)

Concerning the communication of problems and issues that arise, most managers take a different approach by gathering information on issues and presenting them to upper management or the responsible decision-makers. For example, one team described how one of their supervisors attended a team meeting in which the team noticed that a deadline for decommissioning an outdated software could not be met, presented the information in an architectural board meeting, and reached a compromise that worked for both sides. The problem-solving approach is not necessarily limited to issues concerning only one team. As an example, several developers across teams criticized that they regularly lacked administrative access rights to adjust settings on their own notebooks, which slowed teams down. One interviewee stated that their supervisor acted after learning about the issue and set up a working group to tackle the problem on an organization-wide level:

"We approached her so that she could bring the issue up to management. To choose the right language, have them understand our issue. She is some kind of communication channel to INSUR for us." (PART2-4)

4.5   Team Empowerment

In sum, we have identified patterns in how TEMs' actions and behaviors influence team empowerment. These relationships are not necessarily unambiguous: while our data suggests that team-external management activities have a positive influence on some dimensions of team empowerment, that is not

necessarily true for all dimensions. Table 2 summarizes the observed relationships between the presence of categories of team-external management and the four dimensions of team empowerment (Kirkman & Rosen, 1999).

	Managing individuals		Managing within teams		Managing beyond teams	
	Formal supervision	Individual development	Task-related management	Process-related management	Building connections	Team ambassadorship
Potency	o	+	--	--	+	++
Meaningfulness	o	+	+	o	+	++
Autonomy	-	-	--	--	o	o
Impact	o	o	o	o	+	+
Legend: ++ strong positive influence; + positive influence; o no influence; - negative influence; -- strong negative influence						

Table 2.   Potential relationships of team-external management and team empowerment.

In our data, we have found ample evidence that the first dimension of team empowerment, *potency*, is heavily influenced by team-external management in both positive and negative ways. In particular, managing within teams negatively impacts potency. As managers take over task and process organization they – even unknowingly – signal to team members that they do not trust the team to do it themselves to a degree. Accordingly, the team's feeling of self-efficacy is often affected. One team member describes a meeting in which the direct manager took over a planning meeting unannounced:

"We spent two hours pointing fingers without estimating a single story. And then we had to list our technical debt, again, as we had done for many years. And we did all that so that she had some kind of explanation why we work so slow. Which we actually don't, I think. But she crashed the whole meeting for this." (PART4-4)

On the contrary, team-external management enhances potency if managers help teams build inter-team connections that can help them work more effectively (e.g., finding specialists for one-time topics) or support individual employees in developing skills that in turn help the team as a whole. The positive effect on potency is especially salient for team ambassadorship. If managers take initiative to regularly praise and promote a team's work, the team feels valued and capable.

Concerning *meaningfulness* as the second dimension of team empowerment, the relationship is similar for the categories of managing individuals and managing beyond teams. If managers take actions to develop, connect, and promote a team, the team feels like its work must be worth such an investment; thus, managers create a sense of importance simply by engaging. In the same sense, a certain degree to which managers are managing within teams also appears to positively influence a teams' meaningfulness – in direct contrast to the effect on potency. If managers refuse to engage at all in a team's task-related management, the team does not feel like its work matters for the organization. For example, one interviewee described a situation in which the team had to take a major strategic decision, and a TEM did not invest any time to understand the issue and weigh in on the decision:

"We explained [the issue] in several meetings but he did not take any notes or ask any questions. I didn't feel like he had any interest, but for us, it was a big thing. I mean, we are [a legacy system] and I know it's not the shiny new thing, but we will still be around for some years." (PART3-3)

This may indicate a necessary trade-off that TEMs have to take between meaningfulness and potency, and finding the right balance is challenging – too much task-related management activities have strong detrimental effects in terms of perceived restrictions, too few may have a negative signaling effect of "I don't care" instead of the maybe intended attitude of autonomy and laissez-faire.

This is directly related to the findings as regards actual *autonomy*. Obviously, a high degree of team-external management of any category understandably has a negative or no influence. One interviewee summarized the involvement of their manager in day-to-day operations as follows:

"Sometimes, she asks how she could help us solve problems. But apart from that, we are pretty happy to be independent. As little interference as possible." (PART5-6)

In fact, a low involvement in especially task- and process-related management increased the feeling of autonomy and trust in the team's decisions. For example, TEAM4 initially had a monthly planning meeting with all TEMs that was dropped after six months:

"It went from 'following a process' to 'they know what to do'. Today, we do not have this meeting anymore, because they trust us and know that we will come to them if we need any clarification." (PART4-2).

Combined with our findings for potency and meaningfulness, the picture that emerges points to the relationship between managing within teams and empowerment not as clear-cut black-and-white.

For the fourth dimension of team empowerment, *impact*, we could not find any evidence in our data that it is influenced (positively or negatively) by TEMs' engagement in managing individuals or within teams. There are some indications that managing beyond teams is positively related to impact. For example, one TEM encouraged employees of the customer service unit to participate in the review meeting of TEAM1. As the team's objective is to create a system that simplifies and supports customer service, the team highly appreciated the feedback of the employees that actively worked with their system but did not communicate with the team until the manager initiated it. Similarly, one interviewee described how a team of TEMs creates a biweekly newsletter that lists project success stories and often explicitly mentions how much money a team's work saves for the organization or project outcomes such as an increased number of users or user satisfaction.

5   Discussion

We set out to answer our research question and explain how team-external management influences the way in which ASD teams develop team empowerment. We add to team-external leadership theory and the study of creating team empowerment for ASD teams in organizations by proposing a theoretical model and a set as a starting point. Generally, our findings concerning the categories of team-external management are in line with existing research that defines management roles for ASD teams (Hoda et al., 2013; Shastri et al., 2017), though we did not explicitly focus on roles that TEMs should take on for ASD teams but described the status quo of which roles are present in practice. Our data suggests that the relationship between team-external management and team empowerment is complex and depends on several contextual factors. While Rapp et al. (2016) have concluded that external managers, contrary to team coaches, did not significantly influence team empowerment for customer service teams, we did find opposing evidence for our case. These contrasting findings may partly be explained by the different nature of software development teams and the timing of our research, as our case organization was still in the process of reorganizing management structures at the time of the team interviews and guidelines across organizational units varied greatly. Further, ASD teams have more team-external dependencies than decentralized service teams and as such may require more involvement by managers operating outside of a team.

As our study was limited to a single organization, its generalizability is certainly limited to specific contexts. In a next step, our model of team-external management needs to be both refined and empirically tested. Thus, we propose a set of propositions for future testing. Due to the complex influence of team-external management, we expect relationships to team empowerment on the level of individual dimensions in some cases.

Most notably, we have found no indication that autonomy is increased by any form of team-external management overall. On the contrary, in line with existing research our findings suggest that management activities aimed at individuals and teams in general hinder autonomy. The same applies to a team's perceived potency: if TEMs take over decisions that a team would typically make themselves, it can negatively affect a team's feeling of self-efficacy and competence. As a result, we formulate our first proposition as follows:

P1: Activities related to managing of individuals and managing within teams by team-external managers negatively impact potency and autonomy of ASD teams.

Second, we suggest that formal supervision as a central activity performed by managers has no relevance for team empowerment. While team members expect those tasks to be handled and associate formal supervision with TEMs, the questions of who handles such tasks apparently does not matter. As a result, formal supervision is often delegated. In contrast, if TEMs engage in activities to develop individual team members, it could improve a team's assessment of their own skills and their feeling of value and importance for the organization. We thus propose:

P2a: Activities related to formal supervision of team members by team-external managers do not impact team empowerment (neither potency, meaningfulness, autonomy, or impact).

P2b: Activities related to individual development of team members by team-external managers positively impact potency and meaningfulness of ASD teams.

Third, our data suggests that teams appreciate if TEMs build networks between the team and its environment and act as a team champion and problem solver. While those activities do not increase a team's autonomy, all the remaining dimensions of team empowerment may profit from activities in the category of managing beyond teams. Therefore, we suggest the following proposition:

P3: Activities related to managing beyond teams by team-external managers positively impact potency, meaningfulness, and impact of ASD teams.

For practitioners, our research serves as a reminder for organizations that perform large-scale agile transformations to introduce empowered teams that they need to pay close attention to changing requirements on TEMs. Our findings imply not only that engaging in some categories of team-external management can – positively or negatively – influence team empowerment, but also that the failure to assume management responsibilities can hinder team empowerment. Moreover, the dimensions of team empowerment are not affected equally by TEMs' actions. Thus, organizations need to make informed decisions particularly concerning the degree of autonomy that they want to grant ASD teams and change management structures and expectations accordingly. Ideally, our framework can be used as a basis for discussions between teams and TEM, summarizing the variety of actions and behaviors that TEM typically engage in and prompting conversations about the effect that they have on agile teams. Overall, our findings suggest the following: while the degree to which TEMs engage in activities related to managing within teams should decrease (as such activities tend to create conflicts), the managing of individuals and managing beyond teams are still tasks that should be performed by TEMs for ASD teams. Notably, tasks related to formal supervision could be delegated to the team as feasible, at least to some degree, as they serve no purpose for creating team empowerment.

6   Conclusion

Our goal was to gain an in-depth understanding of team-external management of ASD teams. We thus studied the case of a large organization that currently undergoes an agile transformation and has adjusted its approach to team management to accommodate for the needs of agile, empowered teams. We have uncovered evidence that team-external management does have an influence on how agile teams develop team empowerment. On this basis, we have developed a theoretical model of team-external management of ASD teams. As a next step, our model requires refinement and validation through empirical testing in new contexts.

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