

Navigating Platformization Tensions in Manufacturing: An Organizational Ambidexterity Perspective

ACCEPTED VERSION – International Journal of Production Economics

DOI: <https://doi.org/10.1016/j.ijpe.2026.110064>

Abstract

This study investigates how manufacturing firms navigate tensions that arise during platformization, as they gradually integrate exploratory, platform-based activities into traditional, product-based, exploitative activities. While previous literature has emphasized how manufacturers address the technological and strategic tensions of platformization, we explore its organizational dimension through a 12-year longitudinal single-case study of a leading European woodworking machinery manufacturer that evolved from product-centric operations to an orchestrator of a digital multisided platform. First, we identify three tensions throughout the platformization process: i) customer interaction; ii) value source; and iii) control, increasingly broadening their coverage in terms of the business model's value mechanisms (delivery, creation, capture). Second, by adopting a multi-level view of organizational ambidexterity, functional and team, we identify six organizational mechanisms to address the platformization tensions. At the functional level, tensions are managed through an increasing degree of structural separation between units pursuing either exploration or exploitation. In contrast, at the team level, cross-functionality serves as a compensatory mechanism to maintain connections between progressively separating units. Our study contributes to extant conversations on platformization as a business model innovation process and organizational ambidexterity in manufacturing, offering practical implications for managers considering a platformization journey.

Keywords: platformization; organizational ambidexterity; business model innovation; digital servitization; manufacturing transformation

1. Introduction

Over the last two decades, digital technologies have challenged the competitive dynamics of many established industries, opening opportunities for firms to design new business model paradigms (Autio et al., 2018; Manotti et al., 2025). In manufacturing, this has fueled digital servitization, i.e., the integration of digital services alongside traditional product-centric offerings, and more recently, the development of digital platforms opens to complementary organizations to deliver integrated value propositions to customers (Adner, 2017; Cenamor et al., 2017; Lerch et al., 2024; Stonig et al., 2022). According to PwC (2023), firms adopting digital platforms with complementors achieve 20% better financial performance than their counterparts, underscoring the strategic relevance of platformization.

Platformization represents a process of business model innovation for manufacturers (Foss and Saebi, 2017; Tian et al., 2022): it requires the progressive inclusion of market-pull activities within the technology-push routines of traditional product providers, fundamentally reconfiguring how value is delivered, created, and captured. Building on March (1991), this reconfiguration demands the concurrent pursuit of exploration, assessing new opportunities, and exploitation, optimizing existing operations, activities that are inherently contrasting and compete for organizational attention and resources. Successfully navigating this tension requires organizational ambidexterity (Gibson and Birkinshaw, 2004; O'Reilly and Tushman, 2013) and given that exploration and exploitation unfold simultaneously across functions and teams, a multi-level perspective on ambidexterity is particularly warranted (Kang and Kim, 2020; Zimmerman et al., 2015). Yet platformization research has predominantly examined technological and strategic dimensions of this process, paying limited attention to its organizational implications (Dmitrijeva et al., 2020, 2022; Kohtamäki et al., 2020). This gap is consequential: organizational resistance rooted in product-centric mindsets represents one of the primary barriers to platformization (Kapoor et al., 2022; Vargo and Lusch, 2004), and without understanding how firms organizationally navigate the

exploration-exploitation tensions that arise, the conditions for a successful transition remain unclear. This study, therefore, asks: *How do manufacturers navigate tensions that emerge throughout the platformization process from an organizational perspective?*

To address this question, we conducted a longitudinal single-case study in the woodworking industry (Langley, 1999; Ozcan et al., 2017), analyzing the 12-year journey of an Original Equipment Manufacturer (OEM) from a traditional product provider to a leading proponent of a multi-sided digital platform. Adopting a multi-level organizational perspective (functional and team levels), the study identifies two main findings and synthesizes them into a process model of organizational change during platformization. First, we derive three tensions (customer interaction, value source, and control) corresponding to the three transitional phases of the platformization process outlined by Lerch et al. (2024) and connected to the progressive broadening of business model innovation (Benitez et al., 2023; Tian et al., 2022). Second, we identify six organizational mechanisms through which OEMs address these tensions: three at the functional level, where structural separation between explorative and exploitative units progressively increases, and three at the team level, where growing cross-functionality serves as an integrative counterweight to such separation (Bianchi et al., 2022).

This study advances the platformization literature by offering an organizational and processual perspective on how OEMs evolve from product-centric to platform-centric logics, extending Lerch et al.'s (2024) framework by theorizing platformization as a tension-laden process of organizational reconfiguration rather than a sequence of technological milestones. Our first contribution identifies three core tensions that punctuate this transition and entail a progressively broader redesign of business model mechanisms, spanning value delivery, value creation, and value capture (Foss and Saebi, 2017; Teece, 2010; Tian et al., 2022). Our second contribution speaks to organizational ambidexterity theory. By interpreting platformization as an organizational change process, we develop a dynamic, multilevel model that shows how functional-level structural separation and team-level cross-functional integration co-evolve in response to broadening exploration-exploitation

tensions, reinforcing the view of ambidexterity as a dynamic and context-dependent organizational capability (Raisch and Birkinshaw, 2008; Zimmermann et al., 2015).

2. Theoretical Background

2.1. Platformization as a Process of Business Model Innovation in Manufacturing

Platformization in manufacturing refers to a business model innovation process through which Original Equipment Manufacturers (OEMs) go beyond the traditional design and production of physical goods and progressively collaborate with other complementary organizations to deliver an integrated value proposition by means of a common infrastructure (Adner, 2017; Jacobides et al., 2018; Lerch et al., 2024; Şimşek et al., 2022). The platformization process requires manufacturers to transition from a product to a platform logic, meaning building a new competitive advantage from the integration of digital services and complementary modules coming from different organizations, to be delivered together to the final customer (Benitez et al., 2023; Sjodin et al., 2021; Stonig et al., 2022). Platformization is deeply intertwined with the process of digital servitization, meaning the process through which manufacturers integrate digital technologies (e.g., IoT, AI, cloud computing) to offer smart, data-driven services that complement physical products (Cenamor et al., 2017; Jovanovic et al., 2022; Kohtamäki et al., 2020). Indeed, most of the digital services introduced by manufacturers to complement their physical product offerings (e.g., online reordering and remote assistance) rely on digital platforms, requiring a shift away from a purely product-centric mindset (Baines et al., 2020).

Platformization typically begins with the OEM developing a transaction platform, essentially the digitalization of its traditional sales channel (Corsaro and Maggioni, 2022; Mattila et al., 2021). Through a dedicated digital sales platform, end customers can browse the product catalog and place orders, thereby streamlining the overall sales process (Heikinheimo et al., 2024). The core activities in this initial stage revolve around digitizing product information, which, in many traditional

manufacturing firms, may still exist only in analog form, as well as creating a basic e-commerce layer. From a business model standpoint, this corresponds to what Timmers (1998) originally introduced: a digital channel that complements and supports the firm's established brick-and-mortar sales channels, with the focus still on producing physical goods (Teece, 2010; Zott and Amit, 2010). However, this transformation is not without organizational challenges. The introduction of a direct e-commerce channel frequently generates internal resistance, particularly among sales teams, who tend to perceive the digital channel as a substitute for, rather than a complement to, their existing activities, and whose incentive structures are rarely redesigned to accommodate the new configuration (Rodriguez et al., 2020). Simultaneously, product and IT teams face the nontrivial burden of digitalizing large volumes of analog product information, an effort that directly competes with their core operational responsibilities. Despite its apparent simplicity relative to subsequent stages of platformization, successfully deploying an online sales channel requires deliberate organizational alignment across functions, a demand that manufacturers frequently underestimate. The second transition in the platformization process occurs when manufacturers begin developing IoT platforms and equip their products with digital sensors that collect operational data. Once analyzed, these data can be transformed into actionable insights and delivered to customers through new digital services (Lerch et al., 2024; Suppatvech et al., 2019). This transition has captured significant attention in the digital servitization and Industry 4.0 literature, which explores how digital technologies enable new forms of value creation for manufacturers (Dalenogare et al., 2018; Frank et al., 2019; Lafuente and Sallan, 2024). In this phase, the OEM faces a substantially higher level of commitment and investment. On the technical side, firms must design appropriate sensors (Flores-Garcia et al., 2023) and develop the capabilities needed to extract value from machine data, culminating in the creation of a real-time data-powered platform (Momeni et al., 2023; Struwe and Slepnirov, 2023). Organizationally, the introduction of IoT platforms imposes a service logic, in which value is co-created over time with the customer and measured through outcomes, onto organizations historically governed by a product logic centered on production efficiency and

tangible output (Vargo & Lusch, 2004). These logics are not merely different in emphasis: they may lead to incompatible metrics, incentive structures, and definitions of organizational success. Moreover, the data generated by connected products creates new forms of asymmetry in customer relationships, raising concerns about data sovereignty and trust that can impede adoption, independent of technical readiness (Sjodin et al., 2020). Internally, ownership of operational data becomes contested across functions (e.g., engineering, after-sales, and emerging digital units), leading to coordination failures that are organizational rather than technological. Finally, the shift toward subscription or outcome-based revenue models requires sales teams to reposition from product-knowledge selling to performance-based value argumentation, altering required competencies, sales cycle lengths, and incentive design in ways that generate significant organizational friction (Tienken et al., 2023).

The final phase of the platformization process involves manufacturers developing multi-sided market platforms. In this stage, firms recognize the value of integrating with other industry actors on the supply side to jointly deliver a shared value proposition to the end customer (Filosa et al., 2025). This value proposition is typically delivered through a shared digital platform orchestrated by one of the leading manufacturers involved, often the one controlling the most critical asset or capability (Stonig et al., 2022). This phase has attracted the greatest scholarly attention in recent years, particularly concerning the nature of the integrated offering, the identification of complementary partners, and the challenges of persuading these actors to join a shared platform initiative (Benitez et al., 2020; Huikkola et al., 2022). Activities shift from an intra-firm focus to an inter-firm orientation: manufacturers must engage in structured dialogue with prospective partners, negotiate governance arrangements, and define data-sharing rules and responsibilities (Jacobides et al., 2018, 2024). For the orchestrating manufacturer, this transition requires exercising architectural control over data standards, API access, and governance rules, thus shaping value distribution across the ecosystem, while simultaneously building the trust necessary to attract and retain partners (Jacobides et al., 2018). At the same time, moving from product producer to platform orchestrator

represents a fundamental redefinition of competitive identity: the firm must develop ecosystem management capabilities largely absent in traditional manufacturing organizations, while managing a sales force that may perceive incoming partners as threats to existing customer relationships (Hendricks et al., 2025).

In sum, platformization represents a business model innovation process for manufacturers (Benitez et al., 2023; Sjodin et al., 2022), requiring the transformation of organizational activities and thereby implicitly creating tensions within the company. While these tensions have been addressed at the strategic and technological levels, the organizational change required throughout the platformization process warrants further attention at a finer-grained level (Dmitrijeva et al., 2020, 2022; Lerch et al., 2024; Riemensperger and Falk, 2020).

2.2. Organizational Ambidexterity: Towards a Dynamic and Multi-level View

Business model innovation in established organizations, such as platformization, has proved challenging, as organizational inertia tends to impede the adoption of new practices and routines (Foss and Saebi, 2017; Spieth et al., 2025). Building on the idea that organizational change in existing organizations often requires exploring new domains and introducing new activities while continuing to execute and exploit what already exists (March, 1991), organizational scholars claim that organizations should orient toward organizational ambidexterity, meaning balancing exploration and exploitation activities (Gibson and Birkinshaw, 2004; Lavie et al., 2010; Raisch and Birkinshaw, 2008; Tushman and O'Reilly, 1996). Research on organizational ambidexterity has expanded rapidly over the past two decades, extending its application to themes such as innovation, organizational design, alliance management, R&D processes, and top-management team dynamics (Lerch et al., 2024; Vendrell-Herrero et al., 2023; Zimmermann et al., 2015). Although the term has been used in varied ways, a shared understanding has gradually emerged: ambidexterity concerns how organizations navigate and reconcile the inherent tensions between exploitation and exploration (Raisch and Birkinshaw, 2008). Exploitation and exploration activities represent two

contrasting activities that compete for organizational attention and resources. Exploitation involves refinement, efficiency, implementation, and execution, whereas exploration entails experimentation, variation, risk-taking, flexibility, and the pursuit of novel opportunities (Lavie et al., 2010; Zimmermann et al., 2015). Two main mechanisms provide the foundation for achieving this balance. Tushman and O'Reilly (1996) argue that firms can sustain both activities by structurally separating exploitative and explorative units. In contrast, Gibson and Birkinshaw (2004) propose that ambidexterity can also be realized contextually by cultivating an organizational environment that encourages individuals and teams to allocate their efforts dynamically between the two activities. Lerch et al. (2024) recognized that the platformization process falls under transformational processes that require manufacturers to orient toward ambidexterity, in an attempt to preserve the product-logic (exploitation) while introducing and progressively experimenting with the platform-logic (exploration).

However, in transformational processes such as platformization, it is unlikely that a single ambidexterity mechanism, either purely structural or purely contextual, can effectively support organizational adaptation. Organizational transformations unfold over time, and the locus of change may shift (Teece, 2010). Therefore, recent research explicitly shows that ambidexterity is rarely stable or uniform, but rather dynamic, requiring temporal variation and continuous recalibration (Cao et al., 2024). Organizations may adjust the configuration of exploratory and exploitative activities either gradually or with disruptive shifts, with distinct implications for performance depending on resource constraints and external pressures (Chakma et al., 2021). Prior research highlights how maintaining a stable balance is beneficial only in relatively incremental environments, whereas in more discontinuous contexts, such stability becomes misaligned, revealing that ambidexterity's effectiveness is contingent on environmental dynamics (Kang and Kim, 2020; Luger et al., 2018).

Beyond the dynamism required by strategic processes of transformation (Wooldridge and Floyd, 1990), organizational adaptation is inherently multi-level, as the tensions between exploration and

exploitation unfold simultaneously across organizational units, teams, and individual actors (Andriopoulos and Lewis, 2009; O'Reilly and Tushman, 2013). At the organizational level, senior teams play a critical role in shaping the enabling conditions that allow exploratory and exploitative activities to coexist (Jansen et al., 2008; Jansen et al., 2012). At the same time, ambidexterity also depends on how business units and teams respond to competing demands, as unit-level performance benefits from ambidexterity only when structural and resource conditions provide the flexibility and autonomy needed to adapt exploration–exploitation efforts locally (Jansen et al., 2012). Crucially, research highlights that ambidexterity also arises from individual-level behaviors, as managers and employees navigate contradictions in their everyday activities. Individual ambidexterity is shaped by coordination mechanisms, cross-functional interactions, network structures, and HR systems that influence employees' ability and motivation to refine existing knowledge and pursue novel opportunities simultaneously (Greven et al., 2023; Mom et al., 2009; Rogan and Mors, 2014; Mom et al., 2019). These microfoundations show that organizational ambidexterity emerges only when individuals enact it in practice, embedding exploratory and exploitative actions into their routines and interactions.

Taken together, these insights indicate that effective ambidexterity requires a distributed effort across levels: top management must set integrative conditions and supportive contexts, units must adapt and interpret tensions in situ, teams must coordinate competing demands, and individuals must embody ambidextrous behaviors in their daily work. Ambidexterity is therefore not merely a structural design choice, but a multi-level capability that emerges from the interplay of organizational, unit, team, and individual actions (Andriopoulos and Lewis, 2009; Jansen et al., 2008; Mom et al., 2009; Rogan and Mors, 2014; Jansen et al., 2012; Mom et al., 2019).

In sum, platformization represents both a business model innovation process and an organizational change process, thus posing different tensions that must be addressed at various levels of the organization over time (Cenamor et al., 2017; Dmitrijeva et al., 2020, 2022; Foss and Saebi, 2017;

Tian et al., 2022). However, little research has examined how an OEM dynamically addresses these tensions from an organizational perspective during the process of platformization. Therefore, building on the recent call for ambidexterity (Lerch et al., 2024; Riemensperger and Falk, 2020) to investigate organizational adaptation to change with more dynamic and multi-level perspectives, this study examines the tensions and the dynamic and multi-level mechanisms that OEMs implement throughout the entire platformization process.

3. Methodology

3.1. Research design and case selection

Aiming to investigate how manufacturers organizationally deal with the tensions arising from the concurrent implementation of exploration and exploitation during the platformization process, we carried out our research as a longitudinal single case study (Langley, 1999) to inductively build and extend theory concerning the organizational decisions to cope with the transition from a product and physical-centric firm to the development of a multi-sided digital platform with complementary actors. We chose this methodology to exploit the possibility of having quasi-unlimited access to the company we analyzed over an extended period, as suggested by Ozcan et al. (2017). The focal firm we selected started with a purely analog offering and ended as a leading actor in developing a multi-sided digital platform with external partners. With this choice, we had the opportunity to build on several studies (e.g., Lerch et al., 2024; Vendrell-Herrero et al., 2017) that call for investigating a single company across the entire platformization process and analyzing it in depth. Our focal company, under the pseudonym Woody, is one of the world's leading manufacturers of woodworking machinery, an industry with an annual turnover of nearly 5 billion dollars in 2023 (fair presentation, 2024). Established in the 1950s in southern Europe, where it is still headquartered, Woody is today a global player with 4,400 employees, 18 production plants, 21 subsidiaries, and 200 distributors worldwide. Over the decades, Woody's growth was a mix of

organic growth in the wood business and the acquisition of smaller niche players. Woody is organized as a holding structure: some business units focus on the design and manufacture of industrial machinery for transforming other materials (e.g., plastic, glass), while the woodworking segment accounts for 75% of the group's overall revenues [company's internal presentation].

3.2. Data collection

Our data collection spans from 2012 to 2025, with a real-time study from 2022 forward. The constant interaction with Woody's Head of Digital Transformation and Business Remodeling (formerly Head of Customer Care and Head of Digital Services) provided us with privileged access to interview employees and gather archival material. As is typical in longitudinal case studies (Langley, 1999; Ozcan et al., 2017), we combined multiple data sources to capture the richness of events that spanned these years. Our main source is one-to-one semi-structured interviews, which were used to examine the entire platformization process, from the early implementation of a transaction platform to the final multi-sided platform design. Specifically, we conducted 38 interviews with Woody's top and middle management, as well as employees in more operational roles. According to Ozcan et al. (2017), triangulating data from informants in executive and operational roles is key to capturing the full picture of phenomena in management research. Indeed, top management tends to offer visionary, abstract views of strategic decisions, while operational personnel who experience strategy implementation daily often provide a valuable complementary perspective. We conducted these interviews in four rounds, with the first three covering the transitional phases of the platformization process as outlined by Lerch et al. (2024), namely i) from product thinking to sales thinking; ii) from sales thinking to value thinking; and iii) from value thinking to platform thinking. The fourth round was instead devoted to reviewing the previously collected data and validating our interpretation of the informants' words. Each interview lasted, on average, an hour and was fully recorded and transcribed.

Between rounds of interviews, the research team ran 15 half-day workshops with Woody's informants, some of which were also open to suppliers and customers. Workshops internal to Woody were dedicated to bringing different informants (from different functions) together, collecting their collective positions on all phases of the platformization process they were experiencing or had already experienced, and, in particular, the challenges they were personally facing. These occasions complemented one-to-one interviews, during which the research team interacted with a single informant at a time. Workshops open to Woody's suppliers and customers were instead more strategically oriented, serving as discussion rooms for the third phase of the platformization process, during which the organization engages in dialogues with other firms to build a collaborative, multisided digital platform that delivers an integrated value proposition. Moreover, we had the unique chance to attend three negotiation meetings between Woody and digital platform partners before and after the agreement on developing the collaborative multisided digital platform, where the goal was not only informative (i.e., presenting the opportunity to potential partners), but rather a discussion concerning the governance rules of the joint infrastructure. Finally, we conducted in-company visits to both Woody's headquarters and its customers, which enabled us to observe the growing centrality of digital services within the organization. For instance, we had access to Woody's archives, where we could see the evolution of the headquarters and the factory over time, along with the progressive introduction of digital services into the company's offerings. At the same time, we had the chance to conduct company tours of the production lines, with opportunities to interact with long-standing blue-collar workers who, even if not in formal interviews, further deepened our understanding of the case through their multi-decade experience within the Woody. We visited customers' headquarters to clarify how these actors' production lines are fragmented across providers, the difficulty of integrating them, and to collect customers' opinions on the necessity of integrated solutions. We also attended the main sector trade fair, where we observed Woody's interactions with customers and competitors, and we interviewed several industry participants.

We triangulated this data with restricted archival documents and company memos. Moreover, we analyzed articles from specialized blogs about the new release of Woody's digital services during the platformization process, using users' comments as a proxy for market acceptance, and tracked the longitudinal evolution of the Woody website via the Wayback Machine to observe the increasing focus on digital services. All these documents served as a backup and confirmation of the information collected from Woody's informants, thereby mitigating the informant bias in qualitative research. When we noticed discrepancies between informants' words and secondary sources, we returned to the informants to request clarifications. Indeed, these secondary sources have been fundamental in establishing a chronological order for the events we ask informants about. *Table 1* shows an overview of the data collection.

Table 1 - Data Collection Summary

Source of Data	Quantity	Description
<i>Primary</i>		
One-to-one semi-structured interviews	38	Head of Digital Transformation and Business Remodeling (also referred as Head of Customer Care and Head of Digital Services) (9 interviews) Service & Spare Parts Manager (4 interviews) Digital Transformation and Business Remodeling, Project Manager (5 interviews) Digital Services, Project Manager (5 interviews) Customer Care Manager (5 interview) Head of Innovation (5 interview) Human Resource Specialist (1 interview) Sales Manager (2 interview) Head of Procurement (1 interview) Board Member (1 interview) Informal conversation during industry trade fairs and in-company visits with Woody's Chief Executive Officer and Woody's Chief Operating Officer
Research Workshops	15 (Average duration: 128 minutes)	Private events attended by top managers of multiple firms (including Woody) aiming at sharing their experience in building collaborative multisided digital platforms
In-company visit	4 (whole day)	Visit to Woody's headquarter and customers' production facilities
Digital Platform Negotiation Meetings	3 (3 hours each)	October 2023, June 2024, December 2024
<i>Secondary</i>		
Financial Statements	12 documents	Woody Annual Reports (2013-2023)
Videos and Recorded Interviews	65	Woody YouTube Channel and third-party websites
News and Magazine's Articles	100+	Local and National Press, Magazines, Newsletters of Industrial Associations

3.3. Data analysis

Within two weeks of each relevant data acquisition step, the first two authors independently coded the data using open and axial coding (Corbin and Strauss, 1990). We used the informants' words, completed by secondary sources, to derive codes and organize our data. Following the suggestions of Gioia et al. (2013), we first translated the data into first-order categories using a language closer to the raw data collected, then aggregated them into second-order themes at a higher level of abstraction. Every month, all three authors held meetings to reach an agreement on coding activities. As a result, we agreed on the identification of three main overarching dimensions coherent with the organizational tensions related to the transition in the platformization process, namely "Customer Interaction Tension", "Value Source Tension", and "Control Tension", adopting a progressive level of abstraction as suggested by Gioia et al. (2013). The final data structure is reported in *Figure 1*.

Throughout the process, we searched for links among concepts, discussing with Woody's managers to confirm when connections were unclear. Our focus was always on understanding how Woody progressed through the different stages of the platformization process, in particular, uncovering sources of tension within the organization and how it coped with them. Based on this iterative activity, we developed an inductive model to address our research question, presented in *Figure 3* at the end of the Findings Section. The model presents organizational mechanisms for manufacturers to transition from one phase to the next of the platformization process. Specifically, we derived six organizational mechanisms, three at the function level, and three at the team level, that emerged from theoretical abstraction in our coding activity as second-order themes. We presented and confirmed several intermediate versions of this model with Woody's Head of Digital Transformation and Business Remodeling, collecting additional information over time that enabled us to fine-tune it into the final version. The triangulation of multiple data sources (Goffin et al., 2019) ensured the robustness of the study. Internal company documents were primarily used to

describe the phenomenon, thereby overcoming the “winner-takes-all” logic in presenting qualitative research evidence, which often relied solely on interviews (Codini et al., 2023).

INSERT FIGURE 1 ABOUT HERE

4. Findings

In this section, we report the findings of the study, following the data structure we derived from the data analysis in the methodology section, and reflecting the temporal occurrence of the events (summarized in *Figure 2*), a consolidated strategy for reporting findings in qualitative process research (Berends and Deken, 2021). In particular, the section is organized along the three tensions the OEM experienced throughout the platformization process, namely i) Customer Interaction Tension; ii) Value Source Tension; and iii) Control Tension. We locate each tension to the entry into the next platformization phase outlined by Lerch et al. (2024), meaning i) from product-thinking to sales-thinking, building the first transaction platform; ii) from sales-thinking to value-thinking, building the IoT platform; and iii) from value-thinking to platform-thinking, building the multi-sided platform. Within each phase and tension, we report the organizational mechanisms the OEM implemented to progress through the platformization process while balancing exploration and exploitation. Specifically, each finding’s section corresponds to a phase of the process. It encompasses two subsections that shed light on the functional-level and team-level organizational mechanisms put in place, respectively. Given the longitudinal nature of the study, the key informant held three roles (Head of Customer Care, Head of Digital Services, and, finally, Head of Digital Transformation and Business Remodeling) over the period, which led to the formation of new teams and units. For clarity, in illustrating our findings, we refer to this key informant by the specific role held at the time of the platformization process outlined.

INSERT FIGURE 2 ABOUT HERE

4.1. Customer Interaction Tension: Building the First Transactional Platform

As recognized in prior literature (e.g., Lerch et al., 2024; Tian et al., 2022), the platformization process in Woody began with the development of a transaction platform (i.e., an e-commerce platform), shifting from a pure product-thinking approach to a sales-thinking approach. Therefore, Woody faced *customer interaction tension* due to the need to introduce a new touchpoint with customers, in contrast to the legacy analog-based customer management mode. From a business model perspective, this led to an exploration-exploitation tension within the OEM's value-delivery activities. Such a tension has been addressed by implementing a mechanism of *contextual ambidexterity for customer proximity* at the functional level, and a mechanism of *localized cross-functional experimentation for digital initiation* at the team level. The former involved giving the Customer Care function the mandate to run the new discontinuous project, given its proximity to customers. In contrast, the latter involved creating a cross-functional team with the IT department to build the first version of the transactional platform.

4.1.1. Contextual Ambidexterity for Customer Proximity (Functional)

“It all originated from the very first project that we did, we were changing the sales channel. We were no longer selling parts directly to dealers, but we were selling parts digitally.”

(Head of Customer Care)

By 2012, technological innovation in woodworking machinery had plateaued, allowing global new entrants to compete with comparable products at lower prices. Given the average machine's 15-year lifespan, Woody decided to develop new post-sales services to retain customers over time and stabilize revenues between these long replacement cycles. Woody already had in place some

quite basic post-sales services carried out by the Customer Care function, including scheduling maintenance services, responding to technical failures, providing training for newly qualified personnel operating the machines, and managing the resale of spare parts. However, these activities were quite limited and economically inefficient.

"The need to launch the [digital] portal arose from the desire to make customer care more efficient, avoiding a situation where customers would call the service team in an unstructured manner or send scattered emails. At the same time, we also needed a tool that would allow us to monitor all these requests and conduct analyses." (Service & Spare Parts Manager)

Therefore, Woody's board decided to invest in a project to improve the efficiency and traceability of post-sale assistance. However, this meant to open a digital sales channel to interact with customers, something entirely new for Woody. It led to *customer interaction tension*: on the one hand, sales were mainly handled through the physical salesforce, but on the other hand, a new digital sales channel was set up. The mandate to develop it was given to the Customer Care function. Assigning ownership of the experimental project to Customer Care was considered natural, given the function's proximity to the final customer after the machine purchase, particularly for spare parts throughout the machine's lifecycle. Unlike sales and new product development functions, Customer Care already had some data and expertise in dealing with customers in the post-purchase phase. Based on this post-sale experience, the possibility of selling machines directly through the online portal was initially ruled out due to the complexity and length of the purchasing process. As confirmed by Woody's salespeople and a Woody's board member, negotiations for new machines can last up to a year. Therefore, selling them online was not considered a viable alternative at the time. On the contrary, Customer Care highlighted that the machine's spare parts were in high demand in the years following purchase.

“As I later came to recognize through my university studies, what we had been doing was essentially a Lean Startup approach: we began experimenting with a marginal product line [spare parts] to test customers' willingness to engage with us digitally, all without redesigning the core machine-selling process.” (Customer Care Manager)

Therefore, Woody's management team issued a mandate to build an e-commerce channel for spare parts sales, directly connected to the company's ERP, to make up-to-date stock information available to customers. Therefore, the Customer Care function engaged with the tension of a new (digital) *customer interaction* via a mechanism of *contextual ambidexterity for customer proximity*, given the necessity to keep managing the traditional analogical post-sales services of spare parts with the new experimental platform (contextuality) and based on the experience of being the customer's touchpoint after the product's initial sale.

4.1.2. Localized Cross-Functional Experimentation for Digital Initiation (Team)

The management team gave the Head of the Customer Care area a mandate to lead the project, with a project manager from her team overseeing operations at the operational level. This initiative was the first of its kind, and the two Customer Care people involved had limited time to devote to the project while continuing their regular activities. Given the need to integrate the new online sales channel into the firm's ERP, an IT Department developer was also involved. The interaction with the appointed member of the IT department was structured with an agile mindset, meaning setting small objectives to be achieved within a fixed time frame, with the option to repeat the cycle if the outcome did not meet expectations. Such work organization represented a novelty for Woody at the time.

“We started developing something small, testing and improving, realizing gradually. It wasn't easy because we were all used to working with waterfall logic, with fixed GANTT and pre-

defined milestones. Making coexisting Customer Care and IT normally working with other flows made some frictions arise, but we succeeded in delivering something interesting.” (Head of Customer Care)

Since the project was unprecedented and there was a lack of internal expertise in digitalization and e-commerce, the small team collaborated with an external software house to develop customized e-commerce platforms for enterprises. In almost one year of work, the final solution integrated the warehouse, allowing customers to check product availability in real-time via the e-commerce platform, place orders 24/7 beyond standard office hours, and access all relevant digital resources, including machine data sheets and other documentation.

“The customer had a true benefit, because they could check the availability of the part and right away place an order. So, the delivery was much quicker than calling someone during office hours, waiting in line, asking for the spare part, and then having the part shipped. Everything was more streamlined.” (Customer Care Manager)

As part of the project, the small team created a new web portal to make parts sourcing easier and quicker. Free phone support for customers continued, but a subscription service with an annual flat fee for inclusive remote support via teleservice was introduced. From 2012 to 2016, 50% of spare parts orders migrated to the digital channel, marking the initiative's success and giving the organization the confidence to explore further digital opportunities.

Thus, at the team level, the new *customer interaction* tension was addressed through a mechanism of localized *cross-functional experimentation for digital initiation*, by involving two people from the Customer Care function and collaborating with the IT function on the specific project of the digital portal, building on the backbone competencies already present in the organization to kick off the experimentation of the first Woody's digital service.

4.2. Value Source Tension: Developing IoT-enabled Digital Services

Once Woody developed its transaction platform to digitalize spare parts sales, it experienced industry hype around the development of IoT platforms in manufacturing. Accordingly, Woody started to face the necessity of considering new forms of value creation stemming from its machines, thus experiencing a *value source tension*, meaning understanding whether the value for the customer may have moved away from what characterized the industry for all the decades before: the physical product and its technical features (Grönroos and Helle, 2010). Over the years, after experiencing some failures at the function level, Woody implemented a mechanism of *embedded contextual ambidexterity for market responsiveness*, extending the Customer Care function's domain of operations to include the design and management of its first IoT platform by creating a sub-function of Digital Services. At the team level, Woody implemented a mechanism of *structured cross-functional integration for organizational engagement*, in which the Digital Service team was composed of people from different functions who were also the most resistant to the transition to digital services, thereby acting as a Trojan horse that contaminated the overall organization. From a business model perspective, if the introduction of the first transition from a product to a sales logic had a limited impact on just the value delivery activities, rethinking the value logics behind the core offering led the exploration-exploitation of the second phase to be larger in magnitude, extending also to OEM's value creation activities.

4.2.1. Embedded Contextual Ambidexterity for Market Responsiveness (Functional)

In 2015-16, there was significant hype around the Internet of Things (IoT) across the entire B2B industrial sector, prompting companies to initiate numerous pilot projects. Historically, within Woody, innovation was driven by a strong product-centric mindset and focused mainly on designing new components for machines. For this reason, these innovation projects were always led by the technical team within the product lines of business. Therefore, once Woody decided to start

experimenting with IoT sensors, the mandate was initially assigned to these technical teams. Lacking a formal Research & Development (R&D) Unit, these teams focused primarily on improving existing machine components and processes. The first IoT platform was developed by the technical team of the Woody's product team for the core woodworking machine, collecting machine data via an external gateway. This system generated numerous machine status reports about machine functioning.

However, the solution failed to generate customer interest because it was designed with overly technical logic that only an expert on the machine itself could understand. Indeed, the product development team within the lines of business typically did not engage with the sales department or interact directly with customers, making it difficult to understand customer needs and preferences. As a result, once the first IoT solution was provided to customers, it received timid market acceptance. The few customers who adopted the innovative service reported not using it actively because it did not deliver tangible value. As a Woody's customer reported during an industry fair:

"If the machine stops, I can see that myself. I'm not interested in having a thousand indicators for cutting speed or material waste weight, but I need information that allows me to plan for the future. For instance, what can I do to prevent my machine from stopping?"

In other words, Woody's technical team developed the new IoT service as a high-performing technical solution. Still, it was missing the customer application and interface to enhance market appeal. It thus experienced a *value-source* tension, where the technical teams initially involved in the design of the solution still rely on the machine's technical features to build the IoT platform and related digital services. Consequently, for almost two years, the solution failed to sell to customers and occupied only a marginal space within Woody's offer. Around 2018, Woody's top management team formally established the Innovation function, focused on developing new, disruptive components for woodworking machinery, beyond the goal of improving what already existed, and was still in charge of technical teams within the product lines. The IoT project was thus transferred

to the newborn Innovation function. As a Woody's board member reported, the Innovation function emphasized that the problem was not the technology itself, but rather the absence of a backward-development approach that should have started with market needs. Customers, they noted, typically have little knowledge of the technology behind the machine and do not require intricate details about how it functions; they appreciate simple, insightful information. Instead, technical teams often project their own perspectives onto customers, assuming that their needs align when in reality, they do not. At the direction of the top management team, a Digital Services sub-function was created within the newly established Innovation function to carry forward the IoT solutions previously developed by the technical team. As reported by the Head of Innovation:

"The Digital Services team was initially placed under Innovation; this way, it was funded through public grants without requiring internal resource allocation. It is handled internally also to internalize the consulting firm's margins, which would otherwise make experimental services too costly for the customer, who often lacks the skills and experience to understand it, resulting in low adoption."

In parallel, following the prior establishment of the digital e-commerce portal, the Customer Care function spent years integrating the group's worldwide Customer Relationship Management (CRM) system. During that period, the CRM system integration was in the finalization phase, based on an analysis of recurring customer needs to build potential customer profiles. This, in turn, enabled the company to identify use cases where it could create value through new value-added services. Since the failure in customer adoption of the IoT solution had been recognized as stemming from the inability to create something perceived as valuable by customers, Woody's top management decided to appoint the Head of Customer Care, who led the CRM system integration, as Head of the newborn Digital Services team within the Innovation Unit. The two initiatives were combined to

generate synergies based on the customer knowledge developed during the CRM system integration. This aimed to create IoT applications based on CRM-driven customer insights.

"They called me to take care of the IoT project. I decided to put together a team that was already 90% of my Customer Care team, but to work on something different. We started trying things. At first, we developed hundreds of reports like the technical team before, only to realize that we couldn't handle our customers as data analysts. They didn't care much about reports on machine performance. They just wanted to ensure smooth production and avoid unexpected operational shutdowns. So, we started from the customer's needs and worked our way back to the technology, not vice versa." (Head of Digital Services, formerly Head of Customer Care)

As outlined in internal company memos, it was decided to develop this initiative in-house because maintaining direct customer contact was considered crucial. While it was known that many consulting firms could offer turnkey IoT solutions, the company opted against this approach, aiming to develop the skills for future releases of a category of services that would have weighed more and more on the firm's bottom line in the following years.

Woody developed smart sensors over the next three years for installation on new machines. Once connected to the network, the Digital Services team could monitor these machines remotely. The team created a control room. It is a remote assistance service for customers that monitors all connected Woody's machines worldwide. Over time, the Digital Services team designed subscription services for Woody's customers, offering features such as predictive maintenance insights, training on updates to the machine information system, and energy consumption certifications. By 2024, almost half of the customers' machines were connected to the network, allowing Woody to monitor their health status and intervene proactively when noticing something unusual.

Thus, at the functional level, Woody coped with the *value source tension* by embedding a mechanism of *embedded contextual ambidexterity for market responsiveness*, referring to the establishment of a Digital Services team within the newborn Innovation function, with most of the people coming from the Customer Care function, the closest one to understand and design market-oriented solutions.

4.2.2. Structured Cross-Functional Integration for Organizational Engagement (Team)

The progressive centrality of digital services within the organization, however, encountered resistance from technical product teams, which remained primarily focused on improving mechanical components and production processes. Technical teams were responsible for integrating new, innovative components into existing machines, serving as the product's reference point. To make the design of digital services a priority, Digital Services got approval from Woody's top management to structure formalized cross-functional teams. As part of this approach, some operational personnel from product technical teams were assigned to Digital Services. These people acted as a bridge between Digital Services and product divisions. This structure ensured technical expertise while also encouraging a cultural shift toward digital servitization across the organization.

"They got together, and we started working on those solutions. Then, the idea of creating small cross-functional sub-teams with specific objectives seemed like a good approach. By bringing together people from different functions, the process became much more effective. It took less time, and the teams were highly efficient." (Head of Digital Services)

Digital Services continued to draw most of its staff from Customer Care, supplemented by part-time resources from other business divisions, who allocated around 20% of their time to Digital Services projects. This meant that product division leaders could no longer ignore the transition toward

digital services and customer-centricity, as some of their own team members were involved in these projects, and the workload had to be allocated accordingly. Over time, product managers began to show greater interest in collaborating with Digital Services.

However, technical teams within product lines were not the only people working with a product-oriented approach. Product managers in sales were also skeptical about transitioning to digital service offerings, which created a barrier to selling the new services to existing customers. During a meeting attended by the research team, product managers expressed concerns about selling predictive maintenance services for their machines. Their traditional sales narrative had always focused on offering the best product that doesn't break down for years and requires minimal maintenance. Selling a service aimed at preventing breakdowns conflicted with this long-standing brand perception and made the digital service's value proposition challenging to communicate.

"If you are a 50 or 60-year-old guy, very successful in selling machines, paid on commission: why bother [about selling services]? I mean, discussing a few dollars on spare parts and service when you can sell the equipment and be done with it. We struggled to change the mentality..." (Service & Spare Parts Manager)

To address this challenge, Woody's top management leveraged a planned headquarters restructuring to reposition a physical control room, which also became the office for the Digital Service's team, at the company's machine showroom entrance. Digital services were thus not conceived as something to purchase *after* the machine to prevent possible breakdowns, but rather as an integral part of the physical product by design.

"This move gave Woody's digital services an unprecedented level of visual prominence. It was a physical manifestation of our team's vision. Anyone entering the company, whether an employee or a visitor, immediately understood how important digitalization was to Woody.

And maintenance became something associated with a positive feeling rather than pain. Because it's not only about machines, it's not only about looking at what the machine can do, but also about who made it that day, it's about having a journey with our customer through our company. Meaning services, digital support, software, machines, skills, training, how we think that in the near future needs to be shared with our customers" (Woody's Chief Operating Officer).

This decision had a significant impact on Woody's product sales teams, who traditionally guided potential customers through the company's showroom and production facility. From that point onward, every customer visit started with the Control Room and Woody's digital services. This forced product sales teams to integrate digital services into their sales narrative. Moreover, if product sales representatives felt unprepared to discuss digital offerings, they could now directly involve the Digital Services team for further explanation.

In sum, at the team level, Woody contaminated Digital Services by bringing in people from the most resistant functions and by establishing the new team's physical presence during the sales team's walking tour of the factory. Therefore, the *value source tension* of shifting the focus of value creation from physical products and their technical features to digital services built on customers' needs was addressed through a mechanism labeled *structured cross-functional integration for organizational engagement*.

4.3. Control Tension: Developing a Multi-sided Digital Platform

The last transitional phase of the platformization process saw Woody interact with potential partners to integrate its previously developed IoT platform with similar third-party solutions, thereby offering an integrated solution to customers alongside complementary actors. According to Lerch et al. (2024), this transition is from a value-thinking to a platform-thinking approach. Such a transition

phase poses a *control tension*, where Woody must maintain control of its internally developed IoT platform that is already generating results vis-à-vis other units, as well as externally with potential partners integrating a module into a standard solution. From a business model perspective, this last transition involves OEM's value capture activities, following value delivery and value creation in the previous two phases. Therefore, this third exploration-exploitation tension forces the OEM's overall business model to reconfigure away from its initial product-centric logic. Woody addressed the *control tension* through a *structural separation for exploration autonomy* at the functional level, spinning off Digital Services into the new Digital Transformation and Business Remodeling Unit (DTBR), with operational independence and a separate income statement. At the team level, it implemented a *distributed coordination mechanism for external alignment*, building cross-organizational teams to design the new integrated services, which serve as the building blocks of the multi-sided platform.

4.3.1. Structural Separation for Exploration Autonomy (Functional)

Woody's digital services quickly gained traction, but customer adoption was limited because their factories included machines from multiple OEMs, each with its own digital monitoring tools. This fragmentation forced customers to manage multiple subscriptions and portals, or to commission custom software to integrate data. Realizing that the main barrier was not service value but its narrow coverage, and that other OEMs faced the same issue, Woody decided to begin exploring integrated solutions with other organizations to simplify the customer experience and prevent software houses from capturing this space. Given the scale of the project and the need to establish external credibility to engage potential partners, Woody's top management decided that the Digital Services team should become a business unit with profit-and-loss responsibility, on par with other business units. As a result, the Digital Services team was structurally separated from the Innovation function in which it had previously been housed and transformed into the new Digital Transformation and Business Remodeling (DTBR) function. This function became responsible for

all service innovations, particularly those in the digital domain. At the team level, the new function retained its existing structure, operating with a combination of fully dedicated personnel and cross-functional members drawn from Customer Care and product divisions. As Woody's Chief Operating Officer reported in an informal conversation:

“We recognized the value of what our Head of Digital Services did in the previous years. Sharing her vision about the necessity to collaborate with other companies, as well as the increasing centrality of digital service within our business, we decided to create the new Digital Transformation and Business Remodeling function under her control.”

In the first conversations with managers from other companies, the Head of the newly formed DTBR function agreed with the vision of an innovative digital startup that was already building a digital platform for the woodworking industry, connecting machines from different companies through a single portal. However, the startup was struggling due to excessive fragmentation among industry providers and limited bargaining power when engaging large incumbents on its own initiative. By interacting with the CEO of this startup and hearing the general industry hype about multisided platforms and marketplaces, Woody's Head of DTBR conceived the idea of a marketplace for digital services in collaboration with multiple woodworking companies. As she reinforced, customers do not need just Woody and woodworking machines; they also need materials, tooling, wood, software, and other complementary products to realize their final offer. Dealing with a dozen e-commerce portals or phone calls is a nightmare, in particular for small customers.

“We came out to create an environment where we can all, let's say, collaborate to offer what I call the solution, which is not just done by the product that we build, but it's done by the other products provided by other vendors and other suppliers that are willing to collaborate.”

And of course, sharing value was necessary; we couldn't keep everything within Woody, but sharing with the other vendors to motivate them to join the project.” (Head of DTBR, formerly Head of Digital Services)

In sum, despite promising results, Woody's digital services faced challenges due to fragmented OEM solutions in customer workshops. The response was identified as creating a multi-sided platform of digital services for woodworking machinery, working with other industry players (e.g., machine manufacturers, raw material suppliers, and software providers). To address this, at the functional level, Woody elevated Digital Services to a standalone business unit (DTBR) to interact with the external environment (*structural separation for exploration autonomy* mechanism), thus mitigating a *control tension* that arises from the necessity to collaborate with other players with similar incentives in capturing value from similar solutions and the same customers.

4.3.2. Distributed Coordination for External Alignment (Team)

As outlined in various company documents, the initial objective of the multi-sided platform project was to create a pilot version, bringing on board the closest companies offering complementary products (machinery, raw materials, equipment) within the industry. Operationally, as reported by a Project Manager of DTBR:

"Woody found itself collaborating and working as a team, something that had perhaps never happened before, with competitors that traditionally divided the market among themselves, or rather, fought over the same market share. We faced a situation where we had to work in companion teams with competitors we had always clashed with, to make our machines communicate with each other."

DTBR was the main sponsor of the newborn project. It decided to extend the team cross-functionality, which had characterized the development of Digital Services, to interactions with external partners. Three main types of meetings were planned and organized. The first meetings were biweekly, with two inter-company development teams working together to define the data models for the various machines to be connected, and the product people informing possible use cases based on these connections. The second type of meeting occurred quarterly, with product-focused managers from different companies reviewing the progress made in biweekly meetings, approving or rejecting specific aspects, and setting priorities for the next quarter. Finally, a formal meeting was held every six months to align all stakeholders on project updates. A longitudinal analysis of meeting minutes from the quarterly reviews revealed that the project development was highly iterative, relying on continuous feedback cycles and collaborative plenary discussions among participating companies.

“We had multiple companies sitting around the same table, extremely different from one another, but if the market need is the same for everyone, it’s that very need that drives them all in the same direction. It’s a bit like saying: on your own, you’re a small fish, but together you become a big fish: essentially, a herd. So yes, that was basically the dynamic.” (DTBR, Project Manager)

Once the project team developed an initial digital platform concept internally, the DTBR function decided to begin external promotion to gauge customer interest. DTBR took the lead in organizing Woody’s participation in one of the most important industry trade shows, which the company and the industry’s most relevant organizations had historically attended. In a radical departure from both competitors’ and Woody’s own past approach, the Head of DTBR set up the trade show booth without any physical machines. Instead, sales discussions with potential customers were conducted at stations equipped with digital touchscreen displays, where sales representatives, supported by the

DTBR team when needed, used digital twins of Woody's machines to showcase the company's wide range of digital services. Through an agreement with long-standing customers who agreed to provide machine data, the DTBR function presented a preliminary dashboard that monitored a customer's workshop, featuring machines from multiple manufacturers that were connected for the first time in a unified system. To further reinforce the external image the company wanted to convey, a dedicated space within Woody's booth was set aside for the platform's first partners. These partners could conduct customer meetings, demonstrating the integration among different players.

Trade-show interaction data revealed that Woody and its partners experienced a significant increase in commercial conversations with potential customers. Many visitors reported that the uniqueness of a booth attracted them, even without physical machines, as multiple companies worked together to demonstrate the potential of integrating diverse products.

Thus, at the team level, Woody coped with the *control tension* characterizing the transition from value thinking to platform thinking through an organizational mechanism labeled *distributed coordination for external alignment*. It was intended to extend the working methodology already in place within the DTBR team to the peer teams of other organizations, thus controlling the advancement of the joint solution. At the same time, some partners' teams have been invited to co-present the solution at Woody's fair booth, further controlling the preliminary launch of the multi-sided platform.

We synthesize the three platformization tensions and the six organizational mechanisms in our inductive process model in *Figure 3*, further detailed in *Table 2*.

INSERT FIGURE 3 ABOUT HERE

Table 2 - Findings Summary

Platformization Phase Transition (from Lerch et al., 2024)	Platformization Tension	Platformization Tension Description	Organizational Mechanism	Organizational Level	Organizational Mechanism Description
From Product Thinking to Sales Thinking	Customer Interaction Tension (Value Delivery Activities)	The OEM introduces a new digital sales channel (the transaction platform), thus requiring managing for the first time the concurrent presence of a physical and digital sales channel.	Contextual Ambidexterity for Customer Proximity	Functional	The customer care function balances exploration and exploitation without structural separation, leveraging proximity to customers to integrate a service-oriented logic.
			Localized Cross-Functional Experimentation for Digital Initiation	Team	A first exploratory attempt confined to a small cross-functional team (Customer Care and IT), without structured methodologies and with limited resources. The exploration is restricted to a specific initiative, without direct organizational impact.
From Sales Thinking to Value Thinking	Value Source Tension (Value Creation Activities)	The OEM starts to move beyond the traditional value generated from selling physical products, through the development of digital services enabled by IoT sensors and an internal digital platform. It thus creates an internal tension related to the locus of value creation between the product and the service.	Embedded Contextual Ambidexterity for Market Responsiveness	Functional	Ambidexterity is institutionalized within a technical function while increasingly focusing on market needs. A subunit with leadership and members from customer care maintains alignment with customer demands.
			Structured Cross-Functional Integration for Organizational Engagement	Team	The formal introduction of agile as a working methodology to make exploration a priority within the company. Cross-functionality expands, involving members from various functions, including exploitative areas. Agile not only structures exploration with deadlines and constraints but also enhances its internal visibility, leveraging the showroom to influence sales teams.
From Value Thinking to Platform Thinking	Control Tension (Value Capture Activities)	The OEM begins to consider the integration of its digital services with third-party complementors. This opens a challenge of control, both internally with other functions and externally with other players.	Structural Separation for Exploration Autonomy	Functional	Structural separation allows an independent focus on exploration, freeing it from the constraints and priorities of traditional functions. The new autonomous unit specializes in digital transformation and new business models.
			Distributed Coordination for External Alignment	Team	The cross-functional model extends beyond company boundaries, involving external actors in a collaborative exploration process. The use of physical space is amplified externally, with the trade fair stand eliminating physical products to emphasize digital servitization and visually integrate partners.

5. Discussion

Our study investigates how original equipment manufacturers (OEMs) organizationally navigate the tensions that arise during platformization. As recognized in prior literature, platformization involves the progressive introduction of a service logic alongside the traditional product logic typical of many OEMs, thereby creating relevant tensions to progress over (Dmitrijeva et al., 2020, 2022; Lerch et al., 2024; Tian et al., 2022). By conducting a longitudinal single-case study of a market leader in the woodworking industry, we offer a model (*Figure 3*) showing that platformization is not a static shift but an organizational transformation that unfolds to cope with increasing exploration-exploitation tensions at the business model level through distinct yet interconnected mechanisms at both the functional and team levels, summarized in *Table 2*. At the functional level, the organizational adaptation to platformization is characterized by progressive structural separation, where units dedicated to exploration and exploitation become increasingly distinct. At the team level, organizational mechanisms are increasingly cross-functional, aiming to integrate and coordinate teams across specialized units. These two dynamics co-evolve, reinforcing each other over time, allowing firms to orient towards ambidexterity while navigating the increasing complexity to introduce a proprietary transaction platform, experimental IoT-enabled digital services, and a multi-sided digital platform.

5.1. Tensions within the OEM's platformization process

Our findings show that the platformization process does not unfold as a linear or frictionless transformation for a manufacturing OEM. Instead, it is punctuated by a series of tensions that emerge during the three transition phases: from product-thinking to sales-thinking, from sales-thinking to value-thinking, and from value-thinking to platform-thinking (Lerch et al., 2024). These

tensions reflect the progressive misalignment between the OEM's legacy structures and routines and the new logics introduced by platformization.

The first tension, which we label *customer interaction* tension, arises during the transition from product-thinking to sales-thinking. After decades of relying exclusively on a traditional physical salesforce, the OEM's decision to introduce an online sales channel challenges established assumptions about how customer relationships should be managed. This shift requires an unprecedented collaboration between market-oriented (Customer Care) and technology-oriented (IT) units, both of which frame the initiative as a side experiment outside their product-centric routines. This aligns with earlier research showing that introducing digital channels often exposes underlying inconsistencies in established commercial logics and requires bridging market and technical expertise for early experimentation (Baron et al., 2023).

The second tension, which is both deeper and more consequential, is the *value source* tension associated with the transition from sales-thinking to value-thinking. Here, the OEM confronts a more fundamental question: whether its historical competencies (centered on product engineering, mechanical excellence, and post-sales assistance) remain sufficient when digital services become a core part of the offering. Such services (e.g., predictive maintenance, remote monitoring, real-time control dashboards) represent a substantial departure from the early forms of post-sales services envisioned in the seminal servitization literature (Vandermerwe & Rada, 1988). Traditional post-sales activities, such as periodic visits by the salesforce, aimed to maintain a loose relationship with customers to support repurchase cycles (Zoltners et al., 2021). By contrast, digital services are far from "plug and play": they require designing and integrating IoT sensors, ensuring interoperability with legacy products, managing data flows, and developing software-based value propositions, all of which the OEM has limited experience with. This generates tension within the organization, not least because the investments required to establish a digital service offering are substantial. At the same time, price-based competition in traditional physical products continues to compress margins. Consequently, the value source tension is broader in magnitude and demands a deeper rethinking of

organizational structures, capabilities, and customer value logic (Tian et al., 2022; Kohtamäki et al., 2020).

The third tension, emerging during the transition from value-thinking to platform-thinking, is the control tension. This tension has two sides. Internally, it concerns the legitimation and governance of digital services, which evolve from auxiliary add-ons designed to enhance product performance into standalone digital solutions. Examples of solutions include digital twins that support operator reskilling, platforms that connect customers to third-party service providers, and sustainability dashboards used for regulatory compliance. As digital services become a business in their own right, the OEM needs to establish a dedicated organizational unit with clear profit-and-loss responsibility to control and scale this new line of business. Externally, the control tension relates to the coordination and governance challenges that arise when collaborating with complementors (Adner, 2017; Jacobides et al., 2018; Kapoor et al., 2022). Reaching the final stage of platformization means the OEM no longer creates value alone but co-designs integrated solutions with partners, often embedded within a shared digital platform (Filosa et al., 2025; Jacobides et al., 2024). Prior research emphasizes that such inter-organizational collaboration may generate disputes over value creation and capture, particularly when ecosystem actors contribute complementary resources and must negotiate governance arrangements (Thomas et al., 2025).

The three organizational tensions identified across the transition phases can be interpreted from a business model innovation (BMI) perspective (Foss & Saebi, 2017; Spieth et al., 2025; Teece, 2010; Tian et al., 2022). Each tension progressively expands the scope of business model mechanisms involved. The customer interaction tension primarily concerns value delivery, requiring the OEM to redesign the customer interface through a new digital channel. The value source tension extends to the firm's value-creation infrastructure (including resources, capabilities, and key activities), prompting a rethinking of the OEM's core competencies in light of digital service development. Finally, the control tension encompasses value capture, both internally (e.g., establishing dedicated digital business units and accountability structures) and externally (e.g., negotiating revenue and

governance arrangements with complementors). Thus, one key finding of our study is that organizational tensions during platformization progressively broaden their business model coverage (from value delivery to value creation and ultimately to value capture), indicating an increasing degree of business model innovation (Clauss, 2017).

5.2. Organizational mechanisms to orient towards OEM's ambidexterity

The second main finding of our study concerns the six organizational mechanisms that the OEM deploys throughout the process to address the platformization tensions described above. Prior research has shown that platformization requires firms to navigate the interplay between exploration and exploitation (March, 1991) and to redesign structures and routines to accommodate such contrasting activities (Tushman & O'Reilly, 1996; Gibson & Birkinshaw, 2004). Building on this literature, we adopt the lens of organizational ambidexterity, which explains how firms adjust to major organizational shifts that simultaneously demand efficiency and innovation. By taking a dynamic, multi-level perspective and distinguishing between functional structures and cross-functional teams, our model identifies two mechanisms in each of the three transition phases of the platformization process, thereby illustrating how the OEM gradually reconfigures both its functional architecture and its team-based coordination routines to cope with emerging tensions. The shift from product thinking to sales thinking introduces a customer interaction tension, as the OEM must, for the first time, manage the coexistence of physical and digital sales channels. The functional mechanism (*contextual ambidexterity for customer proximity*) illustrates how exploitation and exploration initially coexist without structural separation (Gibson & Birkinshaw, 2004). Because Customer Care is already engaged with users after the sale, it becomes the natural locus for balancing routine post-sale activities with the exploration of a digital channel. This mirrors how contextual ambidexterity can emerge bottom-up when new activities remain close to existing practice domains (Zimmermann et al., 2015). At the team level, the OEM employs *localized cross-functional experimentation for digital initiation*, a confined exploration involving only Customer

Care and IT. The small-scale, low-risk, and iterative mode of collaboration echoes early experimentation discussed in digital servitization (Cenamor et al., 2017). It reflects March's (1991) idea of experimentation as a bounded form of exploration. In this initial stage, ambidexterity remains largely emergent: exploration is encapsulated within micro-teams, while exploitation continues uninterrupted in the core organization.

The shift from sales thinking to value thinking is more profound because it challenges the OEM's traditional locus of value creation. Developing IoT-enabled digital services requires not only technical capabilities (Momeni et al., 2023; Struwe & Slepnirov, 2023) but also organizational changes to overcome entrenched product-centric logics (Kohtamäki et al., 2020; Dmitrijeva et al., 2022). The functional mechanism (*embedded contextual ambidexterity for market responsiveness*) shows how ambidexterity evolves from an emergent to an institutionalized state. Market-oriented roles are incorporated into a technical function, integrating customer knowledge into the development of digital services. This reflects the blended logic required when manufacturers transition toward service- and data-driven value propositions (Sjödén et al., 2021; Benitez et al., 2023). At the team level, *structured cross-functional integration for organizational engagement* marks an important step-change: cross-functional working methodologies are formally introduced, and exploration gains visibility across the organization. This aligns with research showing how cross-functionality can serve as an integrative structure during digital servitization (Bianchi et al., 2022) and how physical and symbolic spaces (e.g., showrooms) can support cultural alignment and exploration (Kohtamäki et al., 2020). In this phase, the organization starts to purposefully orchestrate the relationship between exploration and exploitation, reflecting earlier theoretical insights on the coexistence of the two logics through integrative structures (Tushman & O'Reilly, 1996).

The final transition to platform thinking introduces a different tension: control over value creation and value capture when the OEM begins collaborating with external complementors (Adner, 2017; Jacobides et al., 2018; Lerch et al., 2024). The functional mechanism (*structural separation for*

exploration autonomy) represents the point at which exploration can no longer remain tied to the legacy structure. The creation of a dedicated unit for digital transformation and new business models mirrors the structural ambidexterity logic theorized by Tushman and O'Reilly (1996), required when the magnitude of exploration diverges sharply from the needs of the core product business. At the team level, *distributed coordination for external alignment* extends cross-functional working practices beyond organizational boundaries. Cross-company development teams coordinate iteratively, partners are physically integrated into customer-facing spaces (e.g., trade fair booths), and alignment routines are formalized. This resonates with the growing literature on collaborative platforms in manufacturing (Sjödin et al., 2022; Stonig et al., 2022) and underscores the inter-firm nature of contemporary platformization processes. In this stage, teams become boundary-spanning governance mechanisms, both a continuation of earlier cross-functional integration and an adaptation to ecosystem-level coordination challenges.

Our six organizational mechanisms constitute the second main contribution of the study, illustrating how manufacturers progressively orient towards ambidexterity throughout the platformization process (March, 1991; Raisch & Birkinshaw, 2008). The findings show that advancing from product-centric to platform-centric logic requires greater structural separation between explorative and exploitative activities at the functional level, consistent with the structural ambidexterity perspective (Tushman & O'Reilly, 1996; O'Reilly & Tushman, 2013). At the same time, platformization also demands growing cross-functional collaboration at the team level, largely orchestrated through cross-functional routines and integrative practices that align heterogeneous expertise (Bianchi et al., 2022; Kohtamäki et al., 2020). Taken together, these mechanisms reveal that functional specialization and team-level integration co-evolve rather than substitute one another, reinforcing recent insights on multi-level and distributed forms of ambidexterity (Gibson & Birkinshaw, 2004; Zimmermann et al., 2015). Individuals and teams thus operate as the connective tissue between increasingly differentiated units, enabling the organization to adapt incrementally while navigating the expanding tensions inherent in platformization (Lerch et al., 2024; Jovanovic et al., 2022).

6. Conclusion

6.1. Theoretical Contributions

This study advances the emerging literature on platformization in manufacturing (Cenamor et al., 2017; Lerch et al., 2024; Tian et al., 2022) by introducing the tensions that OEMs must navigate as they evolve from product-centric to platform-centric logics. While prior contributions mainly conceptualize platformization as a staged expansion of digital and service-based offerings, our process model extends Lerch et al.'s (2024) seminal framework in two ways.

First, we show that the journey from product-thinking to platform-thinking is not simply a sequence of capability development or technological milestones but is instead punctuated by three tensions (customer interaction, value source, and control) that the OEM must address to proceed to the next stage. By analyzing these tensions, our model highlights the internal misalignments that underlie each transition and theorizes platformization as a process of organizational reconfiguration rather than a strategic service expansion. This extends Lerch et al.'s (2024) study by adding empirical nuances that already shed light on the necessity for the OEM to proceed in a linear, step-by-step manner. Second, by connecting these tensions to the activity system perspective on business model innovation (Foss & Saebi, 2017; Teece, 2010; Spieth et al., 2025; Zott and Amit, 2010), we articulate how platformization entails a progressively broader redesign of business model mechanisms. Specifically, our findings reveal that the *customer interaction* tension mainly challenges the existing value delivery logic, requiring a reconfiguration of customer-facing activities; the *value source* tension reshapes value creation, pushing the OEM to reconsider resources, competencies, and key activities in light of digital service development; the *control* tension ultimately affects value capture, both internally (profit-and-loss responsibility, governance of digital units) and externally (coordination with complementors, revenue-sharing arrangements).

Thus, we explicitly bridge the literature on platformization with that on business model innovation, showing that the further the OEM progresses toward platform thinking, the greater the depth and breadth of business model innovation required (Denoo et al., 2022; Clauss, 2017). More than a technological evolution, platformization emerges as a cumulative process of business model reconfiguration, extending from peripheral changes in value delivery to system-level transformations involving the creation and capture of value (Sanasi et al., 2021). This integration of perspectives offers a richer explanation of why platformization is particularly challenging for manufacturers and why not all firms manage to complete the transition.

Our second contribution is related to the literature on organizational ambidexterity (Birkinshaw and Gupta, 2013; Birkinshaw et al., 2016), particularly to recent calls for dynamic, processual, and multilevel investigations of how firms balance exploration and exploitation during organizational change (Kang and Kim, 2020; Mom et al., 2019; Zimmermann et al., 2015). While traditional ambidexterity research has established the value of structural separation (Tushman & O'Reilly, 1996) and contextual integration (Gibson & Birkinshaw, 2004), relatively few studies empirically illustrate how these mechanisms co-evolve over time and how organizations modulate them in response to shifting tensions (Kang and Kim, 2020). By interpreting platformization as an organizational change process, our study proposes a dynamic, multilevel model that shows how ambidexterity unfolds through the interaction between functional-level separation and team-level integration. We show that as tensions broaden within the organization (from customer interaction to value source and finally to control), the OEM increasingly relies on organizational mechanisms of structural separation at the functional level to protect exploratory domains. At the same time, we show that the potential downsides of such separation, such as siloed thinking, are mitigated by the growing cross-functionality of teams, which act as integrative microstructures (Turner et al., 2013). These teams enable ongoing knowledge exchange and coordination across increasingly differentiated units (Majchrzak et al., 2012; Pinto et al., 1993). This insight provides two theoretical extensions. First, it advances ambidexterity theory by illustrating that the magnitude of

organizational change dictates the degree of structural separation required: the more transformational the transition (e.g., toward platform thinking), the more necessary it becomes to isolate exploration structurally. Second, it shows that team-level cross-functionality operates as a compensatory mechanism, mitigating the rigidity and fragmentation typically associated with structural ambidexterity. In doing so, we respond directly to calls for understanding the multilevel architecture of ambidexterity (Raisch & Birkinshaw, 2008; Zimmermann et al., 2015) and offer empirical grounding for the idea that ambidexterity is not a static structural choice but a dynamic interplay of separation and integration mechanisms evolving with the tensions an organization faces.

6.2. Managerial Implications

Our study offers three actionable implications for managers embarking on platformization.

First, we suggest mapping platformization tensions before redesigning structures. Given that platformization does not unfold as a smooth technological upgrade but as a succession of organizational tensions that gradually involve the overall OEM's business model (from value delivery to value creation to value capture), managers should diagnose which tension their firm is currently navigating before intervening organizationally. For instance, premature structural separation (e.g., spinning off a digital unit before digital services have gained internal legitimacy) may isolate exploration too early, reducing the organizational connections it needs to succeed.

Second, our study recommends aligning agile adoption with the platformization phase that the OEM is navigating. A central operational insight from our findings is that agile methodologies function not merely as project management tools, but as organizational change mechanisms whose scope should expand progressively alongside the platformization process. From an initial period of confinement to small cross-functional teams to prevent contamination by the traditional waterfall logic governing the core business, to fully agile-inspired coordination routines with external partners, the adoption of agile practices within the OEM increased over time. Consistent with our

first managerial contribution, this progressive agile adoption reflects a deliberate managerial choice to equip the organization with coordination mechanisms capable of aligning an increasing number of heterogeneous teams as platformization tensions broaden their scope across business model activities (from value delivery to value creation to value capture). Rather than an inevitable adaptation to external pressure, it represents an intentional organizational decision that managers can consciously calibrate, expanding agile practices precisely when and because the exploration-exploitation conflict demands broader cross-functional alignment.

Third, we highlight how the use of physical spaces can serve as levers for cultural alignment between explorative and exploitative units. Woody's relocation of its Digital Services team to the showroom entrance is a low-cost, high-impact example of how workspace design can signal the OEM's broader priorities to the organization. In more general terms, managers can replicate this principle across trade fair booths, client visit itineraries, and co-located workspaces, thus making the explorative units on the central stage.

6.3. Limitations and Future Research Avenues

This study offers a dynamic, organizationally embedded account of how manufacturers advance through platformization by resolving sequential tensions and recombining mechanisms of structural separation and cross-functional integration. While the findings contribute to the theoretical refinement of platformization, business model innovation, and multilevel ambidexterity, several limitations create opportunities for further research.

First, our insights derive from an in-depth longitudinal case of a single OEM operating in a specific industrial context. Although this setting enabled us to capture the fine-grained organizational dynamics underlying platformization, it may limit the generalizability of the process model. Future research could extend our framework through comparative or multi-case studies (Eisenhardt and Graebner, 2007; Eisenhardt, 2021), sampling firms with different organizational structures,

governance systems, or levels of digital transformation maturity. Such designs would help to validate, contrast, or refine the tension-based transition model we propose.

Second, the case firm is a market-leading OEM with substantial resources and a long-standing industrial reputation. Research should examine platformization in more constrained settings, such as second-tier manufacturers or SMEs with tighter financial and human resource constraints and reduced exposure to external innovation stimuli. These contexts may surface alternative organizational tensions or different sequences of business model adjustments.

Third, our empirical context reflects a complex product–system (CoPS) industry (Hobday et al., 2000). Future studies could explore platformization in other extreme CoPS environments, such as space (Manotti et al., 2025) or nuclear (Locatelli et al., 2013), where technological uncertainty, safety constraints, and ecosystem interdependencies are even more pronounced. Conversely, platformization in low-tech but high-reputation industries, such as fashion or luxury (Sanasi et al., 2021), may reveal distinct tensions linked to symbolic value, creativity, or brand stewardship.

Fourth, this study mainly focuses on organizational mechanisms rather than ownership structures or governance arrangements. Yet, platformization processes in manufacturing often unfold within family-owned firms or private equity-backed groups, each with unique strategic priorities and ambidexterity challenges. Family firms, for instance, balance innovation with strong identity and legacy preservation (De Massis et al., 2016; Sasaki & Ravasi, 2024), which may intensify or reshape the tensions we identified. Private equity investors, instead, tend to emphasize exploitation and operational efficiency (Bauer et al., 2018; Cefis et al., 2020), potentially constraining the creation of exploratory digital units. Future research should therefore investigate how ownership and governance configurations influence the design and sequencing of organizational mechanisms during platformization.

REFERENCES

- Adner, R. (2017). Ecosystem as Structure: An Actionable Construct for Strategy. *Journal of Management*, 43(1), 39-58.
- Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization science*, 20(4), 696-717.
- Autio E, Nambisan S, Thomas LDW, Wright M. (2018). Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*. Volume 12, Pages 72–95.
- Baines, T., Bigdeli, A. Z., Sousa, R., & Schroeder, A. (2020). Framing the servitization transformation process: A model to understand and facilitate the servitization journey. *International Journal of Production Economics*, 221, 107463.
- Baron, O., Chen, X., & Li, Y. (2023). Omnichannel services: The false premise and operational remedies. *Management Science*, 69(2), 865-884.
- Bauer, F., Strobl, A., Dao, M. A., Matzler, K., & Rudolf, N. (2018). Examining links between pre and post M&A value creation mechanisms, Exploitation, exploration and ambidexterity in central European SMEs. *Long Range Planning*, 51(2), 185-203.
- Benitez G.B, Ayala N.F, Frank A.G (2020). Industry 4.0 innovation ecosystems: An evolutionary perspective on value cocreation. *International Journal of Production Economics*, Volume 228, 107735.
- Benitez, G. B., Ghezzi, A., & Frank, A. G. (2023). When technologies become Industry 4.0 platforms: Defining the role of digital technologies through a boundary-spanning perspective. *International Journal of Production Economics*, 260, 108858.
- Berends, H., & Deken, F. (2021). Composing qualitative process research. *Strategic Organization*, 19(1), 134-146.
- Bianchi, M., Marzi, G., & Dabić, M. (2022). Guest editorial: agile beyond software, in search of flexibility in a wide range of innovation projects and industries. *IEEE transactions on engineering management*, 69(6), 3454-3458.
- Birkinshaw, J., & Gupta, K. (2013). Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives*, 27(4), 287-298.
- Birkinshaw, J., Zimmermann, A., & Raisch, S. (2016). How do firms adapt to discontinuous change? Bridging the dynamic capabilities and ambidexterity perspectives. *California management review*, 58(4), 36-58.
- Cao, L., Sarkar, S., Ramesh, B., Mohan, K., & Park, E. H. (2024). Shift of ambidexterity modes: An empirical investigation of the impact of artificial intelligence in customer service. *International journal of information management*, 76, 102773.

- Cefis, E., Marsili, O., & Rigamonti, D. (2020). In and out of balance: industry relatedness, learning capabilities and post-acquisition innovative performance. *Journal of Management Studies*, 57(2), 210-245.
- Cenamor J., Rönnerberg D., Sjödin D., Parida V. (2017). Adopting a platform approach in servitization: Leveraging the value of digitalization, *International Journal of Production Economics*, Volume 192, Pages 54-65.
- Chakma, R., Paul, J., & Dhir, S. (2021). Organizational ambidexterity: A review and research agenda. *IEEE Transactions on Engineering Management*, 71, 121-137.
- Clauss, T. (2017). Measuring business model innovation: conceptualization, scale development, and proof of performance. *R&d Management*, 47(3), 385-403.
- Codini, A. P., Abbate, T., & Petruzzelli, A. M. (2023). Business Model Innovation and exaptation: A new way of innovating in SMEs. *Technovation*, 119, 102548.
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative sociology*, 13(1), 3-21.
- Corsaro, D., & Maggioni, I. (2022). Sales transformation: conceptual domain and dimensions. *Journal of Business & Industrial Marketing*, 37(3), 686-703.
- Dalenogare, L. S., Benitez, G. B., Ayala, N. F., & Frank, A. G. (2018). The expected contribution of Industry 4.0 technologies for industrial performance. *International Journal of production economics*, 204, 383-394.
- De Massis, A., Frattini, F., Kotlar, J., Petruzzelli, A. M., & Wright, M. (2016). Innovation through tradition: Lessons from innovative family businesses and directions for future research. *Academy of Management Perspectives*, 30(1), 93-116.
- Denoo, L., Yli-Renko, H., & Clarysse, B. (2022). The impact of customer ties and industry segment maturity on business model adaptation in an emerging industry. *Strategic Entrepreneurship Journal*, 16(3), 602-632.
- Dmitrijeva, J., Schroeder, A., Bigdeli, A. Z., & Baines, T. (2022). Paradoxes in servitization: A processual perspective. *Industrial Marketing Management*, 101, 141-152.
- Dmitrijeva, J., Schroeder, A., Ziaee Bigdeli, A., & Baines, T. (2020). Context matters: how internal and external factors impact servitization. *Production Planning & Control*, 31(13), 1077-1097.
- Eisenhardt, K. M. (2021). What is the Eisenhardt Method, really?. *Strategic organization*, 19(1), 147-160.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), 25-32.
- Filosa, C., Jovanovic, M., Agostini, L., & Nosella, A. (2025). Pivoting B2B platform business models: From platform experimentation to multi-platform integration to ecosystem envelopment. *International Journal of Production Economics*, 280, 10946

- Flores-García, E., Jeong, Y., Liu, S., Wiktorsson, M., & Wang, L. (2023). Enabling industrial internet of things-based digital servitization in smart production logistics. *International journal of production research*, 61(12), 3884-3909.
- Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go?. *Journal of management*, 43(1), 200-227.
- Frank A.G., Mendes G.H.S, Ayala N.F, Ghezzi A. (2019). Servitization and Industry 4.0 convergence in the digital transformation of product firms: A business model innovation perspective. *Technological Forecasting and Social Change*, Volume 141, Pages 341-351.
- Gibson, C., & Birkinshaw, J. (2004). Contextual determinants of organizational ambidexterity. *Academy of Management Journal*, 47(2), 209-226.
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational research methods*, 16(1), 15-31.
- Goffin, K., Åhlström, P., Bianchi, M., & Richtnér, A. (2019). Perspective: State-of-the-art: The quality of case study research in innovation management. *Journal of Product Innovation Management*, 36(5), 586-615.
- Greven, A., Kruse, S., Vos, A., Strese, S., & Brettel, M. (2023). Achieving product ambidexterity in new product development: The role of middle managers' dynamic managerial capabilities. *Journal of Management Studies*, 60(7), 1786-1818.
- Grönroos, C., & Helle, P. (2010). Adopting a service logic in manufacturing: Conceptual foundation and metrics for mutual value creation. *Journal of service management*, 21(5), 564-590.
- Heikinheimo, M., Hautamäki, P., Julkunen, S., & Koponen, J. (2024). B2B service sales on a digital multi-sided platform: Transformation from value chains to value networks. *Industrial Marketing Management*, 116, 26-39.
- Hendricks, L., Matthyssens, P., & Kowalkowski, C. (2025). The Co-evolution of actor engagement and value Co-creation on digital platforms. *International Journal of Production Economics*, 279, 109467.
- Hobday, M., Rush, H., & Tidd, J. (2000). Innovation in complex products and system. *Research policy*, 29(7-8), 793-804.
- Huikkola T., Kohtamäki M., Rabetino R., Makkonen H., Holtkamp P. (2022). Overcoming the challenges of smart solution development: Co-alignment of processes, routines, and practices to manage product, service, and software integration. *Technovation*, Volume 118, 102382.
- Jacobides MG, Cennamo C, Gawer A. Towards a theory of ecosystems. *Strategic Management Journal*. 2018; 39: 2255–2276.
- Jacobides, M. G., Cennamo, C., & Gawer, A. (2024). Externalities and complementarities in platforms and ecosystems: From structural solutions to endogenous failures. *Research Policy*, 53(1), 104906.

- Jansen, J. J., George, G., Van den Bosch, F. A., & Volberda, H. W. (2008). Senior team attributes and organizational ambidexterity: The moderating role of transformational leadership. *Journal of management studies*, 45(5), 982-1007.
- Jansen, J. J., Simsek, Z., & Cao, Q. (2012). Ambidexterity and performance in multiunit contexts: Cross-level moderating effects of structural and resource attributes. *Strategic management journal*, 33(11), 1286-1303.
- Jovanovic, M., Sjödin, D., & Parida, V. (2022). Co-evolution of platform architecture, platform services, and platform governance: Expanding the platform value of industrial digital platforms. *Technovation*, 118, 102218.
- Kang, J., & Kim, S. J. (2020). Performance implications of incremental transition and discontinuous jump between exploration and exploitation. *Strategic Management Journal*, 41(6), 1083-1111.
- Kapoor, K., Bigdeli, A. Z., Schroeder, A., & Baines, T. (2022). A platform ecosystem view of servitization in manufacturing. *Technovation*, 118, 102248.
- Kohtamäki, M., Einola, S., & Rabetino, R. (2020). Exploring servitization through the paradox lens: Coping practices in servitization. *International journal of production economics*, 226, 107619.
- Lafuente, E., & Sallan, J. M. (2024). Digitally powered solution delivery: The use of IoT and AI for transitioning towards a solution business model. *International Journal of Production Economics*, 277, 109383.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management review*, 24(4), 691-710.
- Lavie, D., Stettner, U., & Tushman, M. L. (2010). Exploration and exploitation within and across organizations. *The Academy of Management Annals*, 4(1), 109-155.
- Lerch, C. M., Horvat, D., & Jasny, J. (2024). When manufacturers turn into digital platform providers: A transformation model to understand the platformization pathway. *International Journal of Production Economics*, 273, 109235.
- Locatelli, G., Mancini, M., & Todeschini, N. (2013). Generation IV nuclear reactors: Current status and future prospects. *Energy Policy*, 61, 1503-1520.
- Luger, J., Raisch, S., & Schimmer, M. (2018). Dynamic balancing of exploration and exploitation: The contingent benefits of ambidexterity. *Organization science*, 29(3), 449-470.
- Majchrzak, A., More, P. H., & Faraj, S. (2012). Transcending knowledge differences in cross-functional teams. *Organization science*, 23(4), 951-970.
- Manotti, J., Sanasi, S., & Ghezzi, A. (2025). Sustainable business model innovation: A technology affordance perspective in the New Space Economy. *Technovation*, 143, 103226.
- March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1), 71-87.

- Mattila, M., Yrjölä, M., & Hautamäki, P. (2021). Digital transformation of business-to-business sales: what needs to be unlearned?. *Journal of Personal Selling & Sales Management*, 41(2), 113-129.
- Mom TJM, Van den Bosch FAJ, Volberda HW (2009) Understanding variation in managers' ambidexterity: Investigating direct and interaction effects of formal structural and personal coordination mechanisms. *Organ. Sci.* 20(4):812–828.
- Mom, T. J., Chang, Y. Y., Cholakova, M., & Jansen, J. J. (2019). A multilevel integrated framework of firm HR practices, individual ambidexterity, and organizational ambidexterity. *Journal of Management*, 45(7), 3009-3034.
- Momeni, K., Raddats, C., & Martinsuo, M. (2023). Mechanisms for developing operational capabilities in digital servitization. *International Journal of Operations & Production Management*, 43(13), 101-127.
- O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of management Perspectives*, 27(4), 324-338.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. John Wiley & Sons.
- Ozcan, P., Han, S., & Graebner, M. E. (2017). Single cases: The what, why, and how. In *The Routledge companion to qualitative research in organization studies* (pp. 92-112). Routledge.
- Pinto, M. B., Pinto, J. K., & Prescott, J. E. (1993). Antecedents and consequences of project team cross-functional cooperation. *Management science*, 39(10), 1281-1297.
- PwC's 26th Annual Global CEO Survey (2023). Accessible here: <https://strategybusiness.pwc.com/business-ecosystems-better-together/p/1>
- Raisch S, Birkinshaw J (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. *J. Management* 34(3): 375–409.
- Riemensperger, F., & Falk, S. (2020). How to capture the B2B platform opportunity. *Electronic Markets*, 30(1), 61-63.
- Rodríguez, R., Svensson, G., & Mehl, E. J. (2020). Digitalization process of complex B2B sales processes—Enablers and obstacles. *Technology in Society*, 62, 101324.
- Rogan M, Mors ML (2014) A network perspective on individual-level ambidexterity in organizations. *Organ. Sci.* 25(6):1860–1877.
- Sanasi, S., Manotti, J., & Ghezzi, A. (2021). Achieving agility in high-reputation firms: Agile experimentation revisited. *IEEE Transactions on Engineering Management*, 69(6), 3529-3545.
- Sasaki, I., & Ravasi, D. (2024). Historical consciousness and bounded imagination: How history inspires and shapes innovation in long-lived firms. *Academy of Management Discoveries*, 10(1), 63-94.

- Şimşek, T., Öner, M. A., Kunday, Ö., & Olcay, G. A. (2022). A journey towards a digital platform business model: A case study in a global tech-company. *Technological Forecasting and Social Change*, 175, 121372.
- Sjodin D., Parida V., Palmiè M., Wincent J. (2021). How AI capabilities enable business model innovation: scaling AI through co-evolutionary processes and feedback loops. *Journal of Business Research*, Volume 134, Pages 574–587.
- Sjodin D., Parida, V., Jovanovic, M., Visnjic, I. (2020). Value creation and value capture alignment in business model innovation: a process view on outcome-based business models. *Journal of Product Innovation Management*. Volume 37, Pages 158–183.
- Sjodin, D., Parida, V., & Visnjic, I. (2022). How can large manufacturers digitalize their business models? A framework for orchestrating industrial ecosystems. *California Management Review*, 64(3), 49-77.
- Spieth, P., Breitenmoser, P., & Röth, T. (2025). Business model innovation: Integrative review, framework, and agenda for future innovation management research. *Journal of Product Innovation Management*, 42(1), 166-193.
- Stonig, J., Schmid, T., & Müller-Stewens, G. (2022). From product system to ecosystem: how firms adapt to provide an integrated value proposition. *Strategic Management Journal*, 43(9), 1927-1957.
- Struwe, S., & Slepnirov, D. (2023). Unlocking digital servitization: A conceptualization of value co-creation capabilities. *Journal of Business Research*, 160, 113825.
- Suppatvech, C., Godsell, J., & Day, S. (2019). The roles of internet of things technology in enabling servitized business models: A systematic literature review. *Industrial Marketing Management*, 82, 70-86.
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long range planning*, 43(2-3), 172-194.
- Thomas, L. D., Ritala, P., Karhu, K., & Heiskala, M. (2025). Vertical and horizontal complementarities in platform ecosystems. *Innovation*, 27(3), 369-393.
- Tian J., Coreynen W., Matthyssens P., Shen L. (2022). Platform-based servitization and business model adaptation by established manufacturers. *Technovation*, Volume 118, 102222.
- Tienken, C., Classen, M., & Friedli, T. (2023). Engaging the sales force in digital solution selling: how sales control systems resolve agency problems to create and capture superior value. *European Journal of Marketing*, 57(3), 794-833.
- Timmers, P. (1998). Business models for electronic markets. *Electronic markets*, 8(2), 3-8.
- Turner, N., Swart, J., & Maylor, H. (2013). Mechanisms for managing ambidexterity: A review and research agenda. *International journal of management reviews*, 15(3), 317-332.
- Tushman ML, O'Reilly CA III (1996) Ambidextrous organizations: Managing evolutionary and revolutionary change. *Calif. Management Rev.* 38(4):8–30.

- Vandermerwe, S., & Rada, J. (1988). Servitization of business: Adding value by adding services. *European management journal*, 6(4), 314-324.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, Volume 68(1), Pages 1-17.
- Vendrell-Herrero, F., Bustinza, O. F., Opazo-Basaez, M., & Gomes, E. (2023). Treble innovation firms: Antecedents, outcomes, and enhancing factors. *International Journal of Production Economics*, Volume 255, 108682.
- Vendrell-Herrero, F., Bustinza, O. F., Parry, G., & Georgantzis, N. (2017). Servitization, digitization and supply chain interdependency. *Industrial marketing management*, 60, 69-81.
- Wooldridge B, Floyd SW (1990) The strategy process, middle management involvement and organizational performance. *Strategic Management J.* 11(3):231–24.
- Zimmermann, A., Raisch, S., & Birkinshaw, J. (2015). How is ambidexterity initiated? The emergent charter definition process. *Organization Science*, Volume 26(4), Pages 1119-1139.
- Zoltners, A. A., Sinha, P., Sahay, D., Shastri, A., & Lorimer, S. E. (2021). Practical insights for sales force digitalization success. *Journal of Personal Selling & Sales Management*, 41(2), 87-102.
- Zott, C., & Amit, R. (2010). Business model design: An activity system perspective. *Long range planning*, 43(2-3), 216-226.

LIST OF FIGURES

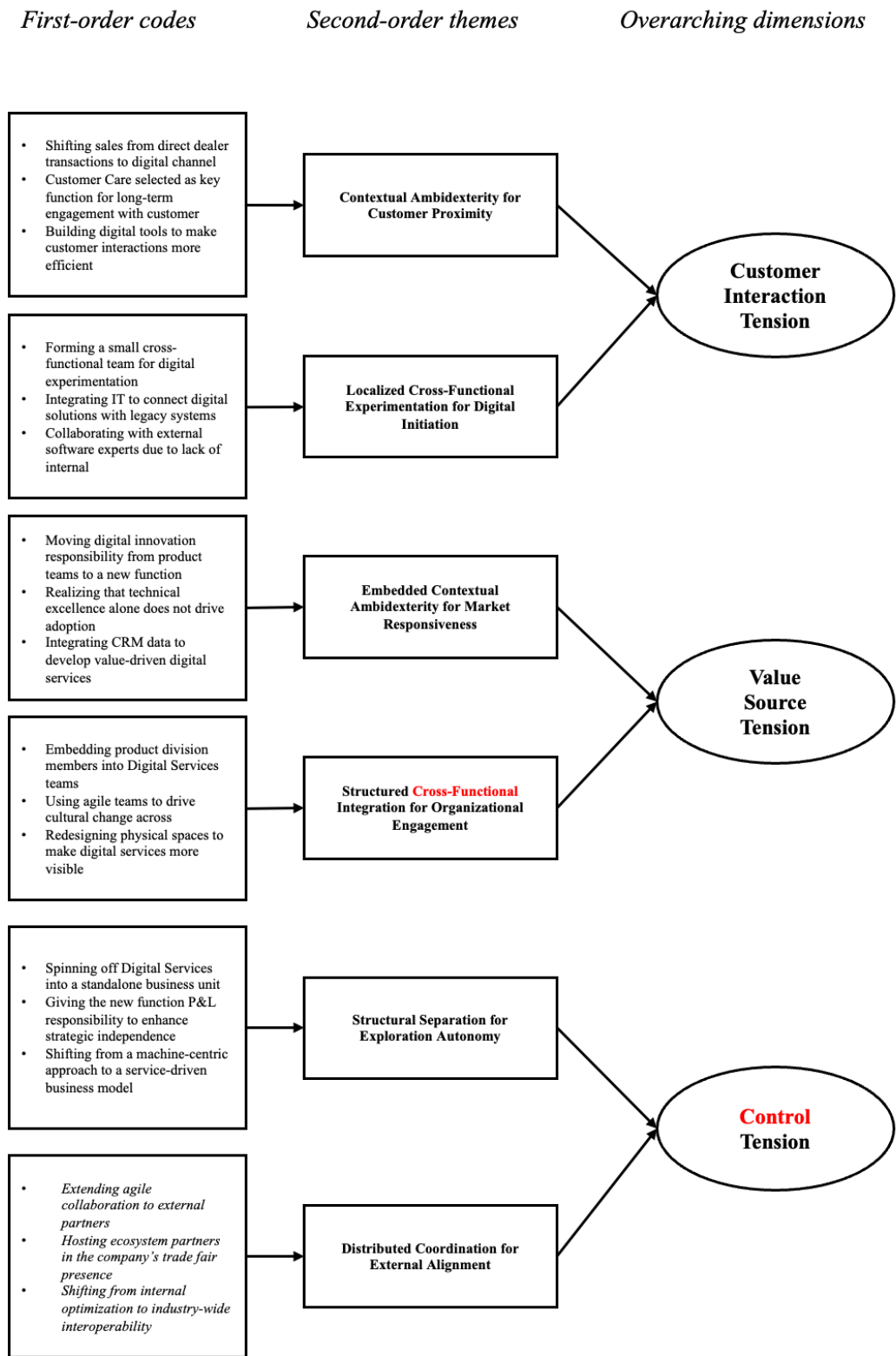


Figure 1 - Data Structure

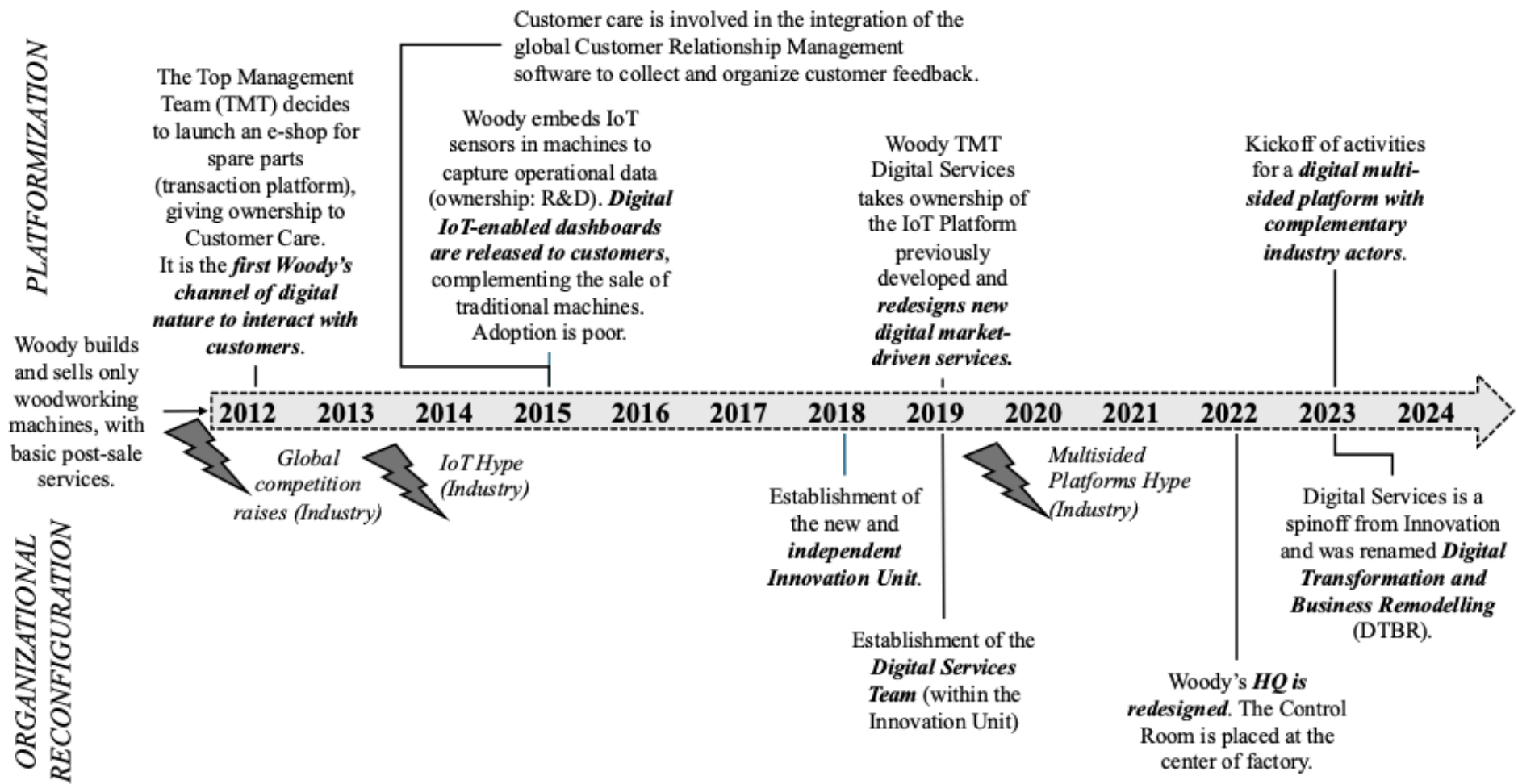


Figure 2 – Woody’s Chronology of Events.

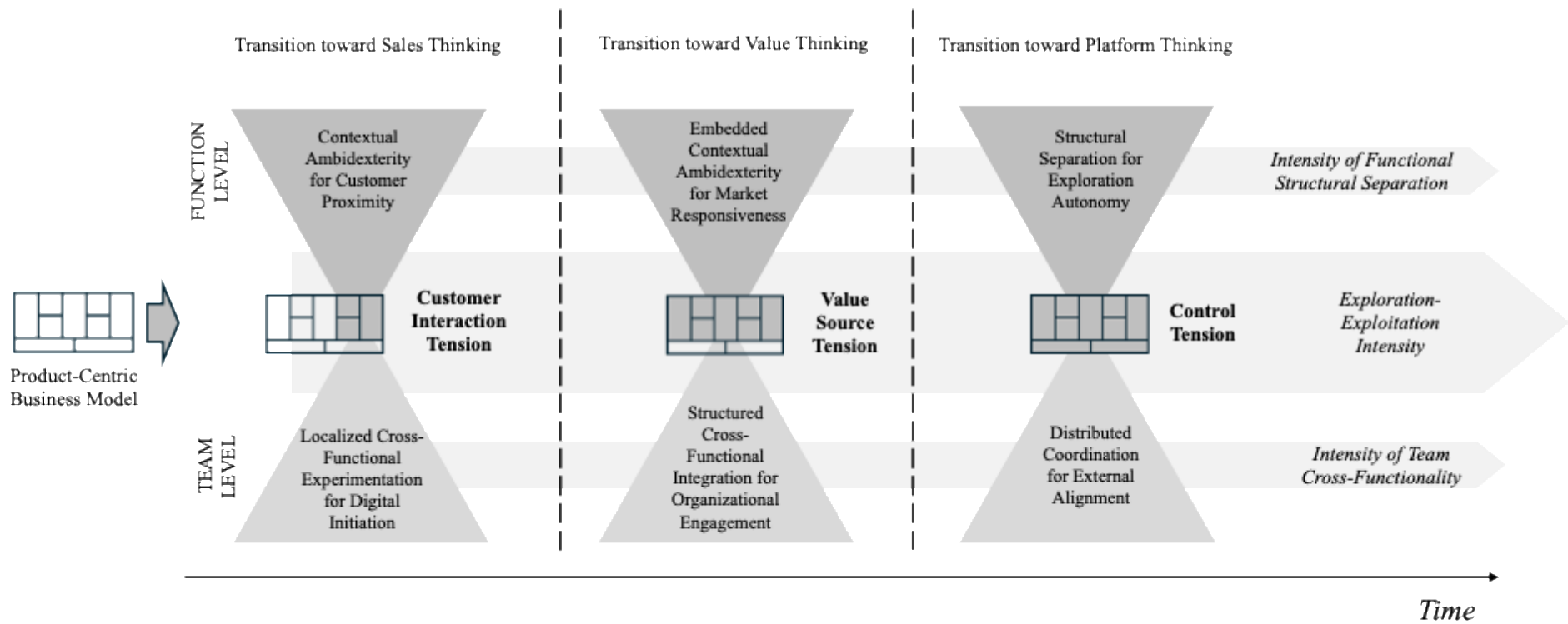


Figure 3 – A model of organizational mechanisms to cope with tensions through the digital platformization process in manufacturing.

