

## Secondary Publication



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### **Team autonomy in scaling agility : themes and organizational mechanisms**

Date of secondary publication: 28.09.2026

Version of Record (Published Version), Conferenceobject

Persistent identifier: urn:nbn:de:bvb:473-irb-117369x

#### **Primary publication**

Frey, Julian; Hund, Axel; Beimborn, Daniel; Grewe, Elias (2026): Team autonomy in scaling agility : themes and organizational mechanisms, in: Proceedings of the 30th Pacific Asia Conference on Information Systems (PACIS), Jakarta, Indonesia, Association for Information Systems, [https://aisel.aisnet.org/pacis2026/it\\_strategy/it\\_strategy/15/](https://aisel.aisnet.org/pacis2026/it_strategy/it_strategy/15/).

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# Team Autonomy in Scaling Agility: Themes and Organizational Mechanisms

*Completed Research Paper*

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## Abstract

*Organizations increasingly seek to scale agility, reshaping structures, processes, and roles in ways that fundamentally affect how team autonomy is established and governed. While autonomy is widely regarded as desirable, discussions highlight that its effects depend on how it is balanced with coordination and control, especially in dynamic environments. This underscores the need to understand how autonomy is implemented when agility is scaled across an organization. We therefore examine the question: How are team autonomy governance mechanisms enacted in scaling agility? Based on a 22-month multiple-case study, we identify three themes that characterize how autonomy manifests in scaling contexts: designing cross-functional teams along the value stream, orchestrating dependencies while sustaining discretion, and balancing stability and flexibility as a consequence of autonomy. We further identify four mechanisms through which organizations address these themes. From these insights, we derive propositions for future research and outline theoretical and practical implications for scaling agility.*

**Keywords:** Scaling agility, team autonomy, case study

## Introduction

Scaling agility refers to the process of extending the application of agile concepts (i.e. principles, methods, practices) to other domains of an organization beyond software development and operations (Limaj and Bernroider, 2022) with the goal of increasing the overall organizational agility (Gerster et al., 2020). Practitioner literature (Aghina et al., 2018) and research (Gerster et al., 2020; Limaj and Bernroider, 2022; Mikalsen et al., 2018) suggest that this process requires organizations to structure their workforce (i.e., teams and departments) differently. Agile forms of organizational design (Gerster et al., 2020) have emerged as novel organizational structures intended to support the scaling of agility. These new structures establish autonomy as a central organizational design principle (Gerster et al., 2020; Limaj & Bernroider, 2022). Team autonomy constitutes a central design principle of scaling agility (Frey, 2023), as it enables decentralized decision-making in cross-functional teams while simultaneously creating the need for governance mechanisms that ensure coordination and alignment at scale. To improve productivity, organizations increasingly ask employees to solve tasks in novel, agile ways and reinforce a focus on value streams (Pries-Heje and Krohn, 2017; Rozas et al., 2025). Such shifting practices—reflected in new structures, processes, and behaviours—underscore the centrality of team autonomy in large-scale agile

organizing (Gerster et al., 2020). Yet, while agility is frequently portrayed as universally desirable, the literature has rarely examined its differential effects across organizational contexts, leaving open how much autonomy incumbent firms with legacy infrastructures should grant (Lee and Xia, 2010; Tumbas et al., 2018). Existing studies acknowledge that their insights often rely on “snapshots” of agile transformations (Gerster et al., 2020; Limaj and Bernroider, 2022), predominantly emphasize the benefits of autonomy (Gerster et al., 2020; Limaj and Bernroider, 2022), or address its challenges only marginally (Carroll et al., 2023). Even research that identifies autonomy as a key antecedent of agility provides limited clarity on how it actually operates in practice (Alami et al., 2023). As agile approaches increasingly diffuse into physical product environments (Werder and Maedche, 2018) and autonomy has been shown to generate tensions in agile organizations (Frey et al., 2021), a more systematic examination of its role seems sensible. This is all the more important as research has shown that successful digital transformation requires deep integration between IT and business functions, supported by cross-functional collaboration mechanisms and evolving organizational roles that align technological capabilities with strategic objectives (Yan et al., 2025).

At the same time, autonomy as a key pillar of agile structures often clashes with the deeply ingrained hierarchical arrangements of incumbent firms, which are characterized by clear departmental boundaries, defined authority relations, and formalized decision-making processes (Drechsler et al., 2020). As organizations pursue digital transformation, governance structures and leadership decisions play a critical role in aligning decentralized teams with strategic objectives (Li et al., 2021). Similarly, achieving effective business–IT alignment and digital innovation requires organizational mechanisms that coordinate distributed actors while maintaining strategic coherence (Wei et al., 2023). At the same time, because insufficient team autonomy has been shown to impair performance in development contexts (Gerwin & Moffat, 1997) while outcome control provides essential goal alignment amid the flexibility of agile methods, it becomes crucial to examine how autonomy is exercised and sustained under outcome-oriented control regimes —particularly since agile approaches tend to be most effective under outcome control rather than self-control (Maruping et al., 2009). Such an examination is central to understanding how effective teamwork can be achieved in dynamic software development environments. As the dual forces of inertia and transformation shape the design and coordination of agile teams across distributed settings, understanding how team-level discretion and coordination emerge becomes important for theorizing organizational adaptation in large-scale agile environments (Ashrafi et al., 2025).

In analysing team autonomy, it is therefore crucial to understand how specific autonomy mechanisms can both facilitate and hinder scaling efforts in incumbent organizations. Such an examination is needed to clarify the degree and design of autonomy that best supports their pursuit of extended agility. This motivates a more in-depth investigation of team autonomy in scaling contexts over time, leading to the following research question:

### **How are team autonomy governance mechanisms enacted in scaling agility?**

To answer this question, we conduct a qualitative case study series with 37 interviews in three organizations for 22 months to answer this question and use established team autonomy mechanisms to analyse how exactly team autonomy manifests itself in scaling agility (Gerwin and Moffat, 1997). We show that a balanced facilitation of team autonomy seems helpful and extend established team autonomy mechanisms. At the same time, we focus on a concrete, topical issue of incumbent firms’ IT organizations (i.e., scaling agility). We derive four propositions that can be usefully applied to further research and show how previous team autonomy mechanisms play out in scaling agility. In the following, we go into the background of scaling agility and team autonomy, followed by the methodology, and present our results before concluding with the discussion.

## **Background**

Our examination of related literature reveals a paucity of research addressing the underlying autonomy characteristics within scaling agility. This deficiency of attention not only constrains our understanding of how team autonomy is expressed but also hinders our ability to discern potential mechanisms that can address the issues related to team autonomy within scaling agility. In the following, we take a closer look at the current state of research on scaling agility before moving on to the state of knowledge on team autonomy.

## Scaling agility

Scaling agility refers to expanding the implementation of agile concepts (i.e., principles, methods, practices) to other areas of an organization beyond just software development and operations (Limaj and Bernroider, 2022). Agile concepts have significantly impacted the software development industry and were designed to increase delivery speed and maximize business value (Austin and Devin, 2009). Organizations are now looking to implement agile concepts at a larger scale within software development units and across other parts of the organization, such as product development and marketing. These organizational designs are called scaled-agile organizations (Frey et al., 2021; Gerster et al., 2020) – a phenomenon that Gerster et al. have described as “agile forms of organizational design are adopted not only by IT, but successively also by business units and in contexts outside information systems development” (Gerster et al., 2020, p.1). Often, implementing scaled-agile organizations involves combining a more comprehensive range of previously less connected roles, merging business and IT departments, and forming cross-functional teams from product development to sales (Paasivara et al., 2018). These cross-functional teams, known as BizDevOps teams, bring together individuals with diverse educational backgrounds and work cultures, including developers, marketing, and salespeople (Lohrasbinasab et al., 2019).

At the same time, scaling agility has been conceptualized as a wicked problem (Roschnik & Missioner, 2024). These structures can present challenges for individual team members or teams. Previous research has highlighted these challenges, with studies such as Gandomani and Nafchi (2016) examining people- and role-induced challenges in this context, including coordination and communication issues. Other studies have found challenges concerning coordination and the consequences of misalignment (Bick et al., 2018), outcome quality (Alsaqaf et al., 2016), the temporality of the processes (Chen and Lee, 2023) or various time complexities (Gerster et al., 2021). Lastly, Gregory et al. (2016) address ways to overcome reservations about scaling agility. In the context of most of these works about scaling agility, research hints at team autonomy as a crucial underlying factor. For instance, Chen and Lee (2023) see team autonomy as an origin for the temporality of the processes, making it a promising angle to look at scaling agility. We position scaling agility as a form of digitally enabled organizing in which team autonomy governs the coordination of software development and IT–business integration. In this context, team autonomy governance mechanisms are required to ensure the associated goals with scaling agility can be achieved.

## Team autonomy

Team autonomy, the discretion in making job-related decisions (Hackman and Oldham, 1980; Klein, 1991), is critical in all agile concepts (Stray et al., 2018). A high team autonomy distinguishes agile concepts from the traditional waterfall models of digital product development. Implementing a high team autonomy has been generally linked to a “clear well-communicated model of the development process, a freezing of design revisions, and policies that encourage managers to support the team rather than interfere in its decision making” (Gerwin and Moffat, 1997, p. 1275). In scaling agility, a cross-functional team coordinates its activities autonomously (Gerster et al., 2020). Given the constant flow of information among team members regarding the evolving product, they can decide what and how to develop from the backlog. Current research on team autonomy suggests that team autonomy positively affects team performance (Ramasubbu and Bardhan, 2021) and satisfaction (Robert and You, 2018). These studies have found that when teams are given greater autonomy in decision-making and task execution, they are more likely to be engaged, motivated, and committed to achieving the organization's goals. Moreover, a study by de Dreu and Weingart (2003) found that team autonomy positively affected creativity and innovation. Another study found that team autonomy increased job satisfaction and reduced turnover intentions (Huang, 2011). Similar results have also been identified for general agile methods (Laanti et al., 2011).

One reason for these positive effects can be explained by the teams' higher psychological safety due to the increased autonomy (Alami et al., 2023). Autonomy is achieved through an informal contract between management and teams. This contract is expressed through trust by management on the one hand and the meeting expectations by the teams on the other hand. At the same time, it can be seen that although teams have psychological safety, they do not have a high level of team autonomy. This indicates that a better understanding of team autonomy seems all the more relevant in scaling agility.

While team autonomy has been found to have positive effects, it is essential to note that it also has potential drawbacks. For instance, excessive autonomy can lead to decreased accountability, reduced collaboration, and suboptimal decision-making (Langfred, 2007). Therefore, organizations must balance providing teams

with sufficient autonomy and maintaining necessary levels of control and oversight. In the context of scaling agility, team autonomy is generally strongly encouraged in practice by the teams themselves and management. However, Carroll et al. (2023) also point out potential difficulties about team autonomy in their study. They call it a "double-edged sword" (p. 282), as it often goes hand in hand with micro-management in large organizations by implementing numerous metrics. This observation suggests the difficulties with team autonomy, but the specific triggers for the negative role of team autonomy are not specifically addressed. Other studies show that the context is also relevant to whether team autonomy works well. For instance, in new product development, technological turbulence mediates the relationship between team autonomy and performance (Chen et al., 2015).

Adjusting for the right degree of team autonomy is vital for successful teams. Research suggests that flexible and adaptive teams can help organizations respond to changing business needs and compete in dynamic environments (Lee and Xia, 2005). Studies have found that team flexibility and reorganization ability can improve productivity, performance, and innovation. For instance, a study by Argote and McGrath (1993) found that flexible and adaptive teams were more likely to be successful in complex and rapidly changing environments. Other studies find that team flexibility improves problem-solving capabilities and innovation (Li et al., 2011; West, 2002). However, it is also important to note that flexibility can have ambiguous outcomes. For instance, the same study that found "teams experienced and responded more extensively to business changes than technology changes" also found that "they were much less efficient in dealing with business changes than technology changes" (Lee and Xia, 2005). Therefore, organizations must carefully consider the trade-offs and implement measures to manage the potential downsides of team autonomy expressed through autonomous and flexible teams in scaling agility.

## Methodology

Organizational structures emerging during digital transformations (such as scaling agility) are inherently emergent, context-dependent, and fluid. Their adaptability and constant evolution make them a challenging phenomenon to study. A qualitative analysis approach can be employed to investigate the issues at hand to gain a more comprehensive understanding of the potential drawbacks of these increasingly popular digital structures (Levina, 2021; Monteiro et al., 2022).

**Table 1. Case Descriptions**

| Case  | Setting                                                                                                                                                                                                                                                                                                                                                                                                          | Industry             | Interviewees                                                                            |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------|
| Alpha | Alpha is active in telecommunications and has implemented scaling agility to secure its competitive advantage in a liberalizing market environment. Thus, products were to be thought of more from the customer's point of view, and new requirements were to be responded to more quickly. Stringent internal challenges concerning employee protection and hierarchical thinking were particularly pronounced. | Telecommunications   | 1 senior manager<br>3 product owners<br>1 regular team member<br>1 coordinating role    |
| Beta  | Beta is a semi-monopolistic software provider in highly regulated contexts, focusing on tax and accounting solutions. They started their novel way of organizing four years ago.                                                                                                                                                                                                                                 | Information services | 2 senior managers<br>2 product owners<br>3 regular team members<br>1 coordinating role  |
| Gamma | Gamma is active in the financial industry and has implemented scaling agility to counter increasing competitive pressure created by customer demand for omnichannel service and the emergence of new purely digital competitors.                                                                                                                                                                                 | Financial services   | 2 senior managers<br>3 product owners<br>2 regular team members<br>2 coordinating roles |

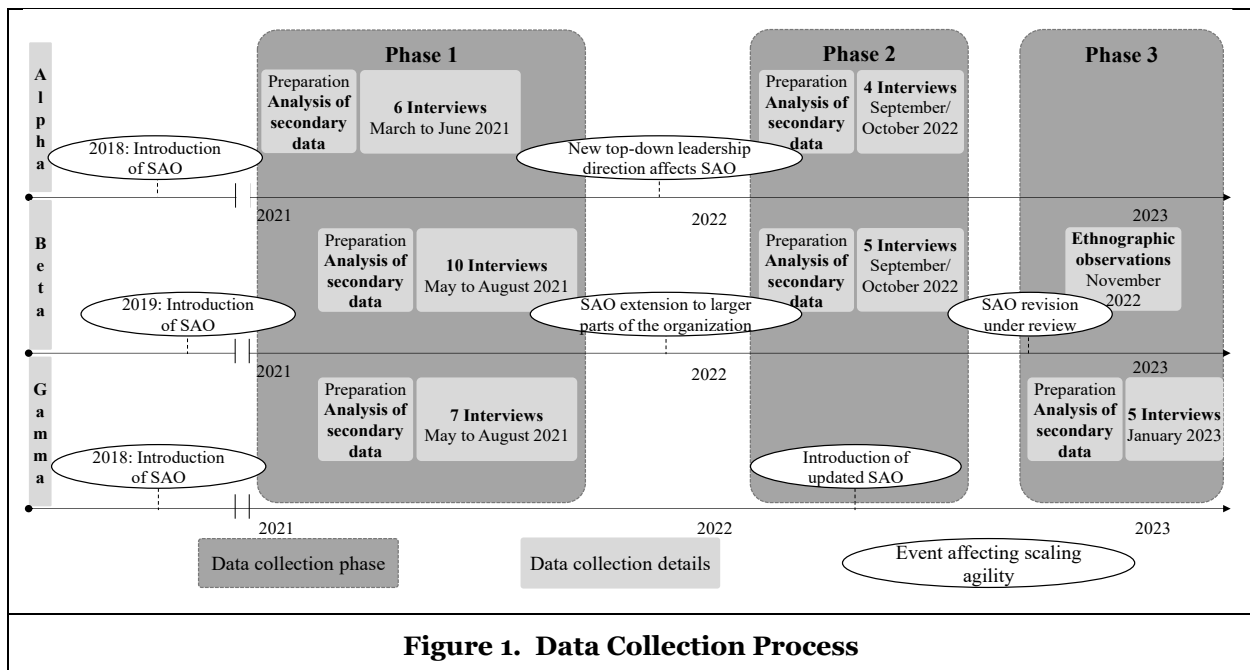
In this research, we have adopted a common process design that involves selecting cases from various settings related to the central phenomenon being studied (Eisenhardt, 2021). This approach allows for

selecting theoretically relevant cases where scaling agility is implemented, providing a deeper understanding of the phenomenon (Eisenhardt, 1989). Table 1 provides an overview of the three cases, specifies their industries and the roles that were interviewed during the case study series. The following sections outline our data collection and our data analysis approach.

## Data collection

In order to gain a comprehensive understanding of the perspectives of the teams and individual roles involved in scaling agility, we primarily conducted semi-structured in-person interviews to collect first-hand accounts of the implementation of scaling agility (Yin, 2014). The interviews focused on the general benefits and challenges of scaling agility, the particular changes in terms of collaboration, and how autonomy and coordination are changing compared to how companies were previously structured. The interviews were conducted in the mother language of the interviewees, recorded, transcribed and then translated to English. We divided our data collection process into three phases: the exploratory phase, the confirmatory phase, and the update phase. In the exploratory phase (Phase 1 in Figure 1), we always first conducted 1-2 interviews in each case, which informed our sampling and allowed us to identify relevant roles and contexts (e.g., industry and company size) to analyze and then conducted the additional interviews within this phase. In the confirmatory phase (Phase 2 in Figure 1), we conducted interviews 12 months after the first phase to validate our findings and track changes over time. Shortly after, we closed our data collection with an update phase (Phase 3 in Figure 1) where we conducted additional interviews in case Gamma and on-site observations in case Beta.

Overall, we talked to 23 individual interviewees, to 14 of them twice (one time in Phase 1, and one time either in Phases 2 or 3). Interviews lasted between 40 to 90 minutes. To understand the changes concerning team autonomy in scaling agility more comprehensively, we interviewed persons with various roles (e.g., development team members, product owners (PO), scrum masters (SM), managers, and further coordinating roles). The interviews in the Phase 1 were thematically broad, aiming to understand the process of scaling agility, its challenges and the structural changes underlying scaling agility. In contrast, the interviews in Phases 2 and 3 were more focused on changes between the phases and distinct features of scaling agility as a process hand in hand with structural changes. We supplemented our data with on-site visits at Beta, including participation in 15 internal meetings – from daily team meetings to strategic meetings covering employee survey results and strategies for the further organizational development of scaling agility. These immersive endeavors helped us to get an improved and refined picture of scaling agility, its challenges, and its effects on teams and individuals firsthand. The observational data was captured in field notes and transcribed.



**Figure 1. Data Collection Process**

We used additional data sources such as organizational charts, company descriptions, and white papers to supplement our observations. These sources helped us to prepare for the interviews, to confirm time-related information regarding different cases and assisted in cross-checking our research findings.

## Data analysis

Following the transcription of interviews, a systematic coding process was employed using MaxQDA. We engaged in a mixed iterative coding process according to deductive qualitative analysis (DQA), using a typical pragmatist approach for the *themes* and a grounded theory approach for the *mechanisms* to address the themes (Charmaz, 2017; Gilgun, 2019). Our method involved iterative analysis and data collection. We developed a preliminary research question and theoretical ideas at the beginning of our project but remained open to the emergence of other significant research themes (Charmaz, 2014; Corbin and Strauss, 2015). For the first part of the analysis, initially, the coding process for the themes was loosely structured. However, by abstracting codes and forming a multi-level coding system, we achieved greater clarity and clearer delineation of autonomy themes. After the coding of relevant passages to team autonomy was completed, all codes were merged into higher-level themes that connected the codes. For an exemplary coding table see Table 2. A second, independent round of sorting of the codes was performed by the second author and strengthens the analysis' robustness.

| Table 2. Exemplary Coding Table for Autonomy Themes Analysis          |                                                     |                                                    |
|-----------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------------------|
| Direct quote                                                          | First-order codes                                   | Second-order theme                                 |
| "autonomy works well when the level of dependencies... is manageable" | Autonomy depends on manageable dependencies         | Dependency orchestration while sustaining autonomy |
| "I have a huge orchestration now with 500 instruments"                | Increasing complexity of orchestration across teams |                                                    |
| "there are always too few of them [who know what fits together]"      | Lack of actors with system-wide overview            |                                                    |

For the analysis of the mechanisms, we use Gerwin and Moffat's mechanisms as a basis. They helped us to show precisely how the team autonomy mechanism plays a role in successfully implementing scaling agility in scaled-agile organizations. The mechanisms are (a) a well-communicated model of the development process, (b) freezing of design revisions and (c) policies that encourage managers to support the team rather than interfere in its decision-making.

This conceptual framework underpins a nuanced exploration of the mechanisms underlying team autonomy in scaling agility and lets us systematically link statements to theoretical mechanisms, thereby addressing our research question of how team autonomy facilitates scaling agility. Each transcribed interview underwent meticulous scrutiny, with pertinent statements first summarized into abstracted codes and then categorized into either of the three mechanisms. For the categorization of *a well-communicated model of the development process*, we have followed the rule of putting all statements that revolve around the shared understanding or lack thereof and communication and cooperation topics into this category (Gerwin and Moffat, 1997; Wheelwright and Clark, 1992). For *freezing of design revisions*, we have put all statements that deal with the frequency and importance of foreseen and unforeseen changes in the product development and operations process into this category (Gerwin and Moffat, 1997). Lastly, for *policies that encourage managers to support the team rather than interfere in its decision-making*, we have put all statements concerned with managers' interactions with their teams, how they come up with decision-making, and manager interventions into this category (Gerwin and Moffat, 1997). Table 3 shows an exemplary coding table. We present the main findings of our research in the following section.

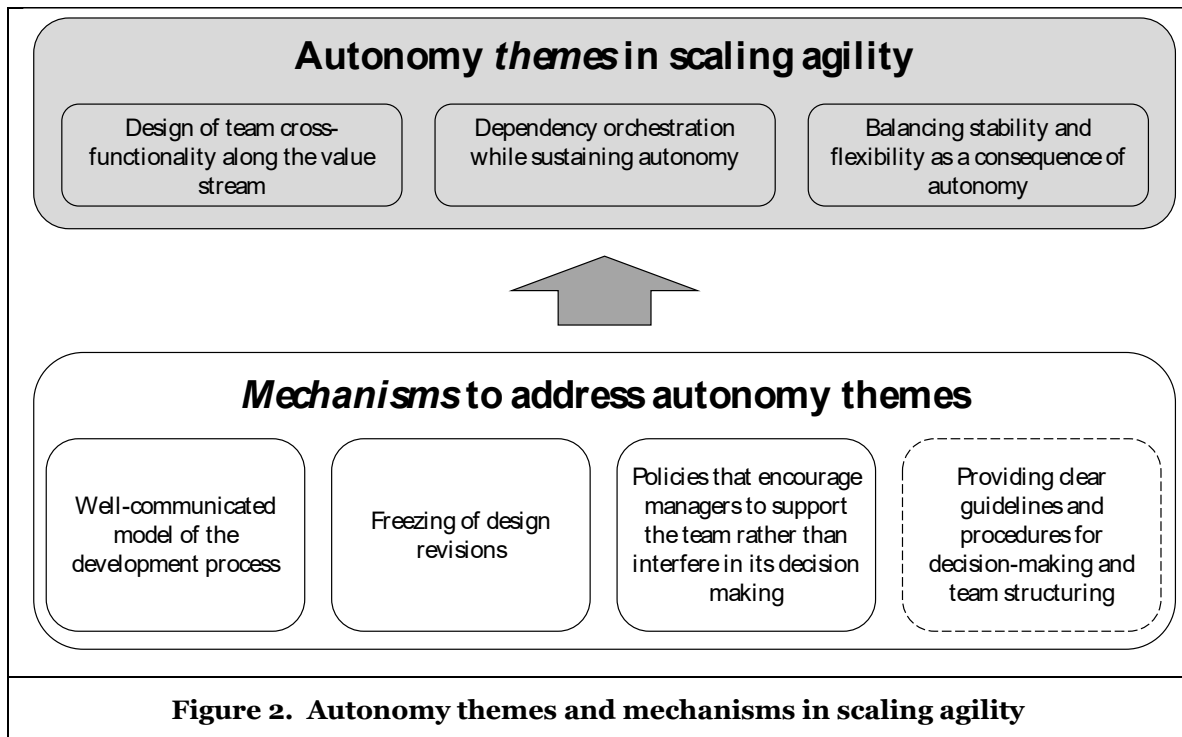
| <b>Table 3. Exemplary Coding Table for Autonomy Mechanisms Analysis</b>                                          |                                                                 |                                                    |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------|
| Direct quote                                                                                                     | First-order codes                                               | Autonomy mechanism                                 |
| “it must be clear in which cases what happens... who has to be informed”                                         | Need for shared understanding of processes and responsibilities | Well-communicated model of the development process |
| “this model should help teams understand their dependencies... ensure everyone is working towards a common goal” | Need for shared process model to coordinate interdependencies   |                                                    |

## Findings

We identify three themes of how team autonomy affects the scaling of agility, *namely*

1. Design of team cross-functionality along the value stream,
2. Dependency orchestration while sustaining autonomy and
3. Balancing stability and flexibility as a consequence of autonomy.

For each theme, we show how these themes play out and afterward demonstrate how these are addressed within the mechanisms derived from Gerwin and Moffat (see Figure 2 for an overview). We will present these findings, structured along the three themes.



### ***Design of team cross-functionality along the value stream***

Design of team cross-functionality along the value stream refers to organizing teams in a way that enables them to work together seamlessly across different functions and stages of the value stream. This approach aims to improve communication, collaboration, and efficiency, ultimately leading to better outcomes for the organization and its customers.

The design of team cross-functionality along the value stream is crucial for improving communication, collaboration, and efficiency. As one interviewee pointed out, that

“it also depends very much on the willingness of the employees in a particular team to take on responsibility. One thing is that they are allowed to do so, in the sense that: I can take responsibility for things autonomously, make decisions and work on them. But of course, it is also necessary to want to do this.” (Beta, senior manager)

To achieve this, a well-communicated model of the development process is essential, as another interviewee noted: “If you look at it procedurally, it must be clear in which cases what happens, how the teams have to structure themselves. Who has to be informed, and who can be asked? Such things have to be clarified.” (Alpha, senior manager). However, policies that encourage managers to support the team rather than interfere in its decision-making are also necessary, as

“Not all people are happy to have so much freedom. There are quite a few employees who say, 'Watch this. Most of all, I'd like you to tell me now: Yes, do this, this, and this, and I'll knock that off for you. Nevertheless, don't bug me with this whole: Is this more important, or is that more important? My job is not to judge what is more important.’” (Beta, product owner)

A key challenge is striking a balance between autonomy and the pressure of delivering desired functionality, as one interviewee noted: “And that is an element you have to keep in mind so that autonomy does not go down the tubes under a load of desired functionality.” (Beta, team member)

In practice, teams working together for longer tend to develop greater autonomy and self-sufficiency. New teams or teams undergoing significant changes require more reassurance, control, and governance to develop the courage to make decisions for themselves. To maintain agility in the face of enormous demands, it is recommended that agile teams are burdened with no more than half of the pre-prioritization, leaving the rest free to enable decentralized decision-making and promote the desired dynamic.

The impact of designing teams for cross-functionality along the value stream on team autonomy is contingent upon the organizational context, with the potential for both positive and negative effects. On the one hand, team members may experience reduced autonomy as they collaborate more closely with other teams and stakeholders, requiring greater coordination and alignment. On the other hand, cross-functional teams may enhance team autonomy by enabling members to operate more independently with a broader scope of responsibilities and better understanding of the value stream.

### ***Dependency orchestration while sustaining autonomy***

Dependency orchestration while sustaining autonomy refers to managing interdependent tasks across different teams while preserving the decision-making authority of each team. It involves identifying and managing dependencies, ensuring alignment, fostering team collaboration, communication, and trust. Managing team dependency orchestration while sustaining autonomy can be challenging, especially when external dependencies become too complex. As one interviewee noted,

“So autonomy always works well when the level of dependencies you have to manage externally is manageable. If these dependencies become too complex, then autonomy works less well. Then you need some structural framework, for instance the Solution Train, which helps to structure the sorting of these functions.” (Alpha, senior manager)

In Case Beta, the importance of roles orchestrating the various teams was emphasized as the overarching view suffers a shortage when scaling agility. This underscores the need for people with a sound overview to ensure that the orchestration of the teams works well. As one team member put it,

“For this, there will still have to be people with an infinite overview. [...] That's why I don't think it's so much this translation problem from before as it is this: I have a huge orchestration now with 500 instruments, and are they all going to sound together the way I anticipate?” (Beta, senior manager)

Keeping the orchestration of the teams going is a significant challenge, and it is where people who know better what fits together and what doesn't fit together can help. However, our observations demonstrate that there are always too few of such people in each company. As one senior manager noted, “In every company, I've been in, [there are] people who know better what fits together and what doesn't fit together [and] there are always too few of them.” (Gamma, product owner)

One solution to address this shortage of experienced people who can manage team dependency orchestration is establishing a well-communicated development process model which clearly delineates the role of solution trains. A solution train can be understood as a higher-level coordination structure that aligns and integrates the work of multiple interdependent teams and units involved in the development of

complex, large-scale systems (Scaled Agile Inc, 2026). This model should help teams understand their dependencies on other teams and ensure everyone is working towards a common goal. Additionally, policies that encourage managers to support the team rather than interfere in its decision-making can help ensure that the team can work autonomously while still having the support they need from management.

Another solution to this challenge is to implement a structural framework like the solution train – a construct within the SAFe framework that provides a way to coordinate the work of multiple Agile Release Trains (ARTs) toward a shared business and technology mission. This framework can help ensure that the orchestration of the teams works well and that the company can scale agility without suffering from a shortage of an overarching view. The solution train can take over sorting functions when autonomy is less effective, especially when external dependencies become too complex. Therefore, by implementing a well-communicated model of the development process and policies that encourage managers to support the team and by establishing a structural framework like the Solution Train, companies can better manage team dependency orchestration while sustaining autonomy.

### ***Balancing stability and flexibility as a consequence of autonomy***

Balancing stability and flexibility as a consequence of autonomy refers to the challenge of maintaining stability and flexibility in an organization while granting autonomy to its teams. This observation involves striking a balance between allowing teams to innovate and adapt to change while maintaining a stable foundation for the organization's core processes and operations to reap the benefits of a value stream orientation.

The findings suggest that balancing stability and flexibility is a crucial aspect of autonomy in an organization. As one interviewee stated, “developing this kind of team maturity takes three, four, or five years.” Therefore, organizations should implement changes infrequently to allow teams to coordinate blindly and reach full performance. However, the tension arises when activities are highly complex, as people are interested in looking beyond their horizons and may lose motivation over time. In this respect, it is essential to balance having team members work together for an extended period and keeping them motivated. The core of a team must be reasonably stable, with only a 10-15% fluctuation.

The increase in size of an organization can lead to a loss of flexibility and necessitate the implementation of structures that may limit the agility of the organization. As one interviewee noted, “We are now at several hundred, and that then leads to the fact that - yes, that we now also need structures that paralyze us again” (Alpha, coordinating role). Organizations must remain agile, but it is equally essential to have structures that provide stability and ensure that the organization can continue to function effectively.

With the rise of flexibility, team identity may be lost, and team members may feel disconnected from one another. As one interviewee said, “Where is home? In the team, the value stream, or the tribe?” (Alpha, senior manager). It is crucial to establish a sense of identity and belonging for team members, and this can be achieved by having regular meetings to discuss the strategic direction and vision of the organization.

Two possible solutions to balancing stability and flexibility are a well-communicated model of the development process and freezing of design revisions. Having a clear understanding of the development process and the roles and responsibilities of team members can provide stability and ensure that everyone is working toward the same goals. Freezing of design revisions can also provide stability by preventing changes from being made after a certain point in the development process, ensuring that everyone is working with the same design.

One example of how these solutions work well is the following: “We discuss many target pictures and business cases. What is in 5 years, so approximately, which takes us much more flexibility than in the end. Will drift here again than by the necessary structures.” (Gamma, senior manager)

This quote highlights the tension between flexibility and stability organizations face when planning for the future. It suggests that while flexibility is vital for adapting to changing circumstances, too much flexibility can lead to drift and a lack of clear direction. To address this tension, organizations can benefit from a well-communicated model of the development process, which can provide a shared understanding of how design decisions are made and how changes are implemented.

Another solution to address the challenges described could be to provide clear guidelines and procedures for decision-making and team structuring. As stated by one of the interviewees, “If you look at it procedurally, it must be clear in which cases what happens, how the teams have to structure themselves. Who has to be informed, and who can be asked? Such things have to be clarified.” (Alpha, senior manager)

Providing clear guidelines can help ensure that teams understand their roles and responsibilities, which can increase their confidence in making decisions autonomously. Additionally, this can help prevent interference from managers who may not fully understand the team's decision-making process. As one of the quotes suggests, “My job is not to judge what is more important” (Beta, product owner), implying that some employees may prefer to have clear guidelines to follow rather than having to make subjective judgments.

Providing clear guidelines and procedures for decision-making and team structuring refers to the formalization of decision rights, roles, and structural arrangements that specify how teams are configured and how decisions are made within and across teams. In contrast to the mechanisms identified by Gerwin and Moffat, which primarily ensure shared process understanding, stability of development work, and supportive managerial behavior, this mechanism explicitly governs decision authority and structural boundaries in contexts of high interdependence. While a well-communicated model of the development process focuses on establishing a shared understanding of workflows, sequencing, and coordination (Gerwin and Moffat, 1997), this mechanism specifies who is authorized to make which decisions (e.g., defining that product owners have final prioritization authority over backlog items) and how teams are structurally organized to enact them (e.g., prescribing stable cross-functional team compositions aligned to specific value streams).

## Discussion

Our analysis shows how autonomy governance mechanisms are enacted in scaling agility and where it has limits. Using the themes of (1) design of team cross-functionality along the value stream, (2) dependency orchestration while sustaining autonomy, and (3) balancing stability and flexibility as a consequence of autonomy, we show how team autonomy can be characterized in scaling agility. Moreover, we show how a (1) well-communicated model of the development process, (2) freezing of design revisions, (3) policies that encourage managers to support the team rather than interfere in its decision-making, and (4) providing clear guidelines and procedures for decision-making and team structuring can be mechanisms to address these themes. Based on these findings, we consolidate four propositions that set the ground for further research (see Table 4 for details).

### *Proposition development*

Previous research has emphasized the advantages of establishing cross-functional teams in scaling agility (Gerster et al., 2020). Teams are supposed to be more self-autonomous and thus faster and more flexible in product delivery across functions (Limaj and Bernroider, 2022). Team autonomy in this context is perceived to be an enabling prerequisite to achieve cross-functionality. At the same time, recent work cautions that autonomy is not universally beneficial but contingent on organizational context and coordination demands, as its effects materialize differently depending on how decision rights, control, and interdependencies are structured (Alami et al., 2023). Research on agile control further shows that autonomy requires a degree of outcome-oriented alignment to remain effective, particularly when teams face high volatility and must coordinate carefully across functions (Maruping et al., 2009). Based on our analysis, we recognize that cross-functionality has its limits when it serves customer orientation. For instance, many companies that scale agility often closely align their sales and marketing departments with the cross-functional teams but still need to dissolve them into them (i.e., from an organizational structure point of view, they keep these teams in separate departments). The main reason is that customers still prefer having the same contact person across several products. This observation hints that team autonomy is limited in incumbent organizations that scale agility, and thus, we propose the following:

*P1. The degree of cross-functionality confines the extent of team autonomy in scaling agility.*

Research has identified and partly addressed the challenges associated with orchestrating the scaled-agile organization to other parts of the organization (Dikert et al., 2016) and other organizations (Gerster et al., 2020). These findings help us explain how organizational structures can overcome orchestration challenges by allowing for close collaboration and communication and partly abolishing core agile principles altogether (i.e., by separating development and operations again to orchestrate with other organizations). However, our analysis reveals that challenges regarding orchestration even persist within the scaled-agile organization. For instance, we show that while having a sound understanding of the overall organization

and its dependencies appears to be a prerequisite in scaling agility, having this overview in practice is nearly impossible because the dependencies are too much and too complex to be understood by single roles. Our observation shows that while established mechanisms seek to mitigate this challenge, this only works at the cost of team autonomy. Hence, we propose:

*P2. Depending on the size and complexity of the organization, dependency orchestration inhibits team autonomy in scaling agility.*

Research in scaling agility has described team autonomy as a “double-edged sword” because efforts to increase autonomy often provoke micro-management tendencies and hierarchical backlash (Carroll et al., 2023). Scaling agility requires extending agile principles across the organization (Limaj and Bernroider, 2022) and restructuring teams and departments to support new forms of cross-functional collaboration (Gerster et al., 2020; Mikalsen et al., 2018). Although autonomy is positioned as a central design principle in these structures (Limaj and Bernroider, 2022), existing research has seldom addressed how its effects vary across contexts—particularly in incumbent firms constrained by legacy infrastructures and established coordination needs (Lee and Xia, 2010; Tumbas et al., 2018). Our findings show that organizations navigate this tension through concrete mechanisms that structure and guide autonomous work: a well-communicated development model, disciplined freezing of design revisions, managerial policies that emphasize support over interference, and clear procedures for decision-making and team structuring. These mechanisms act as enabling constraints that help reconcile the need for team-level autonomy with the stability required for predictable and coordinated value delivery. Thus, the degree to which autonomy manifests in scaling agility reflects how organizations employ such mechanisms to calibrate autonomy and stability.

*P3a. The degree of team autonomy in scaling agility is shaped by how organizations balance flexibility with structural stability through concrete autonomy-enabling mechanisms.*

At the same time, previous research has established that in scaling agility team autonomy plays a vital, yet challenging role (Alami et al., 2023; Carroll et al., 2023). With our findings, we show how precise mechanisms can be helpful to addressing the ambivalent consequences for team autonomy in agile contexts. More precisely, we show how a well-communicated model of the development process, freezing of design revisions, and policies that encourage managers to support the team rather than interfere in its decision-making as well as providing clear guidelines and procedures for decision-making and team structuring can be helpful to mitigate the negative sides of team autonomy. We propose:

*P3b. Besides established mechanisms, providing clear guidelines and procedures for decision-making and team structuring as a new mechanism enables organizations to address team autonomy themes in scaling agility.*

Based on the proposition development, further research that investigates these propositions in more detail seems fruitful. In addition to the concrete verification and validation of the propositions derived from this explorative study, further interesting research based on the results can be derived, which we list in the last column of Table 4. Concerning our first proposition, for instance, exploring the effects of different cross-functional team set-ups can be a fruitful endeavor. Based on our second proposition, further research that incorporates other parts of the organization or even other organizations into the data analysis seems valuable because it enables us to better understand how dependency orchestration is managed in scaling agility. Regarding the third proposition, further analysis of the balancing of flexibility and stability can provide novel insights into the role of team autonomy. Lastly, the fourth proposition invites further research into the application of the identified mechanisms in various case settings and organizational designs that aim for scaling agility.

**Table 4. Propositions and Further Research**

| Proposition                                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Further research                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P1: Design of team cross-functionality along the value stream                     | Designing teams for cross-functionality along the value stream is crucial for improving communication, collaboration, and efficiency. However, balancing autonomy and the pressure to deliver the desired functionality that the customers demand takes time and effort. Teams should not be burdened with more than half of the pre-prioritization, and policies that encourage managers to support the team rather than interfere in decision-making are necessary to maintain agility. The impact of designing teams for cross-functionality along the value stream on team autonomy is contingent upon the organizational context, with potential positive and negative effects. | <ul style="list-style-type: none"> <li>Examining the relationship between team autonomy and outcomes such as innovation, product quality, and customer satisfaction in scaling agility</li> <li>Comparing the effectiveness of different approaches to managing cross-functional teams, such as top-down governance versus bottom-up empowerment.</li> </ul> <p>Exploring the role of technology in supporting cross-functional teams and enabling team autonomy.</p> |
| P2: Dependency orchestration while sustaining autonomy                            | Managing interdependent tasks across different teams while preserving the decision-making authority of each team is challenging, especially when external dependencies become too complex. To address this challenge, companies can establish a well-communicated development process model, implement policies encouraging managers to support the team, and establish a structural framework like the solution train. These measures ensure that the orchestration of the teams works well and that the company can scale agility without suffering from a shortage of an overarching view.                                                                                        | <ul style="list-style-type: none"> <li>Conducting case studies of organizations that have successfully implemented these solutions and comparing their approaches to those that have struggled.</li> </ul> <p>Surveys or interviews with employees could provide insight into their perceptions of how well their organization manages team dependency orchestration (e.g., solution trains) and what factors contribute to their perception.</p>                     |
| P3a: Balancing stability and flexibility as a consequence of autonomy             | Balancing stability and flexibility is critical for achieving autonomy in an organization. Organizations must strike a balance between allowing teams to innovate and adapt to change while maintaining a stable foundation for the organization's core processes and operations. This necessity can be achieved by implementing changes as infrequently as possible, having a reasonably stable core team, and establishing a sense of identity and belonging for team members. Additionally, a well-communicated model of the development process and freezing design revisions can provide stability and shared goal orientation.                                                 | <ul style="list-style-type: none"> <li>Research can explore strategies for balancing stability and flexibility in autonomous teams</li> <li>Case studies can compare successful and struggling organizations' approaches</li> </ul> <p>Surveys or interviews with employees can provide insight into their perception (i.e., principle driven design)</p>                                                                                                             |
| P3b. Established and new mechanisms enable organizations to address team autonomy | Next to the three first propositions that relate primarily to the team autonomy themes, this proposition focuses on the role of the mechanisms and how they can potentially help address these established team autonomy themes.                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Qualitative and quantitative analysis of the effectiveness of these mechanisms</li> </ul> <p>The validation of these mechanisms in different case settings and organizational designs</p>                                                                                                                                                                                                                                      |

## Contributions

The paper offers theoretical contributions to the ongoing research debate on scaling agility and team autonomy. The analysis presented in this paper sheds light on how organizations manifest team autonomy in scaling agility. Specifically, we identify three themes - design of team cross-functionality along the value stream, dependency orchestration while sustaining autonomy, and balancing stability and flexibility - central to how team autonomy is expressed in scaling agility. Our findings suggest that team autonomy is a multi-dimensional construct that involves careful coordination across different parts of the organization, extending prior research on the specifics of agile forms of organizational design (Gerster et al., 2020; Limaj and Bernroider, 2022) and team autonomy in agile contexts (Werder and Maedche, 2018). By deriving propositions on the role of team autonomy we provide a more nuanced understanding of the underlying themes and mechanisms characterizing team autonomy in scaling agility. We provide a deeper theorization of team autonomy as an emergent property of enabling constraints (cf. Maruping et al., 2009), showing how structured guidance, disciplined interfaces, and decision-making scaffolds sustain autonomy rather than limit it.

Moreover, our analysis highlights the importance of distinct mechanisms to address the challenges related to team autonomy themes. We argue that a well-communicated model of the development process, freezing of design revisions, policies that encourage managers to support the team rather than interfere in its decision-making, and providing clear guidelines and procedures for decision-making and team structuring can be mechanisms to address the underlying themes of autonomy and henceforth help to solve tensions that autonomy causes in scaling agility extending prior research (Dikert et al., 2016; Frey et al., 2021).

By identifying a fourth mechanism, we extend the set of autonomy governance mechanisms proposed by Gerwin and Moffat (1997) and provide a more complete account of how team autonomy is enacted in scaling agility. With this fourth mechanism we can explain better what team autonomy themes can support in scaling agility. In particular, we show that formalized decision-rights and structuring guidelines complement existing mechanisms by explicitly governing decision authority and structural boundaries, thereby supporting the balance between stability and flexibility that is central to scaling agility (Frey et al., 2021). This mechanism can also be effective in other digital transformation phenomena. Further research could investigate this potential effectiveness in other contexts.

Our research also has valuable practical implications. By identifying concrete, applicable mechanisms, managers can specifically address the challenges of team autonomy. For instance, clear communication channels and decision-making processes in enabling teams to maintain autonomy while coordinating with other parts of the organization seem to be vital elements. These insights enable managers to better confront the diverse challenges that IT organizations of incumbent firms face on their journey to greater agility.

## Limitations

This work has limitations. Our results provide only an exploratory picture of the ambivalent role of team autonomy in scaling agility. Although this already advances the discourse in this topic area, further research should validate our findings. Likewise, the chosen approach of taking the team autonomy mechanisms of Gerwin and Moffat limits our perspective. Although – as mentioned in the methodology – we always tried to consider other, possibly more appropriate lenses during our data analysis, this is a limitation. Especially for analyzing this second part of the paper, other theoretical lenses may be helpful to complement our findings.

Moreover, while a case study design can explore themes and mechanisms regarding team autonomy, a deeper analysis to confirm the findings seems appropriate. For instance, a more extended observation of the underlying mechanisms addressing team autonomy seems rewarding to fully understand the underlying assumptions that influence team autonomy. Accordingly, future work could conduct ethnographic studies to gain an even deeper understanding of team autonomy. Another sensible addition would be to add other contexts to the data set. Although we have chosen specific cases that complement the diversity of other work, a further expansion of the case base is helpful to increase the validity of the results. Likewise, a quantitative study based on these results must confirm the findings. For this purpose, individual cases could be surveyed and examined holistically, or team members from various organizations could be interviewed.

## Conclusion

This paper advances our understanding of how team autonomy is manifested and governed in scaling agility. By identifying three central themes—cross-functional design along the value stream, dependency orchestration while sustaining autonomy, and balancing stability and flexibility—we show that team autonomy is a multidimensional organizational accomplishment that emerges through deliberate coordination across units. In doing so, we extend prior work on agile organizational design and offer a more nuanced theorization of how autonomy is shaped and enacted in large-scale agile transformations.

We further contribute by specifying mechanisms that address the tensions inherent in these autonomy themes. Building on and extending Gerwin and Moffat's (1997) framework, we demonstrate that autonomy in scaling contexts is supported not only through decentralized decision rights but also through enabling constraints such as a well-communicated development model, disciplined design-freezing practices, managerial support behaviours, and clear guidelines for decision-making and team structuring. Our identification of a fourth mechanism enriches existing theory by showing how structured guidance can provide stability while preserving the flexibility central to agile ways of working—an insight with relevance beyond the immediate context of scaling agility.

While subject to the usual limitations of an exploratory qualitative study, our analysis offers a clearer conceptual foundation for understanding the organizational dynamics of autonomy in large-scale agile transformations. We hope that the themes and mechanisms we articulate encourage further research and inform practitioners seeking to navigate the complexities of scaling agility.

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