Digital Sourcing Within Digital Platform Ecosystems: A Complementor Perspective

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Abstract. This multi-case study explores the digital sourcing practices of two complementor firms within two digital platform ecosystems (DPE) owned by Microsoft and SAP, respectively. We draw on organizational ambidexterity and social mechanisms as lenses to analyze how the two complementors address the paradoxical practices of exploration and exploitation within the context of their respective DPE. Our analysis suggests that the identified social mechanisms illustrate how each complementor engages in digital sourcing to create new ideas with other DPE actors that will nurture capability development (exploration) and transform these ideas into practice (exploitation). We identify two modes of ambidexterity, whereby one capability is used to improve the other, i.e., '*exploration-for-exploitation*,' an orientation towards continually improving the quality of the service delivery, and '*exploration-through-exploitation*,' an approach of project-driven learning.

Keywords: Digital platform ecosystems · Complementors · Social mechanisms · Organizational ambidexterity

1 Introduction

Research on digital platform ecosystems (DPEs) has received significant attention in the literature over the past decade [36], particularly in topics such as network effects and value creation and capture [9]. The academic literature reveals that complementors in DPEs are primarily addressed from the platform owner's perspective [19, 49]. In their review of the literature on DPE, Hein et al. [24] recommend that more research be conducted on the role of complementors, as little is known about how they can influence value-creating mechanisms.

Complementors represent external actors that join the DPE and create complementary products for platform users through digital sourcing [24]. Following Engert et al.

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[15] and Baiyere et al. [4], we define the process of providing digital products or services, such as software development, cloud computing, or data analytics, as digital sourcing. Examining the practices of complementors on a digital platform is inherently connected to the digital sourcing literature, as both focus on how external entities contribute to and derive value from digital ecosystems through collaboration, resource sharing, and technological integration. DPEs are ideal for digital sourcing due to low entry barriers, direct market access, and network effects. However, as Krancher et al. [29] suggest, the digitalization of services and the shift to platform-based service delivery introduce new challenges for client firms. With services hosted on a platform, client firms must now bridge the gap between their digital systems and those offered by the complementors through the platform.

In this context, complementors can leverage digital platforms to reach and serve a large and diverse customer base, benefiting from the platform's core functionality and reputation [47]. They face two essential challenges. First, they must develop complements (complementary services/products) that contribute to the platform's core. Hence, complementors sustain owner and client relationships to explore new ideas and foster capability development [8]. Second, they need to ensure the quality of existing complements. This corresponds to exploiting existing products and services [24]. If a complementor is unaware of balancing exploitation and exploration, this may hinder their role within the DPE. This is even more important in highly dynamic environments, such as the business management consulting industry, which is characterized by increasing requirements to develop new services that satisfy customers' changing demands [10] and technology-driven short innovation cycles [48], with an inherent emphasis on project execution, quality, and delivery.

Balancing exploitation and exploration practices represents the core tenet of organizational ambidexterity (OA) [18]. The emergence of OA can be described as a process encompassing a series of individual and collective practices and events that unfold over time within a specific organizational context [21]. Although most organizational ambidexterity research focuses on the firms' organizational level [35], a less analyzed path for firms to develop ambidexterity is engagement in collaboration with external actors [27]. It has been shown that "inter-organizational coordination is achieved through social mechanisms, that are, governance mechanisms based on social relationships and networks" [6].

Research on inter-organizational relationships (IOR) has undergone a significant shift over the past twenty years. Instead of concentrating on specific technologies, IOR researchers focus on collaboration and the knowledge that users possess and share about technologies [16, 28]. Thus, this line of thought highlights the importance of identifying the mechanisms that enable partners to cooperate effectively and fully utilize their shared technological tools. Rooted in the dynamics of relationships and the recursivity of action and its context [21], the concept of social mechanisms seems appropriate for use in research on the field of DPE, both conceptually and as the basis for a methodological strategy [3].

We consider social mechanisms as being processes composed of actions, events [20], and "chains or aggregations of actors confronting problem situations and mobilizing more or less habitual responses" [24, p. 368]. DPE literature provides limited

guidelines on giving directions for the exploitation and exploration of new technologies (i.e., complements on a DPE) [31]. As more research is needed to better understand how organizations develop ambidexterity in the context of DPE while engaging in digital sourcing practices, the goal of this research is to explore how complementors balance practices of exploitation and exploration based on the following two research questions:

RQ 1: How do complementors within a digital platform ecosystem provide digital sourcing to the other actors on the platform (owner, clients, other complementors)?
RQ2: What are the social mechanisms for developing organizational ambidexterity on a DPE?

We drew on organizational ambidexterity and social mechanisms as theoretical lenses to answer the research questions. We conducted a multi-case study of two business management consulting firms, one German (Noventum) and one Canadian (XRM Vision), for which balancing exploitation (essential for the financial bottom line) and exploration (a differentiator among other DPE complementors) has become part of their identity and mission. Our research contributes to the theoretical understanding of ambidexterity in DPEs. It provides practical insights for complementors striving to leverage digital sourcing for sustained innovation and growth.

2 Theoretical Background

2.1 Digital Platform Ecosystems and Complementors

Derived from biology, the term ecosystem in an economic context generally refers to a group of interacting firms that depend on each other's activities. According to Ceccagnoli et al. [7], a platform ecosystem comprises the platform's sponsor and all complement providers that enhance the platform's value to consumers. Platforms are a key component of many technological systems, providing a foundation for other related products, services, and technologies to be built upon [17]. The increasing prevalence of digital technology has expanded the significance of platforms in the IT domain [46]. Digital platforms are distinct from applications due to their ever-changing environment, an increasingly diverse user base, and the frequent introduction of new technological features and services [23]. As such, platform designs must consider principles that cater to the requirements of multiple distinct user groups.

According to Boudreau & Hagiu [5], digital platforms are technological entities that facilitate value creation by utilizing socio-technical means to orchestrate an autonomous ecosystem. This ecosystem comprises platform owners, stakeholders, complementors, and digital-platform-specific applications [40]. Complementors represent external actors that join the DPE and create complementary products for platform users through digital sourcing.

Complementors in a DPE may explore emerging technologies provided by technology suppliers while exploiting existing technologies simultaneously [38]. Research suggests that complementors should focus on products that the platform leader is unlikely to offer, thereby contributing to the innovation of the platform [11]. This platform characteristic, generativity, is defined as the "overall capacity to produce unprompted changes driven by large, varied, and uncoordinated audiences" [24, p. 89]. At the same time,

complementors must ensure the expected quality of existing services, which involves leveraging existing products and services.

Connecting to the platform allows complementors to create complementary innovations and access the platform's customers directly or indirectly. Examples include independent business solutions vendors affiliating with the IBM Power platform [43] and developers producing video games for specific consoles [9]. A digital platform ecosystem represents a system that comprises a platform owner that implements technical, business, and social mechanisms to facilitate value creation on a digital platform between the platform owner and autonomous complementors [24].

Complementors that explore new opportunities often utilize mechanisms such as sensing and seizing through business model design. These mechanisms correspond to complementors' dynamic capabilities to respond to technological developments [1]. In parallel, complementors must ensure the expected quality of existing digital sourcing services, which corresponds to leveraging existing products and services. This corresponds to the concept of organizational ambidexterity, which can be achieved through both intra- and inter-organizational relationships.

2.2 Organizational Ambidexterity Through Intra- and Inter-organizational Relationships

Defined as simultaneous actions undertaken by firms to address two dissimilar situations simultaneously, to explore and exploit, organizational ambidexterity (OA) represents the ability of an organization to compete in markets where efficiency and incremental improvement are valued and to also compete in markets where flexibility and experimentation are needed [26]. Exploration is linked to activities that create and discover new opportunities [27], while exploitation is described as enhancing current operational quality by leveraging existing organizational resources [35].

When achieving organizational ambidexterity, most research focuses on the organizational level or below [35]. However, a growing body of work examines how interorganizational relationships (IORs) can be leveraged to achieve this goal. Several studies on technology alliance diversity have shown that collaborating with different types of partners can lead to new knowledge combinations and improved innovation outcomes [42, 45]. This has led some researchers to suggest that organizations can balance conflicting activities by engaging in interorganizational relationships [25]. In open innovation processes, organizational boundaries are often more fluid, and firms work closely with different actors in their environment to generate new ideas. However, partnering firms must establish an organizational design to pursue alignment and adaptation [44].

The pertinence of OA in the context of ecosystems for IOR is emphasized by Haghshenas and Østerlie [22], who found that ecosystem actors not only explored new opportunities in entering the DPE but also sought strategies to exploit and further strengthen their existing capabilities and position within the ecosystem. We conjecture that complementors will engage in exploration activities with the platform owner and other complementors, as well as in exploitation and exploration activities with their clients.

2.3 Social Mechanisms and Organizational Ambidexterity: A Complementary Perspective

The dynamic interplay between organizational ambidexterity (OA) and social mechanisms is central to understanding how complementors navigate the tensions between exploration and exploitation within DPEs. While OA provides the conceptual framework for balancing these dual imperatives, social mechanisms are the operational enablers that facilitate this balance through structured inter-organizational interactions.

Social mechanisms broadly refer to the processes, structures, and interactions that facilitate coordination, knowledge exchange, and governance within and across organizations [3, 21]. They unfold in time and emerge from the narratives of events [3], practices, and interactions that cause the outcomes of the inter-organizational integration process [6]. Social mechanisms can be categorized into relational mechanisms, which concentrate on interpersonal and inter-organizational relationships, and structural mechanisms, which relate to formal governance structures, regulations, and institutionalized coordination efforts [6].

First, relational mechanisms—such as trust, reciprocity, and repeated interactions—enable complementors to explore new opportunities while maintaining stable exploitative relationships with platform owners, clients, and other ecosystem participants [6, 12]. These relational ties lower uncertainty, allowing firms to experiment with new solutions while ensuring a commitment of resources to ongoing service delivery. In a network arrangement, such as a digital platform, social capital and embeddedness within network relationships promote knowledge sharing and innovation, while ensuring continuity in business operations [30, 39]. In platform ecosystems, relational mechanisms enable complementors to establish strategic partnerships, engage in coopetition, and develop long-term collaboration strategies that foster ambidexterity [37].

Second, structural mechanisms such as governance frameworks, platform policies, and role definitions shape how organizations engaged in inter-organizational arrangements transition between exploratory innovation and exploitative efficiency [24, 27]. These governance structures regulate access to platform resources and create structured learning opportunities that enable complementors to refine existing solutions while experimenting with novel offerings [40]. In the context of OA, structural mechanisms provide predefined pathways for exploration and exploitation, allowing complementors to innovate within clear boundaries while leveraging platform resources for efficient service delivery [24].

By embedding ambidextrous capabilities in structured social interactions, complementors enhance their ability to adapt, co-create, and maintain competitive differentiation within a DPE. Thus, instead of treating OA and social mechanisms as separate constructs, we suggest they should be viewed as mutually reinforcing, where social mechanisms offer the coordination, trust, and governance structures essential for sustaining ambidexterity in complex digital platform environments.

3 Research Method

In the context of a DPE, collaborating organizations are best analyzed through a process of theorization that focuses on how decisions and actions at different levels of analysis mutually shape each other [32]. Due to the complex role of complementors in DPEs, we adopted an explanatory theory-building approach from cases [14]. This methodology is suitable because it highlights the social construction and demonstrates how our theorization operates within a particular context [14]. We followed Eisenhardt's [13] recommendations. We anchored our problem definition and preliminary construct specification in the extant literature. Based on this literature, we constructed our data collection instruments following abductive logic (inference to an explanation). After entering the field, this was followed by a "flexible and opportunistic" [13, p. 533] data collection approach and an inductive within-case and cross-case data analysis.

3.1 Sampling and Data Collection

To select a complementor, we used two main criteria. We sought complementors that had no conflicting role as platform owners. Noventum provides SAP-based tailored business solutions to its banking clients. Likewise, XRM Vision is a Customer Relationship Management consulting firm specializing in digital sourcing services, including the design and implementation of Microsoft Power Platform (MPP)-based solutions. Second, we selected complementors with a high degree of autonomy and independence from the platform owner. In doing so, we identified emerging OA dimensions and mechanisms implemented by a complementor as part of a DPE collaborative initiative.

We used a two-phase approach. We began by collecting publicly available data (website information and whitepapers) related to the DPE, which helped us understand the core relationships within each ecosystem. In the second phase, we conducted semi-structured interviews based on an extensive interview guideline (or protocol) designed to contribute to the consistency and reliability of the results. The interview protocol covered the following topics: 1) Organizational strategy, i.e. strategy formalization, implementation, and employee involvement, with an emphasis on innovation and continuous improvement; 2) Knowledge absorption capabilities, i.e., organizational ability to acquire, assimilate, transform, and apply new technological and strategic knowledge; 3) Organizational culture, i.e., values, social climate, and preferred employee profiles; 4) Managerial practices, i.e., practices that promote discipline, support, trust, and goal-setting, about exploiting and exploring opportunities for innovation; 5) Ambidextrous strategies, i.e., perception of ambidexterity as an element of identity, and its integration into organizational practices; and 6) Customer relations and innovation, i.e., customer relations management, the balance between financial stability and risk-taking, and customer acceptance of innovative practices. Additionally, field notes were taken during the interviews, providing direct observations.

Informants were selected using a snowball sampling procedure. We interviewed top and division managers. The interviewees were significant as they influenced the cross-boundary collaboration process due to their roles, status, power, and experience. In total, thirteen in-depth interviews (six at Noventum and seven at XRM Vision) were conducted on-site with top and business unit managers, lasting between 45 and 90 min.

The coding process started by creating a provisional "start list" of categories based on the extant literature. All the transcripts were coded using the preliminary set of codes. The outcomes of this analysis constituted the logical chains of evidence.

3.2 Data Analysis

Our analysis was done at two levels. We analyzed the exploration and exploitation practices and mechanisms embedded within each organization to discover how different partnerships created ambidexterity and how various processes triggered firm-level ambidexterity. Next, we conducted an organization-level analysis to determine how the companies managed the ambidexterity between multiple DPE-based partnerships. We analyzed the data in three steps.

First, we studied context-related information from each company's broader organizational perspective as a complementor. The aim was to create a basic understanding of the types of services the two companies provide and how they align with other complementors within the platform ecosystem. Second, we thoroughly analyzed the interview transcripts, verifying the data as needed through follow-up telephone/Zoom calls, as well as emails. We transcribed interviews with members of different organizations (CEO, business unit leaders) and subsequently coded them in several rounds according to their ostensive and performative patterns of ambidextrous routines.

The first author took the lead (based on the collaboratively developed interview guideline), and the others commented and supplemented. The focus was on the relationship between the complementor and its clients, which, however, was structured at a high level by the relationship between the platform owner and the client. Third, we conducted a cross-case analysis using Eisenhardt's [13] suggested methods. We compared the cases to identify similarities and differences between them.

4 Findings

4.1 XRM Vision and the Microsoft Power Platform Ecosystem

In 2019, the company partnered with Microsoft and started using the new Microsoft Power Platform (MPP) toolkit to develop and sell digital sourcing services. XRM Vision acts alongside Microsoft, which owns the platform, as a complementor in its ecosystem. Microsoft offers a group of products called MPP, which are used to develop and automate complex business solutions. XRM Vision utilizes Dynamics 365, a cloud-based suite of business applications built on MPP, to deliver integrated solutions to clients. This includes combining CRM components with productivity tools (*power apps*) and artificial intelligence tools. Microsoft's MPP (Microsoft Power Platform) offers a unified approach to building data-driven solutions. To further support this approach, Microsoft uses the concept of Industry Solution Accelerators.

These accelerators are industry-specific components that serve as a foundation for Microsoft partners, such as XRM Vision, to build solutions based on industry standards and best practices, while being supported by Microsoft. With the help of these accelerators, XRM Vision was able to extend the MPP and create customized solutions for

specific industries, including local insurance brokers and the Canadian manufacturing sector. This enabled XRM Vision to deliver tailored solutions optimized for its clients' specific industry needs and requirements, while leveraging the power and flexibility of the MPP.

Intra-organizational Social Mechanisms. XRM Vision's top management has deployed several mechanisms to enable the intra-organizational flow of information, capitalize on the diversity of profiles, and generate new business opportunities and ideas. First, *Innovation islands* have been established to create synergies at the operational level at XRM Vision. To do this, temporary teams were formed with employees from the same trade (e.g., architects, analysts, developers, etc.). Management asked them to meet once a week to identify *"pain points" (Senior Architect 1, XRM Vision)*, i.e., problems or opportunities for improvement related to operations, such as delivery methods and training.

Second, *Internal hackathons* (Hack-in-a-day) were organized, and employees were invited to identify opportunities to improve the MPP tools. The objective was to develop power apps useful to XRM Vision and address real-life problems identified by its employees during project implementations with their clients. *"Hack-in-a-day is one way to expose yourself. We are creating a new way of doing things. This is our approach to corporate hackathon"* (*CEO, XRM Vision*). Third, Lunch-&-Learn & Tip-&-Tricks sessions have been held since 2019. All employees are invited to attend one-hour monthly presentations (Tip-&-Tricks) on a given topic related to XRM Vision's activities, which employees organize to provide an opportunity to share information, generate discussions, and stimulate creativity. The idea behind 'Tips-&-Tricks' was to share what an employee has recently learned in five minutes. *"These are 'wake-up calls,' so instead of spending an hour on a specific subject which may not be of interest to everyone, like in 'Lunch-&-Learn,' we have a one-hour meeting, where we address 12 subjects instead of one" (VP Operations, XRM Vision).*

Inter-organizational Social Mechanisms. In the context of a DPE, we found three categories of social mechanisms that enabled the exchange between ecosystem actors: a) platform-core relationships, b) ecosystem partner relationships, and c) platform-user relationships. By studying these three categories, we identified how XRM Vision explores new opportunities further to strengthen its capabilities and position in the DPE.

Platform-Core Relationships. We found evidence that XRM Vision established a profound relationship with the platform core owner, specifically with Microsoft. Based on the interview data, we found that Microsoft's Power Platform comprises a set of solutions regularly adapted from a technological perspective. To explore new opportunities, XRM Vision is closely aligned with Microsoft, using partner meetings in which they are informed about new functionalities (releases). In doing so, XRM Vision gains access to relevant technological opportunities. By attending partner meetings and information sessions, and studying state-of-the-art whitepapers released by Microsoft, XRM Vision can explore new ideas that may ultimately result in new products and/or services. *"When Microsoft's Power Platform arrived, we [XRM Vision] had to rethink our practices to foster innovation. To do so, business developers and architects attended several conferences organized by Microsoft on the Power Platform. By discussing the opportunities*

that the Power Platform offers, we were able to understand its possibilities and develop new solutions for our clients" (CEO, XRM Vision).

The interviewees revealed that XRM Vision recognized the full potential of Microsoft's Power Platform in developing products and services for clients. To underpin their skills and expertise in the Power Platform XRM Vision context, they decided that one of their solution architects would obtain Microsoft's Most Valuable Professional (MVP) nomination. The idea behind XRM Vision's expert (solution architect) in Microsoft Power Platform technologies was to develop new practices on this technology platform and enhance organizational knowledge. It would also promote, both externally and internally, the expertise of XRM Vision and the affordances of the Power Platform. This appointment required time investments on Eric's part and financial assets on XRM Vision. The solution architect is now recognized as an expert within the Power Platform community and by clients and partners. This enables him to deliver presentations at external partner events and create promotional materials for XRM Vision products and services. "*The goal to have an MVP was to create a significant presence on social media, easier access to Microsoft knowledgebase, to specialized and private events, and privileged access to a vast network of partners, but also competitors" (VP Operations, XRM Vision).*

Platform Client Relationships. To strengthen the relationships with platform users, XRM Vision organized several events to train platform clients to independently build applications (*power apps*). XRM Vision labeled these events *'app-in-a-day'* to illustrate the opportunities and the convenience of using the Power Platform. XRM Vision's 'app-in-a-day' event allowed it to reach platform users and reveal its services and expertise. However, these initiatives were viewed both positively and negatively.

On the one hand, XRM Vision's operations managers consider such initiatives a waste of time and money. On the other hand, business development employees perceived them as a mechanism to raise awareness of the platform's possibilities and identify and give visibility to new practices and business opportunities. *"We organized about twenty events open to all platform users called 'app-in-a-day' in which we trained approximately 300–400 people on the Power Platform" (VP Operations, XRM Vision).*

Platform Generativity. The interviews reveal that XRM Vision established ecosystem partner relationships to achieve two primary objectives: developing new applications based on the MPP toolkit and assessing the degree of test user acceptance of these new applications. To accomplish both goals, XRM Vision organized global and customized hackathons. By organizing global hackathons, XRM Vision was able to develop new applications using innovative methods and approaches. During the hackathons, they had the opportunity to co-create new power apps and gain new insights and knowledge into how these applications can create value for both the ecosystem (complementors) and partners that are competitors in the DPE, as well as for the platform core owner (Microsoft). By organizing global hackathons, they also experienced that some ecosystem partners were competitors in other client relationships.

However, XRM Vision and its ecosystem competition noticed that co-creating new applications benefited all ecosystem partners as each party needed help to develop them. Coopetition, a portmanteau of cooperation and competition, is a strategy used by members of a digital platform ecosystem to compete and collaborate for their mutual benefit

[37]. In a coopetitive environment, ecosystem members recognize that they must work together to create value for the ecosystem while competing to capture a share of that value. *"We organized a global hackathon to showcase the expertise of MPP and XRM Vision. During this hackathon, some platform users were direct competitors and co-developed knowledge about the MPP within the digital platform ecosystem" (Director Customer Relationship, XRM Vision).*

The interview data revealed that organizing hackathons with ecosystem partners was crucial for XRM Vision in developing a robust ecosystem around the MPP and understanding the possibilities and opportunities offered by the technology. Based on the knowledge accumulated during these events, XRM Vision had the opportunity to start developing Industry Solutions Accelerators. Hence, XRM Vision can continually contribute to the MPP, creating complements to the platform core (Microsoft). Since most of the MPP solutions that XRM Vision uses have been migrated and integrated back into the MPP, they contribute to the platform's core ownership and, consequently, to the DPE.

4.2 Noventum and the SAP Platform

Noventum is a 'result-driven thought leader' IT Management Consulting company with 100 employees. They support DAX-listed (German stock index) clients in their IT challenges and efforts to establish a modern company culture. Noventum's Managing Partner emphasizes a *"culture of trust and performance"* as a prerequisite for sustainable success. The company has been providing digital sourcing services to its customers to optimize their business and logistical processes, mapping them into the SAP system since 1996. The company has established a reputation for its expertise and has become a preferred partner of SAP. Noventum has the latest know-how and expertise to design effective client processes at any time. As a result, Noventum is well-equipped to provide its clients with the most up-to-date solutions and services, helping them achieve their goals and stay ahead in their respective industries.

The SAP platform ecosystem comprises various technologies, applications, and services provided by SAP to help organizations manage their business processes more efficiently. It comprises a wide range of tools and technologies that are integrated and designed to work together seamlessly. Noventum provides two critical components of the SAP platform to its clients: 1. SAP ERP (S/4HANA) – represents the core enterprise resource planning system that integrates all the business processes of an organization and provides real-time data processing and analytics capabilities, enabling organizations to make faster and better-informed decisions; and 2. SAP Business Intelligence (BI) - a suite of tools and applications that allow organizations to analyze and visualize their data, providing insights into business performance and trends.

Intra-organizational Social Mechanisms. At Noventum, exploration is recognized as inevitable (due to continuous IT innovation in the sector) and a critical differentiator from the competition. Yet, it is recognized as challenging to establish an exploration mindset within an organization where billable hours are a crucial performance metric and daily pressure is exerted by demanding project work. *"Necessary exploration is at risk of being crowded out by exploitation" (Managing partner, Noventum).*

The company has established structures and related practices that distinguish innovation (and R&D) and highlight it as a distinctive feature. Noventum organizes a cross-divisional *Trending workshop* as part of its annual strategy meeting, which focuses on assessing market innovations and reflecting on their potential for business development and positioning of business units. To achieve this, the seven Division Directors (excluding the Managing Partner) meet once a year for a full week to identify the leading IT trends in their respective markets and explore how new technologies can help Noventum enhance its solutions or develop new ones. "*In September, we sit down, and everybody gives their idea of the business plan for the following year […] So we challenge each other, and sometimes there are projects that are done jointly by several business units for the following financial year" (Division Director 1, Noventum).*

The leadership at Noventum has developed and aligned a repertoire of social mechanisms, characterized as having an "engaging management style" (managing partner, Noventum). In our interviews, we encountered enlightened and sensitive individuals (directors) who were aware of the challenges of ambidexterity. They claimed to strive for a balance between exploitation ('billable hours') and freedom, while also encouraging exploration, such as training and personal development. Noventum allows employees to take a half-day weekly to engage in individual research and idea generation.

Additionally, the Division Directors regularly organize team-building idea generation sessions (once a month). "*My developers are constantly looking for a challenge in terms of programming. I will ensure they have a room where no other departments can reach them and the team session is based on the perspective: don't blame the mistake, look for the solution, push, push, push to the solution, and don't dwell too long on mistakes" (Division Director 3, Noventum).*

Thus, we identified variations of an ambidextrous work design that effectively implements several social mechanisms to foster a culture of collaboration and knowledge sharing.

Inter-organizational Social Mechanisms. In the context of a DPE, we found three categories of social mechanisms that enabled the exchange between ecosystem actors: a) platform-core relationships, b) platform client relationships, and c) platform generativity.

Platform-Core Relationships. The privileged relationship between Noventum and SAP involves Noventum, as a partner, being granted certain benefits and advantages in exchange for its commitment to selling SAP's products and services. This requires access to exclusive training and support resources, preferential pricing on SAP products and services, early access to new product releases and updates, and the ability to participate in joint marketing and sales initiatives with SAP. Overall, both parties work together to drive sales and revenue growth while delivering high-quality products and services to customers.

Platform Client Relationships. Over the years, Noventum has found that one way to improve a project is by sharpening it, which can prevent future building obstacles and enable the incorporation of new technologies and methods. *"Our approach involves enhancing a project that is already 80% complete to deliver the best possible outcome for the customer. This provides an opportunity for our consultant to introduce new ideas and innovations. We are looking for ways to integrate this into our client projects and prioritize learning how to utilize it effectively" (Division Director 2, Noventum).*

A typical scenario is that Noventum's clients in the SAP platform ecosystem approach a Noventum consultant when they plan to purchase a new software or a new release, which typically requires some customization. Noventum organizes a *knowledge-sharing forum* comprising several meetings, where the client is provided with knowledge transfer and demonstrations to better understand the product before committing to the project. Sometimes, when the client enquires about Noventum's consultancy approach, it initiates a conversation about processes, data owners, stakeholders, and other key factors. This discussion helps the client better understand Noventum's method, process model, and distinctive contribution, which is both a) a more nuanced and specific understanding of the clients' problems and needs and b) a unique set of project management skills, e.g., in post-merger integration. *"The message we want to convey is that we prioritize understanding our client's needs and ensuring they are on board with our business practices" (Division Director 4, Noventum).*

Platform Generativity. One key benefit of coopetition within a digital platform ecosystem is that it enables members to leverage each other's strengths and capabilities to create new products and services that they could not develop independently [37]. One example of coopetition among complementors in the SAP platform ecosystem is the collaboration initiative between Noventum and MicroStrategy. MicroStrategy provides comprehensive reporting, analysis, and monitoring software, enabling top companies worldwide to make informed decisions.

This mutually beneficial partnership allows both complementors to expand their DPE customer base and provide more comprehensive solutions to their clients. As a complementor in the SAP DPE, Noventum offers SAP-based accelerators that enable organizations to connect their SAP systems to Microsoft-based data platforms easily. Noventum's added value lies in its precise data extraction from SAP connections utilizing SAP BI Content Data sources. Clients engage with predefined interfaces instead of basic tables, which deliver multiple critical benefits to the Microsoft and SAP platforms. Additionally, Noventum's accelerator simplifies exposing SAP ERP data to all areas of the organization, allowing for greater collaboration and improved efficiency.

5 Discussion

Even if exploitation and exploration are depicted as two opposing forces and can be conceptualized as the two ends of a continuum, they are paradoxically interrelated in a natural cycle. Indeed, innovations and opportunities generated through exploration can evolve into exploitation, while the income from the slack resources generated by exploitation can enable further exploration. Nevertheless, as these twin requirements compete for limited organizational resources, organizations must make decisions and take organizational actions to reconcile these conflicting pressures and balance these two forces.

Like most business consulting firms, Noventum and XRM Vision face essential management challenges that are sometimes conflicting. These include pursuing growth strategies while increasing process efficiency, as well as encouraging their employees to identify business opportunities and fostering the operational excellence expected by

their clients within their respective DPEs. Our study is focused on a specific industry segment. Digital sourcing service providers, as consultants, typically emphasize the exploitation and successful delivery of projects. Yet, exploration is seen as key to service excellence and, thus, as a differentiator. Exploration manifests as specialization, the ability to identify and deliver customized services.

We found a culture of project-based learning practices in each company, embedded in close, trusting, and recurring customer relationships. Conceptually, we identified two modes of organizational ambidexterity (OA): 1. Exploration to (continuously) improve exploitation (*exploration-for-exploitation*) engaged via intra-organizational relationships, an orientation towards continually improving the quality of the service delivery, and 2. Exploration is integral to DPE-related project-based exploitation (*exploration-through-exploitation*), an approach engaged through relationships with clients and the DPE owner, characterized by project-driven learning.

The platform owner's innovations and product developments created downstream challenges for the client to keep the local installation (instance) aligned with the platform version(s). Alternatively, process adaptations by the client or other projects created adaptation needs, which were addressed by the complementor. The relationship with other complementors is primarily focused on strategic positioning, differentiation, and profiling. In this competitive landscape, the complementors highlighted their ambidextrous competencies – ongoing innovation and effective project execution—and successful client relationship management, resulting in over 90% repeat business.

Based on our data analysis, we found that it is vital for innovators in the digital sourcing services industry to create a minimum viable product, an essential product for learning purposes that helps organizations better understand their customers' needs by seeking their feedback on the product in question [34]. Our data analysis suggests that the two complementors established various social mechanisms that foster innovation. XRM Vision and Noventum engaged in multiple collaborative initiatives that strengthened their relationships with ecosystem partners and fostered trust in the development and sharing of knowledge. This relates to social interaction ties (ecosystem ties) used as channels for information and resource flows [41]. This is also consistent with Capaldo [6], who found that interpersonal relationships, trust, and reciprocity play a significant role in inter-organizational processes. Strengthening the ecosystem ties between complementors and the platform owner has a positive impact on innovation.

Our study shows that focusing on implementing structural mechanisms in a DPE, specifically (e.g., open access, microculture), contributes to increased innovation lead times for the complementor under study. Our findings on social mechanisms show that knowledge-intensive learning between a complementor and other DPE actors contributes to the development of innovative solutions. Table 1 provides a summary of the organizational ambidexterity-related social mechanisms.

Our data analysis suggests that the complementor's paradoxical mindset in managing OA led to the implementation of several social mechanisms. By applying social mechanisms related to the complementor, XRM Vision explored new ideas that effectively developed novel accelerators within short lead times. The social mechanisms fostered by XRM Vision and Noventum's innovation processes initiated internal patterns (e.g., events, actions) among ecosystem actors, leading to the development of complementary

Table1. Social Mechanisms for Organizational Ambidexterity

Social mechanisms		XRM Vision	Noventum
Intra-organizational relationships (OA Mode: *Exploration-for-exploitation*)	1. *Collaboration initiatives*	Innovation islands Lunch-&-Learn & Tip-&-Tricks sessions	Cross-division learning sessions (trending workshop)
	2. *Social connectivity*	Internal Hackathons	Team building idea generation sessions
Inter-organizational relationships (OA Mode: *Exploration-through-exploitation*)	1. *Motivation-based platform-core relationships*	Privileged relationship with Microsoft	Privileged relationship with SAP
	2. *Platform client relationships*	App-in-a-day events	Knowledge-sharing forums
	3. *Generativity*		
	3.1 Social dimension	Coopetition-motivated global hackathons	Partnerships (knowledge sharing and assimilation)
	3.2 Technical dimension	MPP-based Industry Solutions Accelerators	SAP-Content Data Sources Accelerators

products (accelerators). However, context matters. This implies that a complex phenomenon, such as OA, analyzed in the context of a DPE, is perceived as an emerging process through a sequence of temporal events and actions. The latter is consistent with Gross [21], who argues that social mechanisms explain intermediate events. To summarize, social mechanisms, as applied by a complementor, provide insights into innovation-driven processes. This provides a causal explanation identifying the processes underlying exploration and exploitation in the context of a DPE, which is consistent with Avgerou [3].

Beyond their consultant-client nature, inter-organizational relationships have evolved and are now deployed as partnerships and arenas for learning. In other words, engaging with vendors and clients in a learning mode and learning relationships is part of the ambidextrous skill set and competence development, which aligns with an integrated view of ambidexterity. *"Exploration can be when it's an innovative project in the area of the client, then we do a lot of knowledge development" (Division Director 1, Noventum); "Some of our clients use it as a kind of protected playground to try out new ideas." (Senior architect, XRM Vision).*

In his research on business partnerships, Lascaux [33] mentions the importance for organizations to maintain mutual trust and engage in repeated interactions with familiar partners, and this has been observed in both case companies: *"We have lots of long-term customers, with established trusted relationships. One client, the first sentence after the greeting was: ignore the contract, just look around and do something useful" (VP Operations, XRM Vision); "We are – to use a restaurant metaphor - the hired chef that*

brings in a cook, servants, pots, pans, food, but we're cooking with a team that's made up of the client that is already using the kitchen" (Division Director 2, Noventum).

Both organizations' digital sourcing service philosophy highlights a holistic view of consultant-client relationships, which requires technically, methodically, and socially competent consultants. Project-driven learning serves both the client, as the service is refined, and the consultant, who achieves *organic ambidexterity*: learning and project execution are intricately linked. In this type of organization, any effective transfer of knowledge is contingent upon the environment (their respective DPEs), which gives employees psychological safety and allows them to share all relevant (unfiltered) information [2].

6 Conclusion, Contributions, and Future Research

We have empirically explored OA practices and developed a contextualized view of ambidextrous challenges and responses at both organizational and inter-organizational levels in two digital sourcing service providers operating in a distinctive, competitive, and innovative industry. Our research has aimed to study how complementors develop organizational ambidexterity in the context of a DPE. The identified social mechanisms have revealed how a complementor creates and discusses new ideas with other DPE actors to foster capability development (exploration) and transform these ideas into practice (exploitation). Our findings suggest that a complementor's support of a platform is associated with a greater commitment to the platform owner. This partially addresses a research proposition advanced by Cenamor [8], which states that the "bilateral dependency between a complementor and a platform owner becomes more significant as the platform ecosystem matures" [p. 338]. More specifically, this corresponds to the generativity practices by the complementors in our study.

This study highlights how complementors in DPEs enable organizational ambidexterity by engaging in structured value-creation mechanisms that support both exploration (innovation and capability development) and exploitation (quality, scalability, and efficiency). Our findings provide new insights into how complementors strategically balance these dual forces, thereby enhancing value across the platform.

6.1 Complementors as Orchestrators of Value-Driven Ambidexterity

Traditional OA research often assumes firms develop internal mechanisms to balance exploration and exploitation [35]. However, in a DPE context, complementors serve as orchestrators. They leverage their position within the platform ecosystem to facilitate incremental improvements (exploitation) and radical innovations (exploration) not only for themselves but also for the broader platform ecosystem [24]. Complementors introduce new services and technologies that enhance the platform's functionality beyond the original vision of the platform owner. Their capacity to create industry-specific accelerators (e.g., XRM Vision's Microsoft Power Platform solutions) represents a systematic approach to exploration.

These innovations act as value multipliers for the platform, increasing its appeal to new users and industries. Complementors refine existing services to improve efficiency, ensuring reliability and seamless integration within the platform. This was evident in

Noventum's efforts to optimize SAP-based solutions, where process refinement translated into improved interoperability and service delivery, reinforcing the platform's core value proposition.

6.2 Social Mechanisms as Enablers of Ambidextrous Value Creation

Our study found that complementors employ social mechanisms—both relational and structural—to facilitate ambidextrous engagement with platform stakeholders [6]. These mechanisms facilitate knowledge exchange, cooperation, and controlled competition, directly influencing value creation dynamics. Through cross-company hackathons, platform-driven training events, and ecosystem partnerships, complementors embed exploration within exploitative structures, reducing the risk of innovation failure while maintaining efficiency. This aligns with coopetition, where competitors innovate to generate shared benefits [37].

Our research directly contributes to the literature on digital sourcing by enhancing the understanding of digital sourcing as a fundamental practice in DPEs. We emphasize the relational and structural mechanisms that facilitate knowledge flows and co-creation within these ecosystems.

6.3 Redefining Complementors as Agents of Platform Evolution

Our work suggested that complementors are not merely followers of platform governance structures; they actively shape them. Unlike previous assumptions that platform owners dictate the rules [9], our findings suggest that complementors co-define governance through participation in value-generating activities:

1. By co-developing industry accelerators and influencing API integrations, complementors dictate how value is structured and distributed within the platform.
2. By acting as adaptive agents, ensuring the platform's long-term sustainability by filling gaps in service provision and evolving alongside technological advancements.

In our study, we have been examining the relationships between the individual, organizational, and inter-organizational layers. We have identified and evidenced two instances of contextual ambidexterity: intra-organizational *exploration-for-exploitation*, in other words, continuous improvement of service delivery, and inter-organizational *exploration-through-exploitation*, i.e., project-based or project-induced learning. Both have become refined, essential components of the ambidextrous practices in the two case companies.

Regarding the practitioners, our findings have direct managerial implications for business management consulting firms that act as complementors in a DPE. We recommend that senior management develop a cohesive social structure and adopt a balanced approach to overcome the challenges of joint exploitation and exploration. The closer you look, the more the distinction between perfection at delivery on one hand and continuous improvement, creativity, and innovation on the other hand becomes blurred (cross-over between exploration and exploitation).

We found a dominating commitment to outstanding consultancy services (exploitation) in a competitive environment, such as a digital platform. Recruiting, training,

empowering, and thereby retaining competent teams of consultants on one side, and building and maintaining long-lasting, trusting relationships with clients and the platform owner on the other, provide the setting not only for excellence in exploitation but also for distinctive ways of exploration.

Our findings are highly contextualized and contingent upon the digital platform, positioning of the companies, and client organizations. They demonstrate successful differentiation as the *raison d'être* of these companies, trying to escape the commoditization of their digital sourcing services (clients have a choice). This includes diverse practices aimed at achieving ambidextrous capabilities. Our multi-case study identifies various avenues for further research.

Complementors are not merely independent actors; they are dynamic digital sourcing intermediaries that reshape traditional supply chain models by leveraging platform-driven sourcing opportunities. Future research should investigate how digital sourcing strategies vary across different platform types and governance models, as well as how complementors balance strategic autonomy with platform dependencies in digital sourcing arrangements. We also recommend more in-depth research about the social interaction ties between DPE actors. Insights may shed some light on the norm of reciprocity when actors focus on ecosystem innovations. Moreover, we suggest examining the shared vision and language between complementors in a DPE by applying a social capital lens. This may create insights about how members of different complementors share knowledge.

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