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Intermediaries and technological disruptions: responding to physical and digital disintermediation

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ABSTRACT

Despite the critical role of intermediaries in most industries, research has focused on producers, while little is known about how intermediaries respond to technological disruptions. We examine how incumbent intermediaries face technological changes that introduce new distribution and sales assets, i.e., intermediaries' core knowledge. To examine this increasingly common but under-theorized type of phenomenon, we conducted an inductive study of Sonepar, a major commercial intermediary operating as a distributor of electrical parts, and investigated its adaptation to the arrival of digital technologies during 2012–2022. Our contribution advances a grounded process model that highlights the existence of two phases behind intermediaries' adaptation – (1) Systems Adaptation and Business Model Change, and (2) High-End Servitization – in the transition from an 'Offline Strategy' to a 'Hybrid Digital-Driven Strategy.' We also redefine the static dichotomy of "core knowledge" vs. "complementary assets" by proposing that the activities depicted by these labels change depending on the type of actor and the phase of its evolution. Finally, we advance theoretical and practical implications to foster a better understanding on the role of intermediaries.

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INTRODUCTION

There has been a long-standing interest in the challenges incumbents face when adapting to technological discontinuities and disruptive innovations (Anderson & Tushman, 1990; Ansari & Krop, 2012; Chandy & Tellis, 2000). Research has often focused on the ways technological changes introduce new knowledge bases in the industry and make the existing assets obsolete (Christensen & Bower, 1996; Danneels, Verona, & Provera, 2018; Eggers & Kaplan, 2009; Henderson & Clark, 1990). To understand this phenomenon, scholars traditionally distinguish between *core knowledge* and *complementary assets* (Teece, 1986). The former relates to central competencies to the firm's business, usually identified as research and development, and manufacturing; the latter instead relates to downstream supporting assets such as marketing, distribution, and after-sales that are needed to successfully capture the value produced by the core knowledge. Research highlights that incumbents often fail to adapt when upstream competence destruction results in "core-knowledge discontinuities" (Anderson & Tushman, 1990; Benner & Tushman, 2002; Burgelman, 1991; Tripsas & Gavetti, 2000), but are likely to adapt if the complementary assets retain value (Rothaermel, 2001; Teece, 1986; Tripsas, 1997). In the opposite scenario, technological discontinuities devalue downstream complementary assets while preserving the core knowledge – namely, "complementary-asset discontinuities" (Cozzolino & Rothaermel, 2018), and this phenomenon is particularly relevant today with the ongoing industry digitalization. Responding to such discontinuous changes implies incumbents' adaptation at the resource, demand, and ecosystem level: incumbents tend to adopt new complementary assets themselves, experiment with new solutions with customers, and cooperate with existing competitors to preserve the value produced by their core knowledge (Cozzolino & Verona, 2022).

When studying how firms face disruptions, scholars have largely focused on "incumbent producers" (Cozzolino, Corbo, & Aversa, 2021). A producer's core knowledge is creating and supplying products and services for the purpose of selling (e.g., newspapers, electronics, cars, computers). In addition to central know-how, they deploy complementary assets to commercialize and capture their goods' value (Mitchell, 1989).

Access to these assets is critical for a producer's success, and a complete integration of all the necessary complementary assets is likely to be unnecessary and expensive (Teece, 1986). To gain efficiency from complementary assets, and in turn focus more effectively on their core business, producers often access them through relationships with channel intermediaries. Industries are therefore not only made of producers but also of intermediaries, other distinct, important, yet surprisingly underexplored actors. Their primary mission is to mediate (Frandsen & Johansen, 2015), link two or more parties (Dutt et al., 2016), and facilitate market transactions by providing brokering services (Bailey & Bakos, 1997).

Having clarified this classic distinction, we propose that the definition of what is "core knowledge" and what is "complementary assets" is relative to the activities a firm undertakes. While in literature core competencies are product-related, such as core technological know-how and production, intermediaries do not produce goods, but focus on marketing, distribution, and after-sales. What is traditionally identified to be complementary for a producer is therefore the core knowledge of an intermediary. Distributors and wholesalers are examples of intermediaries that efficiently distribute goods (Anderson & Anderson, 2002), which are created by third parties, namely manufacturers. We thus refer to incumbent intermediaries' core knowledge as 'distribution assets.'

Conceptualizing complementary assets as a core knowledge is theoretically novel, and although the distinction between producers and intermediaries is conceptually well-established, we know very little about the effects of disruption on incumbent intermediaries' distribution assets. Examining a technological discontinuity from their perspective is theoretically distinct from the previous focus on producers yet important to advance a more complete theoretical understanding. What has been identified as "complementary-asset discontinuities" (Cozzolino & Rothaermel, 2018; Cozzolino & Verona, 2022) of incumbent producers, following the above becomes core-knowledge discontinuities for incumbent intermediaries. This identifies a major challenge since what is a peripheral disruption for a producer, it devalues intermediaries' core activity and may destroy the very foundational activities at the basis of their existence (Rosenbloom, 2002), therefore potentially 'disintermediating' (Ladd, 2022) the distributor in two ways: with producers directly distributing to customers; or with other (often digital) intermediaries

centralizing distribution in more efficient and effective ways. This scenario depicts a serious threat to incumbent intermediaries' market share operating mostly with old-line physical distribution assets (Wang & Heng, 2017), and yet, despite being a timely and common phenomenon, a theoretically grounded understanding of how intermediaries adapt when facing technological discontinuities is still lacking. Hence, we ask: *How do intermediaries respond to technological disruptions of their core knowledge?*

We conduct an inductive study (Gioia, Corley, & Hamilton, 2013) of Sonepar Italia S.p.A, a national unit of a 28 US$ billion multinational operating in the electrical distribution (ED) industry, which serves the community of electrical technicians, engineers and professionals by marketing products made by third-party producers. These companies are also often labeled as "professional distributors" or "wholesalers". Our data combines in-depth semi-structured interviews and multiple internal and external archival sources, considering the period of 2012-2022 as the context of the study. Digital technologies disrupted the traditional electrical distributors by offering transparency and new ways of selling and buying electrical products and services, and therefore this setting encompasses incumbent intermediaries facing a major technological discontinuity.

The value of this contribution is to integrate established models of incumbent adaptation to a technological discontinuity (e.g., Anderson & Tushman, 1990; Cozzolino & Rothaermel, 2018; Eggers & Kaplan, 2009; Sosa, 2011) considering a rather overlooked but relevant type of actor in the industries. A process model is offered for explaining how incumbent intermediaries face technological disruption of their core knowledge and respond to the disintermediation threat. In the first stage, established intermediaries develop a digital distribution channel. But what is critical is the presence of a second phase, where they pursue a servitization approach by specializing their competencies and prioritizing high-end products. We claimed that what constitutes a successful response is a strategic use of the product portfolio, where a recursive process of segment extension continuously introduces innovative products with a high service content. Additional contributions derive from the introduction of fresh insights into Teece's (1986) model. We found that the distinction between "core knowledge" or "complementary assets" (i) is relative to the observed actor, and (ii) can change dynamically depending on the specific phase of response analyzed. Our study also contributes to the literature on servitization (Cusumano, Kahl, & Suarez, 2015; Kastalli

& Looy, 2013; Visnjic, Wiengarten, & Neely, 2016). Results from our investigation are expected to be generalizable to industries where new distributive technologies (e.g., the Internet and Blockchain) are disrupting incumbent intermediaries.

THEORETICAL BACKGROUND

Incumbent's Responses to Technological Disruptions

Disruptive technological changes and incumbents' adaptation have become central topics in management literature by shedding light on different types of phenomena (Anderson & Tushman, 1990; Ansari & Krop, 2012; Christensen, 1997; Cozzolino, Verona, & Rothaermel, 2018). Most of the research to date has focused on technological changes destroying incumbents' core knowledge (e.g., Benner, 2010; Eggers & Kaplan, 2009; Sosa, 2011), in turn leading to what has been termed "core-knowledge discontinuity" (Cozzolino & Verona, 2022). Tushman and Anderson (1986) referred to similar changes as competence-destroying discontinuities that "significantly advance the technological frontier" introducing a new knowledge base that is inconsistent with the prior one. Examples of core-knowledge discontinuities are digital photography replacing film-based photography (Benner & Tripsas, 2012), the substitution of mechanical calculators with electronic computers (Taylor & Helfat, 2009), and the discovery of biotechnology in the pharma industry (Galambos & Sturchio, 1998). Scholars agree that incumbents are often challenged by such changes and literature has extensively examined their adaptation efforts across a variety of industries and contexts (Anderson & Tushman, 1990; Christensen & Bower, 1996; Danneels et al., 2018; Tripsas & Gavetti, 2000).

Following Teece (1986), research has shown that access to complementary assets is important for incumbents to adapt to core-knowledge discontinuities. Complementary assets are distribution and commercialization assets, and according to Teece (1986) when those assets are specialized to the core knowledge in question, they grant strong value appropriation to those actors who control them, being difficult to replicate and find promptly on the market. When those assets are generic instead, competitors can easily access them and appropriate part of their value. The main predictor of incumbents' successful adaptation after a core-knowledge discontinuity, is thus whether their specialized complementary assets retain their value. Owning or controlling assets such as well-developed distribution channels can help incumbents to access or develop new core knowledge and the more industry-specialized supporting assets a firm owns, the more likely it will successfully adapt (Mitchell, 1989; Rothaermel, 2001; Roy & Cohen, 2017; Tripsas, 1997). In the aftermath of a core-knowledge discontinuity, incumbents that still

possess valuable specialized complementary assets but lack the new core knowledge, frequently cooperate with entrants, or acquire them to navigate such core-knowledge discontinuities, while at the same time upstream entrants lack the required specialized complementary assets to commercialize the innovation and are unable to capture its value on their own (Cozzolino & Rothaermel, 2018). The joint ventures in the 1980s between established pharmaceutical companies with preserved complementary assets and biotech startups with new R&D know-how have reflected such a type of adaptation (e.g., Arora & Gambardella, 1990; Pisano, 1990; Rothaermel, 2001).

Other discontinuities, in contrast, destroy the value of incumbents' complementary assets (rather than preserving them) and do not render obsolete the core knowledge. Cozzolino and Verona (2022) analyzed such phenomena called "complementary-asset discontinuities," when technological advances in distribution provide superior alternatives in terms of price/performance ratios and efficiency to incumbents' specialized complementary assets such that no upgrades of the older assets can equal the performance of the new ones (see also Cozzolino & Rothaermel, 2018). A similar situation has been a common phenomenon throughout industrial history and current technological advancements have increased their practical relevance. For instance, the radical transition from linotype to computer typesetting (Tripsas, 1997) represents an example of complementary-asset discontinuity for publishers. Another example is the advent of the Internet, a discontinuous technological change for old-line complementary assets held by many industry incumbents, such as in the newspapers and higher education industries. In those cases, it rendered obsolete incumbents' complementary assets (e.g., printing presses and classroom facilities) with the production of online reporting and teaching while preserving newspapers' journalistic and universities' educational know-how (Cozzolino & Rothaermel, 2018; Cozzolino & Verona, 2022). Responding to complementary-asset discontinuities, incumbents are more likely to horizontally cooperate among themselves rather than with new entrants (Cozzolino & Rothaermel, 2018) to address the common threat posed by the entrants' downstream specialized assets, and capture the value created by their preserved core know-how (e.g., in the form of consortia and intra-industry alliances such as Coursera, and edX among universities). More specifically, literature has defined an incumbents' three-level adaptation (Cozzolino & Verona, 2022): incumbents tend to adopt new complementary assets themselves

(resource-level), develop new value creation strategies (customer-level), and form new value capture strategies cooperating with existing competitors against downstream entrants (ecosystem-level).

Research has then consistently described how incumbents leverage the preserved value of either the core knowledge or the complementary assets to navigate technological disruptions. Adaptation to technological changes primarily revolves around the processes of acquiring and organizing core knowledge and complementary assets (Eggers & Park, 2018). Regardless of the rich body of work on the dynamics of disruptive innovations, it is however important to notice that most contributions have emerged from the analysis of only one type of incumbent: *the producer*. Studies on core-knowledge and complementary-assets discontinuities have examined, for instance, producers of cement, glass, and airplanes (Anderson & Tushman, 1990), pharmaceutical products (e.g., Sosa, 2011), photo cameras (Tripsas & Gavetti, 2000), and newspapers (Cozzolino & Verona, 2022). Producers of goods and services represent an important but nonetheless limited sample of incumbents, and we point out the existence of another important and theoretically distinct type, *the intermediary*, about which we still know very little.

Understanding Incumbent Intermediaries Vs. Incumbent Producers

To understand how technological changes affect incumbent intermediaries, we first need to discuss under which dimensions producers and intermediaries differ theoretically (see Table 1).

Table 1 - Incumbent Producers vs. Incumbent Intermediaries

	Incumbent Producers	**Incumbent Intermediaries**
Core knowledge	Core technological know-how and production.	Marketing, distribution, and after-sales.
Complementary assets	Marketing, distribution, after-sales, and other supporting assets.	Other supporting assets.
Supply chain position	Upstream, initial stage position; distant relationship with customers.	Downstream, late-stage position between producers and customers; closer relationship with customers.
Financial structure	Higher profit margins.	Lower profit margins.

Product range	Large product ranges are frequently seen as a cost burden and to be avoided owing to complexity costs.	Larger assortments are mostly seen as beneficial and leading to superior distribution performance.
Competencies	Focused on the producer's product offer.	Combining different competitors' product offers.
Use of the Internet	Expected higher market share using new digital distribution channels.	Expected drop in revenues because of increased competition and vast information access to customers.
Examples	Producers of cement, glass, and airplanes (Anderson & Tushman, 1990), pharmaceutical products (e.g., Sosa 2011), photo cameras (Tripsas & Gavetti, 2000), and newspapers (Cozzolino & Verona, 2022).	Wholesalers (Alderson, 1965), distributors (Yoon & Lilien, 1988), retailers (Reinartz, Wiegand, & Imschloss, 2019), agents and trading companies (Virtanen, Salmi & Qin, 2022), and brokers (Hargadon & Sutton, 1997).

In any industry, a producer stands for a product-focused company (Raddats, Naik, & Bigdeli, 2022) that traditionally represents the offer, as it develops and manufactures products and services for a group of actual or potential buyers – i.e., the demand. The manufacturer's technological know-how, production costs, and capability thus play critical roles in determining the product's success and profitability. Other actors are then involved in the supply chain to ensure that the product or service is delivered to the final consumer. According to Alderson (1965), intermediaries "intervene between the original source of supply and the ultimate consumer." Scholars pointed out the existence of different actors that are specialists in performing transactions (Wigand, 2020), such as wholesalers (Alderson, 1965), distributors (Yoon & Lilien, 1988), retailers (Reinartz, Wiegand, & Imschloss, 2019), agents and trading companies (Virtanen, Salmi, & Qin, 2021), as well as brokers (Hargadon & Sutton, 1997). Notably, Bailey & Bakos (1997) identify four functions that intermediaries perform to add value to the supply chain: (i) aggregating demand and supply, (ii) matching consumers and providers, (iii) facilitating transactions, and (iv) providing trust. Manufacturers rely on intermediaries because they improve sales performance and market penetration by performing marketing channel activities such as sales, storage, delivery, credit provision, information gathering, and customer service (Shipley, 1984). Producers, even when large and resource-rich, often struggle to match the economies of scale in production with comparable economies of scale in distribution (Rosenbloom, 2004). Conversely intermediaries, regardless of the

range of variation in the services provided, are core actors in the distribution service business. Their efficiency derives from spreading the high fixed costs of distribution assets over large quantities of products from various manufacturers, efficiently achieving both economies of scale and economies of scope (Gadde, 2014). Moreover, producers hold strong competencies, yet are focused on their own product portfolio, and are constantly looking to rationalize their tail of lower-volume lines where margins are lower. The flexibility of the intermediaries is, on the contrary, valuable to the customer (Marcon et al., 2022). The intermediary is not constrained by the manufacturer's product portfolio, and it often retains a broader technical knowledge as it deals with a wider selection of products from different producers. Deploying a superior awareness of the customer needs (Herterich, Uebernickel, & Brenner, 2016), the intermediary often offers complex solutions that combine various competitors' services and products (Grubic & Jennions, 2017). Lastly, producers regard that it is their right to set prices in line with their production costs and reputation and, in general, enjoy a large share of the value-chain profits (Thain & Bradley, 2012). Conversely, intense sales competition pushes intermediaries to set competitive prices, often leading to lower profit margins (Mouzas, 2022), which can be offset by large scale in sales.

Whereas disruption of incumbent producers has received extensive scholarly attention, prior work has mostly disregarded incumbent intermediaries reacting to the dynamics of disruptive innovations. With the widespread use of the Internet, electronic markets are increasingly becoming a worldwide trading place for various kinds of products and services, altering the way buyers and sellers interact (Santos, Sabino, Morais, & Goncalves, 2017). Moreover, the Internet makes it easier and easier for buyers and sellers to search, meet, compare prices, and negotiate (Berthon, Ewing, Pitt, & Naudé, 2003). With the diffusion of e-commerce platforms, scholars claim that control is shifting away from intermediaries, toward manufacturers and customers (Mudambi & Aggarwal, 2003). Technological developments move organizations beyond the physical constraints of their traditional distribution channels (Kiang & Chi, 2001) and, consequently, established intermediaries potentially lose their relevance since transactions can be carried out online in a faster and more cost-effective way (Wigand, 2020). New entrant, Internet-based intermediaries find a broad space for development and are growing technical expertise, becoming increasingly worrisome to traditional brick-and-mortar

intermediaries. For example, companies like Amazon, eBay, and Alibaba operate online marketplaces that have thrived around the globe in recent years and enabled new ways of connecting demand and supply (Ryan, Sun, & Zhao, 2012). Upstream producers, on the other hand, have started to reconsider whether they should rely on established physical intermediaries, which add costs and perhaps limited value. By attempting to bypass intermediaries, producers have developed electronic commerce strategies (Aldin & Stahre, 2003), unveiling direct sales channels (as in the case of Nike, Estee Lauder, IBM, Dell Computer, Cisco Systems, etc.). The removal of the intermediary and the direct control of distribution provide producers with advantages such as higher profit margins, closer contact with customers, and more operational flexibility (Teece, 2010; Tsay & Agrawal, 2004). The excision of the intermediary and of its commission allows upstream sellers and downstream buyers to lower the costs of a transaction (Ladd, 2022). For instance, the emergence of online travel booking services like Skyscanner, Booking, and Expedia bypassed traditional travel agents, resulting in lower prices for traveling.

Overall, the term *disintermediation* describes the alleged move towards a gradual elimination of (incumbent) intermediaries from a transaction (Ladd, 2022) and its disappearance from the distribution channel in the supply chain (Rosenbloom, 2002). Disintermediation represents an ongoing challenge for intermediaries which predates but has become more relevant with the advent of the Internet, a primarily distributive technology that offers new channels to commercialize products. The arrival of digital technologies therefore represents a core-knowledge discontinuity of incumbent intermediaries: their brick-and-mortar distribution assets can be (and have been) radically challenged by digital distributive technologies that can substitute the older ones, and are vastly superior in reach, and interactivity. The diffusion of digital technologies has intensified competition significantly by creating novel opportunities for producers to engage with customers and independently commercialize products, through the creation of their own website or through marketplaces offered by new digital distributors. Disintermediation thus can manifest in two ways: when producers eliminate traditional intermediaries and directly link to customers; or when traditional intermediaries are disintermediated by other (often digital) intermediaries.

Since none of the previous studies investigated how incumbent intermediaries adapt after disruptions, it is paramount to start providing some insights into this important area

of investigation which affects thousands of firms globally. Understanding new technologies' introduction and disruption more broadly within the intricate but highly common context of intermediaries is important for developing a more complete picture of how incumbents change and adapt in the face of new technologies. We do so by analyzing the effects of digital technologies (and online-based intermediaries) in the electrical distribution industry. The results shed light on the process by which incumbent intermediaries attempt to address new technologies and the disintermediation threat, as well as the challenges that arise as they do.

METHOD

We draw upon secondary data, semi-structured interviews, and direct observations to develop a process model (Glaser & Strauss, 1967; Langley, Smallman, Tsoukas, & Ven, 2013) that explains how an incumbent intermediary adapts after a technological disruption. We inductively applied the Gioia et al. (2013) methodology of progressive theoretical abstraction to ensure qualitative rigor in identifying the emerging process model, whose theoretical insights were robustly grounded in the data. The research setting is the electrical distribution industry, covering the decade 2012-2022, and within this setting, we chose the electrical distributor *Sonepar Italia S.p.A.* as our case. This provides a "revelatory case", where the phenomenon of interest can be transparently observed (Yin, 1994). Given the scant theory and empirical evidence on our topic, we deemed an inductive approach as particularly suitable to build a novel theory (Locke, 2001).

Research Setting

The electrical product industry. The electrical product industry encompasses all the businesses related to the manufacturing and commercialization of products and services for electrical applications. It is primarily a global, business-to-business industry, where the intermediaries buy from original manufacturers and sell the products to professional installers, eventually selling to the end-user. Within this broad empirical setting, we focused on the electrical distribution industry, namely the aggregation of intermediary companies whose purpose is to serve the community of electrical professionals by marketing products made by equipment producers. These companies are commonly labeled as "professional distributors" or "wholesalers." Most of them market a wide

variety of products (see Table A1 in the Appendix), hence they are defined as "generalists." Others focus on a more constrained but deeper range of products, like lighting or security, therefore the term "specialists".

Such companies serve primarily the large base of electrical installers, but also industries and original equipment manufacturers, utilities, and in some cases the retail industry and the private sector. We focused on a player in the Italian market, as the electrical industry in this country presented a clear shift from the brick-and-mortar to the digital distribution, and its inter-regional differences offered relevant variance while maintaining a reasonably small setting. Today, approximately 85 electrical distributors are active in the Italian electrical industry. According to the Federation of Electrical Material (FME) – i.e., the accredited association of Italian electrical wholesalers – the total value of the electrical distribution market was €6.4 billion in 2021.

Sonepar: a leading distributor of electrical equipment. We focused on one of the main international actors in the electrical distribution industry. Incorporated in France in 1969, Sonepar is an independent family-owned group with global market leadership in the business-to-business distribution of electrical products, solutions, and related services. Drawing on over 45,000 employees and associates, in 2021 Sonepar reported sales of €26.4 billion, and its 1969-2021 compound annual growth rate was 8%. Sonepar has a dense network of 2,800 local branches spanning 5 continents and 40 countries and it is the leading national distributor in 11 countries, including Italy. Its one million customers are mainly installers (57%), industry (24%), and infrastructures (11%). Sonepar Italia is an independent national unit that is part of the international Sonepar Group. From its foundation in 1988, the company developed steadily over the years through internal growth and a series of acquisitions. Its geographical scope includes a nationwide network of 150 outlets in 17 regions, and it employs around 2,000 people. Despite being disrupted by the advent of digital technologies which challenged its business by favoring manufacturers and digital distributors, in 2021 Sonepar Italia reported a consolidated turnover of €1.1 billion and record growth of +40% over 2020. Figure A1 in the Appendix provides the company's financial performance over the period of analysis. As a point of reference, the 2021 market share of Sonepar Italia was 17%, followed by a few other major groups in the industry. The company is a "generalist" as it competes in a wide range of electrical products: electrical & energy distribution, industrial controls & automation,

building automation & construction, lighting, cables & wires, safety & tools, heating, ventilation & air conditioning, and renewable energy.

We found this setting attractive for several reasons. First, it is a long-established, worldwide highly common industry with a very traditional structure and a commoditized product range. Second, the advent of the Internet radically overhauled the industry and served as a major technological discontinuity for electrical distributors' distribution assets. The Internet has become an alternative means for purchasing electrical products and threatened physical distribution, calling for a profound adaptation of incumbent intermediaries. Focusing on incumbent electrical distributors is then a viable choice because their response to such disruptive changes is key to their performance. Even though during the recovery that followed the financial crisis revenues began again to grow steadily, distribution margins have overall not improved, witnessing, from 2012 a new market reality characterized by many digital entrants (McKinsey, 2019). We thus selected the 2012–2022 period for our empirical analysis as this witnessed the emergence and consolidation of Amazon and other new digital platforms operating in this industry, to a point where the electrical distributor's specialized distribution assets significantly diminished the value captured. Indeed, in 2012 Amazon launched Amazon Supply, a retail vertical for business and industrial customers. It was Amazon's first non-consumer retail venture and underscored its ambition to disrupt all offline distribution. Moreover, in 2012 the electrical distribution market in Italy witnessed an 11.14% decrease compared to 2011 due to the end of governmental incentives to adopt photovoltaic technologies, making the case particularly suitable to navigate incumbent intermediaries' responses for survival. Third, as the unit of analysis of our research we chose Sonepar Italia because, regardless of its peculiarities, it is similar to many other incumbent distributors in its and other industries. Hence, it represents a traditional company operating in a traditional industry, allowing us to develop a theoretical contribution generalizable to other contexts. Moreover, the company's dimension and its comprehensive product range spanning from more sophisticated products to commodities like light bulbs, make it rich enough to explore the role of product portfolio in strategic responses. Lastly, Sonepar Italia granted us an exceptional level of access to both primary and secondary data, after a formal endorsement by the President and CEO, which allowed us to engage with several kinds of actors along the entire supply chain.

Data Collection

Our study combined primary (interviews and observations) and secondary (archival material) sources of data, which helped us triangulate insights to make sure our findings were coherent and defensible (Gibson, 2017). Given the novelty of our topic and the granular level of insights sought, interview data were used as the main source of information (see Table 2).

Table 2 - Data Sources and Use

Type of data	**Sources**	**Use in the Analysis**
Primary interviews	*11 preliminary interviews* with Functional Directors of Sonepar Italia.	Familiarizing with the organizational history, culture, work processes, and the electrical distribution industry context.
	71 semi-structured interviews of Sonepar Italia executives [36], suppliers [16], and customers [18] in March-September 2022.	Gathering data regarding the organizational/industry setting and gaining insights into the reasons behind strategic choices. Tracking the arrival of disruptive changes and their impact on the industry.
	Informal conversations with directors, store managers, area managers, employees, customers, and consultants.	Familiarizing with the context to facilitate the interpretation of informants' accounts, and better assess the veracity of the claims.
Archival data	*Internal company-related documentation:* a guide for newcomers, internal meeting presentations, project updates, guidelines for functional strategy, Market Analysis, and Financial Reports.	Fine-grained tracking of historical events, actions, and performance. Triangulation of informants' assertions and recollections.
	Public documentation: 2012-2022 Financial statements, company webpages, and news articles, 2019-2022 Press articles about the company, 2021-2022 Sonepar Reports, 2021 Corporate Social Responsibility Report, Industry Journals (e.g. Commercio Elettrico; L'Installatore Italiano; Eurelectric; Mercato Elettrico).	Tracking official corporate narrative and clarifying event timelines. Deep immersion into the history of the sector over the focal period and framing the organization in the context. Integrating information about the history and culture of the case company.

Observations	*Field notes from meeting attendance (6 meetings).*	Gaining an additional understanding of the organizational setting.
Video	*Panel discussion* (8 industry leaders representing approximately 40% of the electric market) *and secondary interviews.*	Understanding contemporaneous sector-wide thinking about the challenges and latest technologies/best practices. Gaining an additional understanding of event timelines.

Our initial discussions with Sonepar Italia occurred in February 2022, when the authors and the President and CEO of the focal firm agreed to begin the investigation. Between March 2022 and June 2022, one of the authors spent on average four days per week at the organization to collect data and directly observe the firm's operation. Initially, we tried to familiarize ourselves with the organizational context, attending several meetings with our initial contact person and Sonepar Italia executives from different functions, along with archival data collected onsite. Following a couple of introductory weeks, we focused our data-gathering on the last decade's evolution of incumbent electrical distributors and, particularly, of Sonepar Italia. Between March and September 2022, we conducted 71 semi-structured interviews (Corbetta, 2003) with different types of informants. These lasted between 10 and 60 minutes which totaled approximately 40 hours.

First, we conducted 36 semi-structured interviews with knowledgeable informants of Sonepar Italia, including C-level executives responsible for strategy creation and execution, as well as executives from other hierarchical levels, selected for their seniority and long tenure. Later, we extended our interviews to informants outside the company to deepen our understanding of the environmental and strategic issues the incumbent intermediaries had faced. Expanding the sample of informants allowed us to overcome the limitations of relying solely on referrals from Sonepar Italia, and triangulate facts and observations provided by firm informants. Our initial contact person helped us identify a balanced set of 16 suppliers, across different product lines and hierarchical positions. In the last phase, we asked Commercial Divisional Directors of Sonepar Italia to identify a

series of customers for the interviews. We attempted to compose a diverse sample in terms of organizational type, size, and geographical distribution that would mirror Sonepar Italia's customer base. We acknowledge the fact that the smaller the size of the customer, the more granular the view, whereas larger clients provide a more general high-level perspective. In total, 19 customers were interviewed, distributed among small and large installers, original equipment manufacturers, and a few utilities. See Table 3 for the complete list of interviews and their duration. Each selected quote for the first-order concepts indicates the identification number of the interviewed informant as it is presented in Table 3.

Table 3 - Interviews with Informants

#	Role	Profile	Interviews	Length	Date
1	President and CEO	From 2015 in Sonepar Italia.	12	480’	03-09/22
2	North Commercial Division Director	From 2019 in Sonepar Italia.	2	75’	03-05/22
3	Marketing and Customer Experience Consultant	Involved in several market surveys from 2016.	4	145’	03-07/22
4	General Counsel	From 2016 in Sonepar Italia.	2	40’	03-04/22
5	Transformation Quality and Processes Director	From 2021 in Sonepar Italia.	1	35’	23/03/22
6	Area Manager	From 2000 in Sonepar Italia.	1	50’	24/03/22
7	Vendor Relations Development Director	From 2012 in Sonepar Italia.	1	50’	25/03/22
8	IT & Digital Director	From 2001 in Sonepar Italia.	1	35’	28/03/22
9	Marketing and Customer Experience Director	From 2017 in Sonepar Italia.	2	80’	03-04/22
10	Strategy and Services Director	From 2016 in Sonepar Italia.	4	130’	03-09/22
11	Key Accounts and Vertical Markets Director	From 2007 in Sonepar Italia.	3	115’	03-08/22
12	Supply Chain Director	From 1999 in Sonepar Italia.	2	110’	03-08/22
13	Real Estate and Sustainability Director	From 1999 in Sonepar Italia.	1	35’	14/04/22
14	Key Account Distribution	The company provides energy and automation digital solutions for efficiency and sustainability.	1	50’	07/04/22
15	Coordination Officer	Specialist in residential, condominium, and industrial automation solutions and pedestrian and vehicle access control.	1	40’	07/04/22
16	Account Manager Distribution	Supplier of services and products for power transmission and distribution, automation and smart grid, fire prevention systems, and building safety and energy efficiency.	1	35’	11/04/22
17	Account Manager Distribution	Production of systems and components for low-voltage electrical installations.	1	40’	11/04/22

18	Trade Sales Channel Manager	Supplier of general lighting for lighting professionals as well as end- users.	1	25’	12/04/22
19	National Key Account	Company that operates in the field of electrical low voltage equipment used for residential, employment, and production.	1	55’	12/04/22
20	National Wholesale Channel Manager	Supplier of power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact.	1	20’	12/04/22
21	Commercial Director	Group operating in the sectors of residential, commercial, and industrial ventilation and air handling generally.	1	60’	12/04/22
22	Chief Commercial Officer & Member of the Board	Company specializing in the production of electrical cable for use in the energy and telecom sectors and for optical fibers.	1	35’	12/04/22
23	National Key Account	Electrical cables and components manufacturer.	1	60'	13/04/22
24	National Commercial Director	Producer of lighting, emergency, and energy-saving products, and electronic systems for home and industrial security.	1	40’	14/04/22
25	General Director	Digital Order Cycle Management Solutions Provider.	1	35’	14/04/22
26	Managing Director and Member of the Board	Specialists in metallic cable trays; customized metallic cable tray solutions for large plants, large works, and standard products suitable for industrial and civil installations.	1	25’	15/04/22
27	National Distribution Director	Power management company offering energy-efficient products and services to help effectively manage electrical, hydraulic, and mechanical power.	1	20’	15/04/22
28	National Distribution Director	Active in the field of access automation: automatic systems for gates and garage doors, parking systems, automatic barriers, and deterrent devices.	1	40’	20/04/22
29	OEM	Mattress machines production - Tuscany.	1	23’	22/04/22
30	OEM	Explosion-proof electrical equipment production - Friuli-Venezia Giulia.	1	15’	22/04/22

31	Big installer	Division dedicated to the construction, operation & maintenance of renewable energy plants – Puglia.	1	20’	22/04/22
32	Small installer	Civil and industrial electrical installations -Veneto.	1	12’	26/04/22
33	Small installer	Electrical installations – Veneto.	1	20’	27/04/22
34	OEM	Realization of air conditioning systems for technological and technical environments – Veneto.	1	65’	28/04/22
35	End User	Italian pasta production – Puglia.	1	18’	28/04/22
36	Small installer	Civil and industrial electrical installations - Friuli-Venezia Giulia.	1	10’	28/04/22
37	Big installer	Technological plant engineering, facility management, and industrial automation – Veneto.	1	21’	29/04/22
38	Big installer	Electrical installations – Veneto.	1	45’	29/04/22
39	OEM	Production of machinery for the food processing industry, and design of complete fruit processing lines – Campania.	1	35’	03/05/22
40	Big installer	Industrial and civil electrical systems installation and maintenance - Sardinia.	1	20’	04/05/22
41	Small installer	Electrical installations – Veneto.	1	10’	04/05/22
42	OEM	Assembly and wiring of electrical panels – Sicily.	1	20’	04/05/22
43	OEM	Realization, and management of plants to produce electricity from renewable wind energy sources – Sardinia.	1	15’	05/05/22
44	Small installer	Electrical industrial installations – Campania.	1	20’	09/05/22
45	Small installer	Home automation, burglar alarm and video surveillance systems - Sardinia.	1	15’	09/05/22
46	Utility	One of Italy's largest facilities.	1	15’	25/05/22
47	National Key Account	Manufacturer of electronic and electromechanical components and devices.	1	30’	26/05/22
48	Utility	Utility specialized in selling and providing services in the energy sector	1	15’	27/05/22
		Total	**71**	**2,404’ (40 h)**	

We used secondary sources and direct observations partly to familiarize ourselves with the setting and to integrate and corroborate evidence from primary data. The gathering of secondary data was facilitated by complete access to Sonepar Italia's extensive archive of internal documentation which included documents such as transcripts of official meetings, powerpoint presentations, customer databases, catalogs, price lists, market and financial reports. The primary and secondary data collection ended once we realized that additional data would no longer spark new theoretical insights nor reveal new properties of the theoretical categories (Charmaz, 2006), reaching a condition of "theoretical saturation" (Glaser & Strauss, 1967).

Data Analysis

Step 1. Historical reconstruction of events. Using our primary and secondary sources, we began by systematically reconstructing the history and timeline of the electrical distribution industry, considering key events from 2012 to 2022 (see Figure 1.a). Then, for Sonepar Italia we also created a specific, more granular timeline capturing each change related to distribution assets and significant strategic projects (see Figure 1.b).

Figure 1.a - Timeline of Key Events for the Electrical Distribution Industry

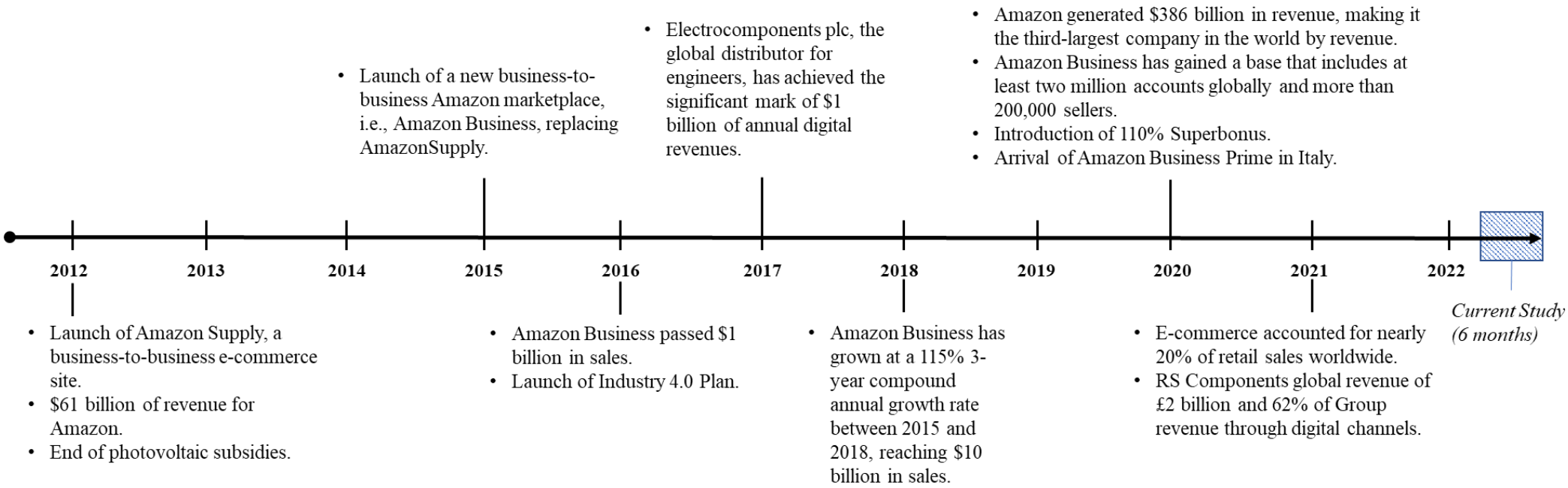
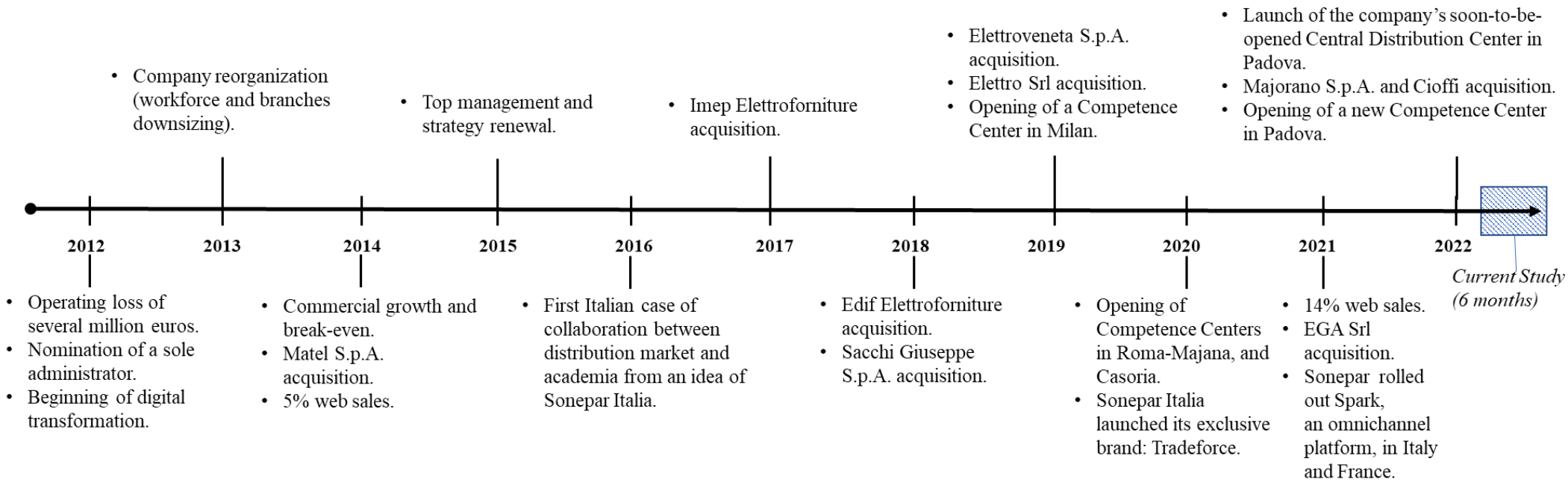


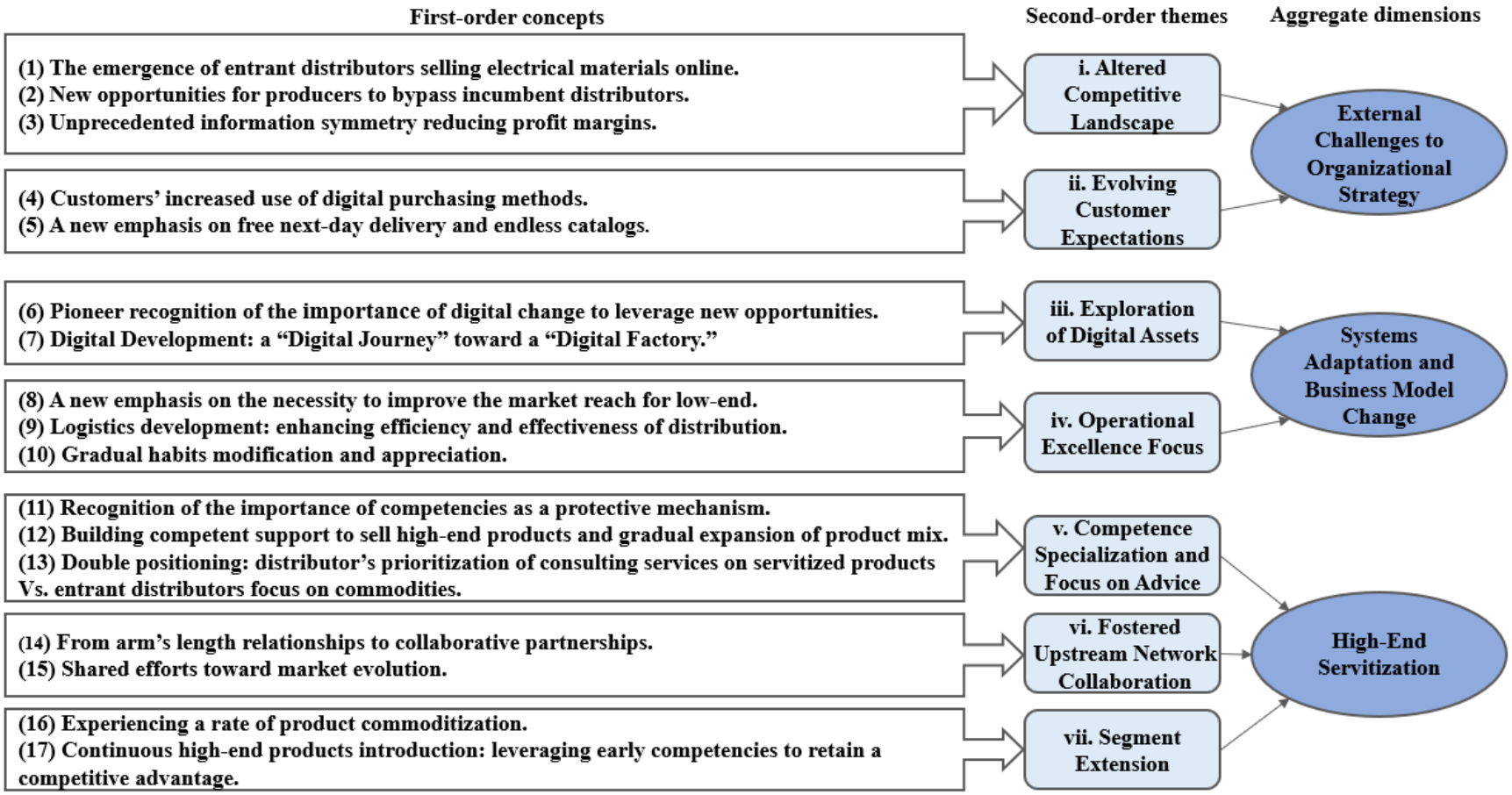
Figure 1.b - Timeline of Key Events for Sonepar Italia S.p.A.



Step 2. Open coding. We then began the open coding process (Gioia et al., 2013) by engaging in an intensive, fine-grained reading of the data (Strauss & Corbin, 1998), interviews, and secondary data in parallel. We selected heterogeneous quotes explaining the responses to the discontinuity to conceptualize our qualitative dataset, iterating between rounds of data analysis and rounds of additional data collection informed by provisional emerging interpretations (Langley, 1999; Lincoln & Guba, 1985; Locke & Golden-Biddle, 1997). We proceeded by aggregating similar quotes around distinct, non-redundant concepts. After a long, iterative process of aggregation and reduction, we ultimately obtained seventeen first-order codes (as per Gioia et al., 2013) reflecting, when possible, our informants' "concepts-in-use" (Gephart, 2004).

Step 3. Axial coding and process model development. Finally, we proceeded towards a more theory-driven explanation (Strauss & Corbin, 1998) by collapsing our first-order concepts into fewer, more abstract second-order themes, and higher-level aggregate dimensions (Gioia et al., 2013) based on their similarities – a technique known as "axial coding" (Strauss & Corbin, 1998). The seventeen first-order concepts were combined into a set of seven second-order themes, and ultimately three overarching aggregate dimensions (Gioia et al., 2013), namely 'External Challenges to Organizational Strategy,' 'Systems Adaptation and Cultural Change,' and 'High-End Servitization.' Figure 2 presents the final data structure resulting from this coding process.

Figure 2 - Final Data Structure and Codes

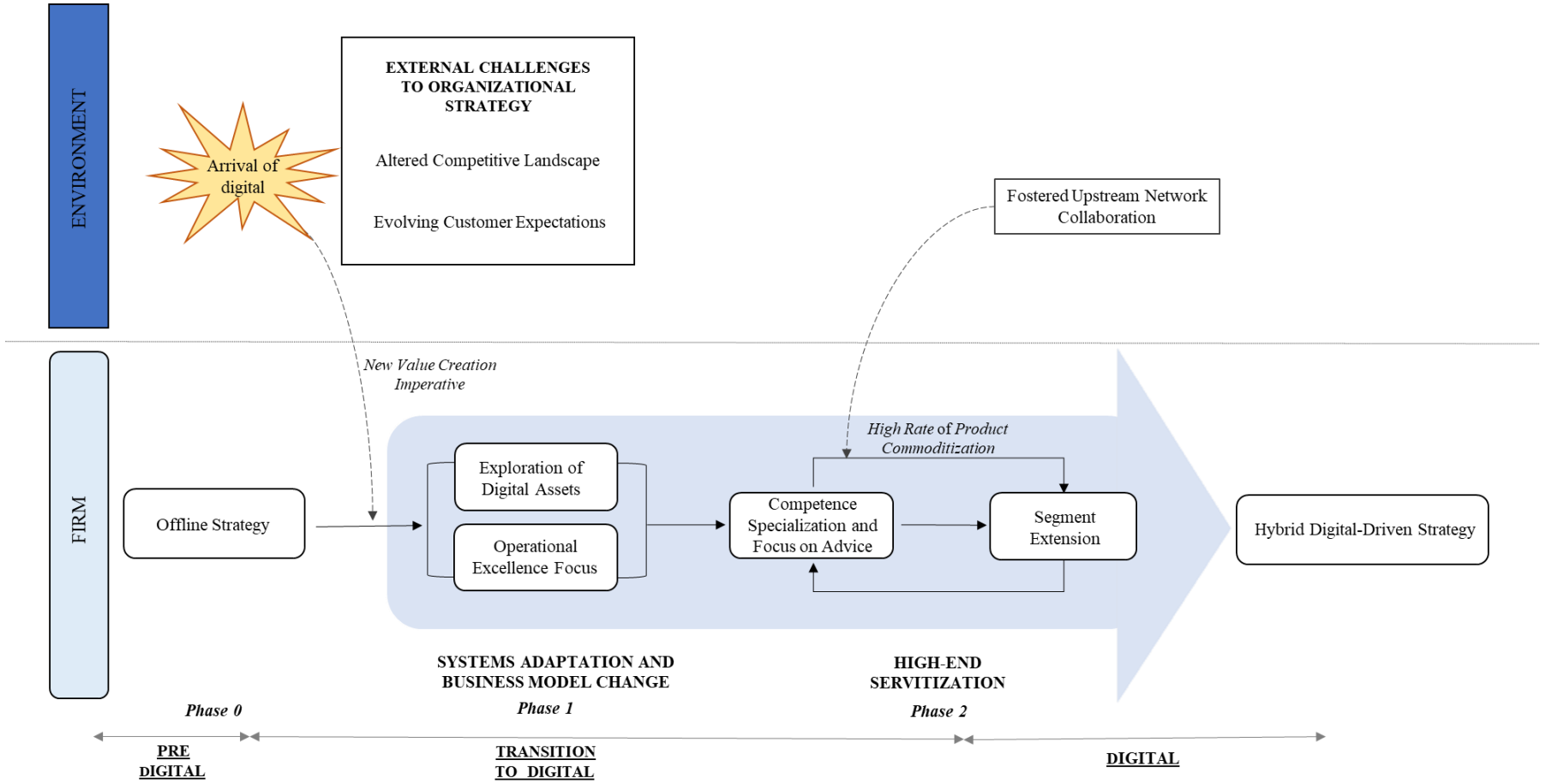


Once the coding procedure had been completed, we drew on statements from multiple informants to investigate possible linkages between our aggregate dimensions and infer an underlying temporal sequence to build a coherent process model, explaining how Sonepar Italia, as an incumbent intermediary, responded to a technological disruption of its core knowledge. We explored the relation between the emerging codes and tried to identify non-linear paths which may reveal unusual trajectories to the firm response. Finally, we corroborated our intuitions by having some knowledgeable informants validating our process.

FINDINGS

We present our findings in three parts. First, to better understand the output of our process model, we provide a narrative of Sonepar Italia's strategy before the technological disruption, in what we term the "pre-digital" phase. Second, following indications of a "model-led composition" (Berends & Deken, 2021) we briefly introduce our process model and give an account of its constitutive elements, which represent the incumbent intermediary's reaction to digital disruption, during the "transition to digital" phase. As illustrated in Figure 3, there are three main dimensions that emerged from Sonepar Italia's experience: (1) External Challenges to Organizational Strategy, (2) Systems Adaptation and Business Model Change, and (3) High-End Servitization. For each, we provide a chronological narrative built around the second-order themes, while mentioning first-order concepts within the narrative, and we display additional selected quotes in separate tables to document the robustness of our claims. Lastly, we identify the "Hybrid Digital-Driven Strategy" as the output of our process model, during the current "digital" phase. The temporal ordering of the three phases partly overlaps, but it is useful to present a discrete sequence that starts with what we called "Offline Strategy," and progresses to the "Hybrid Digital-Driven Strategy" of incumbent intermediaries.

Figure 3 - The Process Model of Incumbent Intermediaries' Response to Technological Disruptions



To support the narrative, we summarize the progressive evolution of Sonepar Italia S.p.A. in terms of core knowledge and complementary assets in Table 4.

Table 4 - The Evolution of Sonepar Italia S.p.A.

● Unaltered
★ Newly-developed
⬆ Enhanced

	a) Phase 0	b) Phase 1	c) Phase 2
CORE KNOWLEDGE	● Distribution competence ● Numerous brick-and-mortar points of sales and decentralized (non-automated) distribution centers ● Sales network ● Communication and promotion ● Hundreds of transactional suppliers ● Basic B2B e-commerce platform and website	⬆ Distribution competence (excellent operational productivity) ⬆ Numerous brick-and-mortar points of sales and centralized partly automated distribution centers ● Sales network ● Communication and promotion ● Hundreds of transactional suppliers ⬆ Advanced B2B e-commerce platform and website, mobile application ★ Pricing and sales administration	● Distribution competence ⬆ Numerous brick-and-mortar points of sales, centralized partly automated distribution centers, and Experience Centers ⬆ Sales network and seven specialist markets ● Comunication and promotion ★ Collaborative relationships with partner suppliers ● Advanced B2B e-commerce platform and website, mobile application ● Pricing and sales administration ★ Excellent customer service and advice ★ Product portfolio management
COMPLEMENTARY ASSETS	● Activities such as accounting, legal, and finance, human resources management ● Complementary technologies (e.g., software for administration, inventory control system) ● Pricing and sales administration ● Product portfolio management (the wider selection of products the better) ● Good customer service	● Activities such as accounting, legal, and finance, human resources management ⬆ Complementary technologies (e.g., software for administration, inventory control system ● Product portfolio management ● Good customer service ★ Web development and digital marketing capabilities	● Activities such as accounting, legal, and finance, human resources management ● Complementary technologies (e.g., software for administration, inventory control system, customer relationship management system) ● Web development and digital marketing activities capabilities

Pre-Digital (Phase 0): Offline Strategy

Regardless of the fact we entered Sonepar Italia during its 'digital phase,' we were strongly focused on gaining a sense of the starting point by encouraging informants to recall and explain the organizational strategy before any formal changes occurred. This constituted a basis for comparison with further data on the organization's strategy during and after the digital transition.

Sonepar Italia President and CEO recounted: "What was making an electrical distributor relevant? Capillarity, or proximity to local customers, and an appropriate product assortment." Sonepar Italia's relevance relied on the ability to intercept an existing demand and offer a service mainly expressed through product availability. During the pre-digital phase, the "Offline Strategy" was thus very clear: the company aimed to root its presence in local territories through a dense network of local branches.

At any given point of sale, a professional customer could find a varied selection of products and services, mainly commodities, whose levels varied depending on the size, history, and vocation of the territory (e.g., industrial versus residential). Each branch was serving customers also through a network of sales agents, with the purpose of visiting clients and helping them identify the best solutions for their activity (see Table 4, column a). Producers' inability to solve customers' needs for undifferentiated electrical products, in small quantities, was the main reason for the distributor's existence. As the Strategy and Services Director of Sonepar Italia explained: “It has always been a matter of efficiency, the original manufacturers will never be able to optimize physical distribution as we do nor to reach clients with our level of service and detail.”

Arrival of Digital: External Challenges to Organizational Strategy

In an increasingly digitalized world, massive changes began to affect incumbent intermediaries such as Sonepar Italia in 2012. Table 5 provides a summary of the challenges and the main firm’s responses.

Table 5 - Transition to Digital of Sonepar Italia: A narrative summary

Challenge	**Explanation**	**Main corresponding firm response(s)**
Altered competitive landscape: *New (online) distributors*	Incumbent intermediaries had to face with new competitors deploying digital assets and threatening their market positions (e.g., RS Components, Esprinet, spesaelettica.it, mondoelettrico.it, campoelettrico.it, elcoingross.it, ManoMano, Grainger, eBay, Amazon).	Company's adoption of new digital assets: ● 2012: Adoption of a novel Product Information System (PIM), and connected search engine within the B2B e-commerce platform. ● 2013: Introduction of the first mobile app for tablets. ● 2014: Introduction of the first mobile app for smartphones. ● 2016: New website. ● 2017: First augmented reality catalog and implementation of the first Google Analytics solutions. ● 2018: First omni-channel project promoting the use of the mobile app within stores. ● 2020: 'Spark' project toward a 'Digital Factory.'
Producers' new possibilities to disintermediate	Upstream manufacturers gained the opportunity to direct sell to customers cutting traditional distribution costs through proprietary/marketplace platforms.	● Sonepar Italia kept leveraging and enhancing the benefits of their existence in the first place: the provision of efficient, excellent, objective distribution services of ever-increasing product assortments. ● 2013: Beginning of a period of concerted efforts to improve collaboration with suppliers towards mutually beneficial partnerships.
Unprecedented information symmetry	The transparency resulting from digital technologies resulted in new pressure on prices and margins. Other than that, customers also got used to easily accessing all the information they needed (e.g., accurate stock information, and delivery dates) prompting incumbent intermediaries to offer the same.	● Sonepar attempted to decrease operating expenses deploying the scale economies resulting from a series of acquisitions starting in 2014 and the building of a centralized supply chain network trying to best align to market prices. ● Focus on high-end products rarely sold online where a competent support is more valuable than price itself.
Customer evolving expectations	New entrants introduced free next-day delivery along with well-developed digital platforms offering endless catalogs and considerably increased professional customers' expectations.	● 2012: Beginning of the digital journey. ● In the last 10 years the company completed a shift to a centralized supply chain network offering a wider range of items and national delivery in 1/2 days at a competitive price.

		● 2017: Institution of a dedicated office to inventories and national procurement. ● 2021: Launch of 'Caterpillar' project to further redesign Sonepar Italia Supply Chain and give customers a tailored service. ● Increasing competence specialization and high-end products offering to pursue a servitization strategy and become unreplaceable service providers for customers
High rate of product commoditization	High-end products rapidly turning into low-end products as a result of technological advancements, new alternative purchasing channels beyond the counter, technological simplification of products, and the emergence of more qualified professional figures. Automatic gates, air conditioning systems, plc etc. are all examples of this phenomenon.	Sonepar began to always innovate their proposal to the market with new high-end products by constantly updating their competencies on innovative solutions, previously foreseeing uncovered products that could be effectively handled by them. For example, Sonepar was among the first to distribute in Italy: ● Inverter. ● Photovoltaic systems. ● Rechargeable stations for electric cars; ● Innovative technologies in the field of IoT and Smart Building.

Two specific themes relating to the origin of a radical change in the company strategy characterize our informants' experience: an *altered competitive landscape*, and *evolving customer expectations* (see Table A2 in the Appendix). First, members recognized how the arrival of the internet and related digital tools resulted in an *altered competitive landscape* within the electrical distribution industry (see Table A2). As a Marketing and Customer Experience Consultant recounted: "the increased competition brought by the arrival of digital was becoming a relevant threat to professional distributors like Sonepar Italia." The company had to face new competitors: aggressive electronic distributors (for instance, RS Components and Esprinet), wholesalers that began to offer their products via a B2C website (examples are spesaelettica.it, mondoelettrico.it, campoelettrico.it, elcoingross.it, etc.), and finally, pure players involved in the online distribution of electrical material like ManoMano, Grainger, eBay, and Amazon. The latter was rising as the first platform and as the most relevant search engine used to find products. A relevant disruption came in 2012 with the launch of Amazon Supply, the company's marketplace that sells business supplies to corporate buyers offering them extended periods to pay, then replaced by Amazon Business in 2015. The B2B platform surprisingly grew at a 115% CAGR between 2015 and 2018, reaching $10 billion in sales (CNBC, 2018). As an informant from Sonepar Italia explained:

> *"We offer a large catalog at market conditions, transparently buying from the manufacturer of the same country. [...] In marketplaces, on the other hand, there can be anyone, setting any price, resulting in very high competition. The theme is: these phenomena exist, so if you pretend they don't, they will keep decreasing our market share." (Key Accounts and Vertical Markets Director, 11)*

Furthermore, intermediaries have traditionally served as a primary go-to-market channel for manufacturers. Yet, as the Sonepar Real Estate and Sustainability Director put it: "when the digital arrived any supplier got the possibility to easily bypass us selling their products to customers via their website." These challenges were confirmed by OEM customer:

> *"Certainly, we got many new opportunities for purchasing electrical material directly from producers or new distributors. Add this to the growing number of web sales… How can traditional distribution survive?" (Original Equipment*

Manufacturer, 30)

Figure A2 in the Appendix shows the trend of distribution channels used by Sonepar customers from 2016 to 2022. A steady trend reflects a gradual decrease in the share of electrical distributors of 10%, while other types of channels have increasingly become very important such as manufacturers, and online shops.

Another challenge was that digital technologies made it easier and faster to interact with customers, leading to an unprecedented information symmetry between firms and customers. As Sonepar CEO explained: "traditionally, non-transparency on pricing was the basic assumption making this market work." In fact, the end customer could not easily compare the prices among players and discover the possibility of a distributor offering a price not aligned with that of the producer. Our informant continued: "with the web, information asymmetry no longer existed, and a quick Google search can tell you just about anything you need to know." In interviews, informants constantly told us that Amazon Business and other new digital entrants – many with vast financial resources and first-rate digital capabilities – are giving customers deeper insights into pricing and therefore more negotiating power. This transparency, further prompted by price-comparison sites, resulted in new pressure on prices and margins. With the same service, customers bought where they found the lowest price, making efficiency a prerequisite for competitiveness.

With the arrival of digital, *customer expectations* were also *evolving* significantly (see Table A2). As installers explained, the purchasing pattern until recent times was physical and the process consisted of three sequential steps: need occurrence, shopping, and consumption. Digital (online) technologies enabled customers to virtually eliminate the difference between step one and step two so that they could shop at the same time they encountered a specific need. Additionally, logistic improvements made the expectation of free next-day delivery "once a dream, today a prerequisite to stay competitive" (Marketing and Customer Experience Director, 9). Customers had always wanted friendly, efficient, and reliable service but with the advent of new technologies, they considerably raised their requests. Customer expectations often did not discriminate between B2B sales from B2C, affecting professional distribution as well, whose customers were expecting a high service level not only in terms of product availability in the store and fair pricing, but this escalated to expectations like "I go on site tomorrow

morning and when I arrive, the material must be already there" (Small installer, 5). Consequently "sales skills and good assortments were no longer a guarantee for success" (Area Manager, 6).

> *"Digital pushed customers to demand much more service in terms of product range, speed, and reliability of shipping. Our world was changing! There was a trend of increasing SKUs handled and catalogs began to explode... The other trend was that customers were gradually reducing their stock at home expecting distributors to deliver what they needed today for tomorrow." (Supply Chain Director, 12)*

One manager highlighted how "the word 'know your customer' had become meaningful as it never was. With customer behavior changing so rapidly, we had to follow customer experience trends" (Marketing and Customer Experience Director, 9) and respond to a *new value creation imperative*.

Transition to Digital (Phase 1): Systems Adaptation and Business Model Change

Sonepar Italia responded to the arrival of digital technologies by focusing on a systems adaptation as one protective mechanism that led to a business model change. The company achieved this through a set of interrelated mechanisms, namely, *exploration of digital assets,* and *operational excellence focus* (see Table A3 in the Appendix).

Sonepar Italia was among the first traditional distributors to realize the need to fully embrace the potential of digitalization to maintain a competitive position in the market:

> *"If a physical distributor doesn't offer a proper digital experience, new digital players will grow exponentially. Nowadays, the physical world needs to integrate digital to compete." (Strategy and Services Director, 10)*

By the beginning of 2012, the profound transformation of the way people sold and bought was affecting the business; hence, the organization tried to adapt to those trends to not "be left out of the market" (Marketing and Customer Experience Director, 9). Informants consistently reported how, at first, digital development had the strong support of the Sonepar Group holding a global vision. As a manager reported: "the headquarter's concern was that while some countries at the forefront were already experiencing high

shares of online purchasing, the less advanced would have been out in a few years. They made this clear to us" (IT & Digital Director, 8). The Group's goal developed into: "to become the first global B2B Electrical distributor that provides a fully digitalized and synchronized omnichannel experience to all customers," signaling the company's willingness to innovate and reinforce its core business.

While Sonepar's first basic digital platform dated back to 1999, it was never really used, developed, and promoted by Sonepar Italia. It was a simple functional solution with a basic search engine, used just by a niche of customers. As an informant observed: "there was this corporate myopia about how many users outside were waiting for a proper digital solution" (Former Marketing and Customer Experience Director, 11). From 2012, we tracked an increasing effort aimed at managing the digital channel professionally and with dedicated focus, as one manager underlined: "Sonepar was consistently investing in the future: e-commerce slowly became a number one initiative and significant investments in technology drove a healthy growth on a long-term basis" (IT & Digital Director, 8). In 2012 Sonepar Italia began what was termed a 'Digital Journey' with the implementation of a very sophisticated proprietary e-commerce platform that relied on a novel product information system (see Table 4, column b). Sonepar executives defined this as a "quantum leap" for the firm. At the same time, an internal training program was introduced to support the digital transition, and a network of 'digital ambassadors' was formed to assist the salesforce in adopting and understanding the digital platform and its functionalities. A second step was the setup of customer visits to introduce the platform. An informant recounted: "we had even created incentives for the customer to place their first web order during the visit. This worked very well, almost every visit ended with one order and 30% of those customers ordered online again on their own" (Former Marketing and Customer Experience Director, 11) – see Table 5 for a detailed list of the initiatives.

While the managerial structure had begun to enforce the new digital practices, however, an increasing number of people began to express their concerns about the fit between the execution of a digital strategy and the traditional distribution assets. According to informants, the aseptic digital implementation was endangering what they described as "core elements" that had been around for decades: "personal relationships, human contact…that was our way of interacting with customers" (Area Manager, 6). As a Sonepar Italia executive explained:

"The use of e-commerce has been a marginal phenomenon in Italy for so long! We experienced great difficulty in encouraging people to use it, more for insiders than outsiders. [...] Sellers believed that a digital channel would cannibalize sales, it was seen as a competitor by them." (Key Accounts and Vertical Markets Director, 11)

Although changes were accepted somewhat reluctantly, from 16 million euros of Sonepar digital sales in 2012, the digital channel grew to approximately 101 mln in 2019 (see Figure A3 in the Appendix). The Data Analyst Sales and Marketing of Sonepar Italia mentioned that customers gradually appreciated digital development to the point that delighted customers are those who purchase the most through the web channel. Many informants reported how "there has been an evolution, all for the better," while considering Sonepar ahead of other incumbent distributors:

"The possibility of autonomously ordering online represents what is bringing us closer to Sonepar, it is the only traditional distributor I know that has developed a well-structured website and I buy mostly online from them: that's the sense of celerity; time optimization is key for us." (Original Equipment Manufacturer, 42)

With the gradual success of the first initiatives to stimulate digital growth, in 2020 Sonepar Group decided to build a "Digital Factory: the heart of the digital transformation" (Sonepar, 2020) with a project called "Spark." An informant reported:

"This structure must design and deliberate omnichannel technology solutions to the Group's countries. The Spark platform has a proprietary search engine built specifically for our industry. It can play the game with the best platforms in the world, having nothing to envy to Amazon, AliExpress, etc." (Marketing and Customer Experience Director, 9)

The *exploration of digital assets* was reinforced by an *operational excellence focus* (see Table A3). Electrical installers were getting accustomed to next-day or even same-day deliveries and a wider product range. At the same time, producers were not able to provide such a level of service because "production and distribution are two different professions" (Divisional Director, 2), and "such improvement implies immense effort in terms of resources, time and know-how that the producer doesn't have" (General Counsel, 4). According to informants, Sonepar Italia slowly became aware of the need to enhance

its operational performance to sustain a competitive position:

> *"We were used to opening a point of sale and filling it with stocks. The problem is that customers were asking for an ever-increasing product range offer. This, in turn, was leading to expensive stores becoming bigger and bigger. [...] In addition, installers began to expect a delivery service like that of Amazon. We had to try to get closer to it, and, if possible, go beyond it. Logistics then became a key for survival and success." (Supply Chain Director, 12)*

The focus shifted to the logistics service, together with efficiency (see Table 5). The firm began to reconsider the logistic model and the related information systems to improve the quality and effectiveness of processes, meeting and, simultaneously, nurturing day-by-day product requests (see Table 4, column b). As the Supply Chain Director explained: "the reorganization of processes started from warehouse management." In the last 10 years, the company completed a shift from local distribution centers to a supply chain network centralized just around two central distribution centers (Padova and Pomezia) and three regional distribution centers (Catania, Cagliari, and Modugno) making the company's product portfolio available in the various distribution channels (including the branch network). They offered a wider range of items and could deliver throughout Italy usually in 1/2 days at a competitive price. In 2017 Sonepar also instituted an office dedicated to inventories and national procurement and hired employees with excellent skills in statistical and predictive analysis, using complex systems of demand analysis and forecasting that resulted in 'simpler, faster and much more accurate operations.' This was a cutting-edge operation, and employees described how Sonepar Italia was promoting a 'cultural shift' that was not consistent with the traditional industry culture, questioning its applicability:

> *"Trust me, it was a Copernican Revolution! Some customers expressed their dissatisfaction because they used to find 1 mln of stock in a branch that became 300 thousand euros. [...] Shop managers were sorely disappointed when the centralization happened with a negative impact on their power. We started to say to our employees: no more shipments from the stores, ship products from the more efficient central warehouses. However, if we were promoting web sales and improving our logistics infrastructure, why keep focusing on counter sales?" (Supply*

Chain Director, 12)

An informant stated: “we anticipated 15 years of market evolution, and we changed overnight, partially alimenting competitors” (Area Manager, 6), but while experiencing such discrepancies between the new supply chain network and the traditional practices, customers gradually recognized and welcomed the positive effects in the service provided brought about by those advancements:

> *“We used to always visit the physical store of the wholesaler to get the material we need, and it was very time-consuming. Over the years, Sonepar Italia led us to place orders, today for tomorrow, and the material arrives where we want, without any waste of time.” (Small installer, 44)*

The improvement in logistics resulted in an efficiency-oriented system (helped by several M&A operations, see Figure 1.b) that significantly evolved the service and reduced the delivery time; now the customer noticed what an informant called a “different velocity” (Small installer, 33). As an example: “if we used to go to Belluno one time a week, now we go there every day and sometimes several times a day. We are there before 7:30 a.m. to make the first round, and if it’s needed, we are back for the second at 2 p.m” (Area Manager, 6). An informant remarked:

> *“Sonepar is fast, and effective, with good warehouse management. Others didn’t build such a logistics infrastructure.” (Coordination Officer, 15)*

Remarkably, both faced with the need to manage growth plans, in 2021 Sonepar Italia signed an agreement with an established footwear company to exchange two respective warehouses, enabling further evolution of the logistics system with the creation of a new single hub for North Italy in Padova. As the Logistic and Development Manager recounted: “it will become one of the largest and most advanced in the industry, allowing to improve even more the level of service offered to customers and representing, in turn, an opportunity for suppliers that will certainly not go unnoticed" (Il Mattino di Padova, 2021). In October 2021, the “Caterpillar project” was also launched to further redesign Sonepar Italia supply chain and give customers a tailored service, in an economic and sustainable way.

While some changes manifested during the systems adaptation, informants described

how the application of the new practices gradually helped to become "credible competitors to digital players with an excellent service, like Amazon." Additionally, "let customers buy from a producer: they will get the product in several weeks, where the producer wants, customers will have to open an account, and pay right away. On the other hand, if they order it from our well-developed web platform, customers receive them tomorrow morning at 7:30, paying 180 days… Why not?" (Divisional Director, 2). For low-end products, it was essential to ensure "efficiency, calibrated logistics, right assortments." (Supply Chain Director, 12) The company aimed at "creating such a customer experience that there was no reason to buy somewhere else" (IT & Digital Director, 8).

Transition to Digital (Phase 2): High-End Servitization

A second fundamental protective process unfolded during the transition to digital phase. While the systems adaptation represented "a thing Sonepar had to do" (General Counsel, 4), Sonepar responded to the digital disruption of its distribution assets also by engaging in what we call 'High-End Servitization' (see Table 4, column c). Conceptually, Sonepar Italia achieved this through a *competence specialization* and *focus on advice* together with a *fostered upstream network collaboration* and a mechanism of *segment extension* (see Table A4 in the Appendix).

While traditionally offering a limited product range of basic products and a service essentially expressed through product availability, Sonepar Italia updated its belief about its identity and evolved its strategic approach to the market (see Table A4):

> *"We understood that value creation was more about following customers with vertical expertise. Now we need to further develop the ability to help the customer, especially on the purchasing of more sophisticated products. It is where we can prevail over pure players like Amazon, already offering very competitive prices and an excellent logistics service. If the customers start talking to a specialist who asks the right questions and understands their needs, this becomes advice that the pure online experience doesn't provide." (President and CEO, 1)*

As a manager explained: "We tried to ask: Why are customers still buying from us? What are they looking for? Advice!" (Services and Strategy Director, 10). Informants

consistently reported how, at this stage, Sonepar Italia became aware of the importance of *competence specialization* (see Table A4) as "the key answer against disintermediation" by pure players, and of the need to move "from product selling to consultancy selling" (Account Manager Distribution, 16) since "no AI could replace the advice of a well-prepared, educated salesperson who perfectly understands the customer needs" (Transformation Quality and Processes Director, 5). "Being a time now when customers can find everything everywhere," a supplier reflected, "Sonepar needed to shape customers' understanding that they can rely on the company for something else: content and help" (National Key Account, 47). It also represented a way to protect the company from producers selling directly:

> *"The manufacturer knows his solutions very well and can offer the best fit of their products to a specific need. How does a distributor face this situation? By enhancing expertise, to the point where you can almost achieve the technical product knowledge of the manufacturer, with the advantage, however, of being able to offer broader solutions, beyond a proposal related to one unique brand." (Divisional Director, 2)*

Coherently, in the last decade, the firm focused to include within its competencies not just the physical distribution, but also the ability to explain to customers more complicated product functionalities and assist them in the purchase of complex solutions. Sonepar originally supported the needs of customers in a way that relied on a "loosely structured and disorganized system," therefore there was a need to "define some standards" (Former National Specialist Markets Manager, Source: Logistica Management 2019). An informant observed that "while the importance of competence specialization has been around for one decade, it took five years to identify the best model for managing these skills" (Key Accounts and Vertical Markets Director, 11). For example, in the highly specific world of industrial automation, initially, a customer portfolio was assigned to specialists. This produced what some informants described as a 'non-engagement by the network:' the general sales network did not want to call specialists in case of need because they were afraid they would take over their customer. Therefore, "instead of creating synergies, we were creating divisions" (Strategy and Services Director, 10). To ensure closer involvement customers were then assigned to the sales network, assisted by the specialist markets. Gradually hiring and training technicians from different fields, the

result was the creation of seven specialist markets coinciding with the product lines, and intertwining with the commercial divisions: Industrial Automation, Power Distribution, Lighting, Renewable Energy & HVAC, Building Automation, Safety & Tools, Cables. According to an informant: The Strategy and Services Director explained how the specialist markets became "key in the sales strategy and organization" and that "the services offered by Sonepar are the result of a thinking that places service customers at the center." The creation of specialization points for each category helped solve specific needs, as a customer stressed: "we now have a specialist to talk to and carefully be advised for any problem" (Small installer, 33). A customer recounted:

> *"Initially, the work we did with Sonepar Italia was very limited because we did not have any added value from them. When there started to be competent sales and technical advice, we saw the distributor as a winner. We needed problem solvers!" (OEM, 35)*

While the network relied on branches in the territory, the specialized markets were developed through Competence Center providing targeted sales support services to branches in a certain territory. Sometimes beyond the Competence Center, there is an Experience Center: "a physical facility where Sonepar showcases its installation capability through an immersive experience." By 2022 three competence centers have been built for BAC (Rome, Casoria, and Milan), and one for HVAC in Padova.

Consequently, over time manufacturers started to rely on the company even for the distribution of more advanced products while initially considering the distributor technically unable for the purpose. Informant producers highlighted that there is still a significant part of their product portfolio they prefer directly selling such as the most technical and customized products, highly important sales or when selling to very large customers. Nonetheless, they rewarded the improvements in Sonepar Italia technical approach:

> *"The number of products we sell through distributors has increased considerably. [...] We originally used to sell purely directly because our products need support and expertise. We didn't want a distributor adding any value. Over time, however, we realized that Sonepar has qualified people able to competently speak about our products. The more the competencies, the more our business with them will grow."*

(Account Manager Distribution, 16)

Moving from being a "box mover" to a "value box mover" (Transformation Quality and Processes Director, 5), Sonepar Italia significantly increased and prioritized the high-end products in its product mix, where the company could support the customer with "an additional service that distinguishes it from all other competitors in the market" (Key Account Distribution, 14). Notwithstanding the variety within different product lines and areas, Figure A4 in the Appendix shows that the average price is higher for specialist markets. The possible reasons for this result are identified by the fact that specialists work either on higher value-added products than the general network of salesforce or on higher volume orders where a designed service or work with the manufacturer could be required.

Sonepar then became a specialist focusing on products with high service content, while providing great efficiency on low-end products that inevitably represented the focus of digital players, as an informant well described:

> *"The arrival of digital didn't result in the loss of intermediary, whereas in its transformation: Sonepar now offers mainly specialized products disregarding commodities. The new web intermediary works well with basic products, and it is where it represents a threat to incumbent distributors. In contrast, on complex, and special systems, Sonepar can have its strength through advisory service. They are not focusing on the loss of revenue on commodities but probably see it as a natural evolution, opposing its specialized expertise." (National Key Account, 23)*

At the same time of this profound transformation, Sonepar Italia committed toward a *fostered upstream network collaboration* (see Table A4). The year 2013 was critical for the company: it marked the beginning of a period of concerted efforts to improve collaboration with suppliers. As an informant mentioned: "in 2013 when I arrived the first problem I had to solve was the bad relationships we had with suppliers" (Vendor Relations Development Director, 7). By 2022, the informants explained how intense relationships had become no longer an option to face the changing market, but a "mandate necessity."

The company's drive to rebuild these relationships for business development resulted in a diverse nature of the link between Sonepar Italia and its suppliers. Both were facing the need "to evolve more to a service concept, and create value, together" (Supplier,

Sonepar Italia Round Table Video, 2022). An informant supplier stated: “between our organizations, it is no longer a question of role, we are partner companies now” (Key Account Distribution, 14): from arm's length transactions where parties act in their self-interest they moved to collaborative partnerships:

> *“Producers and Sonepar have increasingly strengthened their relationships with specific shared strategies to support each other. I think the increasingly close cooperation of production and distribution will be a winning element, keeping the role of the electrical distributor strong.” (Account Manager Distribution, 17)*

Informants mentioned how a high rate of product commoditization undermined the specialization process initiated by Sonepar Italia to secure a competitive advantage in the digital era. Sonepar Italia CEO explained how “entire product categories were turning rapidly into low-end products, so we had either to find new focuses or let competition drain our market position.” For example, an informant recalled how ten years ago only specialists sold the inverter, while later any distributor had it. When asked to clearly illustrate the process, an informant reported:

> *“Complicated technologies over time become simpler, cheaper, and public adoption increases. Automatic gates, air conditioning systems, plc etc. are all examples of products initially complex that became simple as technology evolved. For instance, intercom systems required 7 cables to connect, therefore an expert specialized installer was needed for support in its installation. Today it only has 2 cables, they are basic products and extremely easy to install! In this sense, there is also a shift in distribution channels: from specialized stores the product moves to distribution, and, ultimately, to mass retail, meanwhile Sonepar turns into a box mover like all other competitors.” (Strategy and Services Director, 10)*

To offset the rate of obsolescence, multiple sources pointed to Sonepar Italia’s efforts to provide the market with new solutions, as an informant explained: “we need to understand the customers and lead them toward evolution, stimulate new needs, especially focusing on digitalization” (Area Manager, 6) because, as an informant observed, “Sonepar is part of the supply chain to bring value. Otherwise, it will disappear” (National Wholesale Channel Manager, 20). To keep a value-added positioning, they had

to always be at the frontier of the most innovative products by continuously updating technical competencies to effectively handle them. For instance, while intercom systems were turning into commodities, new technologies like IP surveillance systems were added to replace this loss. We called this mechanism *segment extension* (see Table A4). As an informant remarked:

> *"I believe Sonepar demonstrates what electrical distributors should do. When we first heard about photovoltaics, Sonepar was the first company in Italy structured to bring those new solutions to the market and give technical support. With increasingly competent structures Sonepar can anticipate market expectations." (Account Manager Distribution, 17)*

The photovoltaic example showed the company's willingness to bring new technologies quickly into the electrical distribution business, and other similar relevant cases have been mentioned (see Table 5). As innovation was extremely important for the success of the organization, new services were introduced too. The North Industrial Automation Director mentioned the development in 2014 of a new application for customers: "its idea was to have a graphical interface to view parameters and make commands from mobile devices independently from the system. We wanted to help the installer evolve through our unique alternative proposal." Further, to bring and promote rechargeable stations to the market of electrical installers, in 2019 the company organized the "Sonepar Future Road," an educational tour visiting eight Italian regions using 100% electric cars. The Vendor Relations Development Director explained that their revenue was 600,000 in 2019 and has grown to 22 million in 2021. "Within two-three years it will be 100-150 million… so we might not care anymore about lamps." A Marketing Promotion and Communication Officer recalled that: "we wanted to make installers aware that new technology was emerging and there was a new business for them. Our goal: "Lead our customer to the business of the Future" (Sonepar Future Road Video). The Experience Center in Milan, namely the ERA Smart Center, was dedicated to the most innovative technologies in the field of IoT and Smart Building. The basic idea was that "it is our role as distributors to foster the adoption of changing technologies as quickly as possible downstream. How can we do that? By generating immersive experiences and getting customers excited about innovative solutions" (Source: Sonepar's press release

2022).

The implication of this process was that it became a continuous introduction of innovative products and services in the market, leading to an even more quickly phasing out of products and a higher rate of commoditization. The more innovative products were introduced, the more the high-end products turned into low-end, which resulted in a continuous need for the firm to always be innovative in its product offer. The growth of the last decade attests to the firm's ability to continuously reimagine, and ultimately protect, a competitive advantage over the long term. Executives defined this as a strategic path of "a company that innovates constantly, without ever stopping" (President and CEO, 1).

Final Outcome: Hybrid Digital-Driven Strategy

By following this process model, the final resulting outcome is a new organizational strategy. After the digital discontinuity, Sonepar Italia adopted what we named a "Hybrid Digital-Driven Strategy," the core result of a digital transformation. The company combined online and offline channels to let customers use the best of both worlds through omnichannel and unique purchasing experiences. Depending on the type of purchase and on personal preferences, the customer may want a relationship with salesforce or an online self-service experience. In 2022, the customer survey shows that customers purchase from Sonepar Italia equally using the available touchpoints (see Figure A5 in the Appendix).

The Strategy and Services Director concluded: "the physical (advisory) option is still an important card for us to play, combining it with a well-developed digital channel we give customers what is not present in other experiences: a hyper-personalized experience." Now the hybrid mode wins.

DISCUSSION

We conducted an inductive, single-case study to inquire into the mechanisms by which incumbent intermediaries react to a discontinuity of their core knowledge by progressively changing their traditional strategy. The process model we derived to illustrate and explain those responses represents our main contribution (Figure 3). We summarize the evolution of incumbent intermediaries during the process model in Table 6.

Table 6 - The Evolution of Incumbent Intermediaries

	a) Phase 0	b) Phase 1	c) Phase 2
CORE KNOWLEDGE	• Distribution competence (e.g., management of assortments, stock, and obsolescence) • Brick-and-mortar distribution channels • Sales network • Marketing activities • Arm's length transactions with suppliers	• *Evolved* distribution competence • Brick-and-mortar distribution channels • Sales network • Marketing activities • Arm's length transactions with suppliers • *Proprietary advanced digital distribution channel* • *Pricing management*	• Distribution competence • Brick-and-mortar distribution channels • *Specialized* sales network • Marketing activities • *Collaborative partnerships* with suppliers • Proprietary advanced digital distribution channel • Pricing managemenet • *Excellent customer service (e.g., consultancy and training)* • *Product portfolio management*
COMPLEMENTARY ASSETS	• Activities such as accounting, legal, and finance, human resources management • Complementary technologies • Pricing management • Product portfolio management • Good customer service	• Activities such as accounting, legal, and finance, human resources management • Complementary technologies • Product portfolio management • Good customer service level • *Digital competencies*	• Activities such as accounting, legal, and finance, human resources management • Complementary technologies • Digital competencies

Originally, incumbent intermediaries follow an 'Offline Strategy' and create value by aggregating and selling manufacturers' products, mostly low-end. They deploy traditional distribution assets, i.e., distribution competence, physical distribution channels, and sales network, combined with supporting complementary assets (see Table 6, column a). Among the supporting activities, product portfolio management is focused on maintaining a vast offer of products, at a fair price. The wider the offer the better. The arrival of digital then disrupts those assets, resulting in *external challenges to the organizational strategy* of incumbent intermediaries. We identified an altered competitive

landscape and evolving customer expectations as the two components of those challenges. Producers can directly link to customers, or traditional intermediaries are substituted by digital intermediaries with disruptive business models. With digital technology, customers are also empowered with more access to information, and options, and their expectations about intermediaries' service become higher than ever. Overall, the external challenges cause a disintermediation threat for incumbent intermediaries that need to satisfy a new value creation imperative, and these challenges represent a response catalyst toward a strategic change (see Figure 3).

In the aftermath of the discontinuity that we termed 'the transition to digital,' we presented a first phase where, despite some initial inertial problems, incumbent intermediaries accomplish a progressive *systems adaptation and business model change*. The incumbents respond to the disintermediation threat by reinforcing and modifying their core know-how with the addition of a digital distribution channel, together with a general improvement of the traditional distribution assets. Since incumbents' initial digital technology gap is significant, to close it quickly they typically rely on external actors for tasks such as digital distribution channel development, optimization, and indexing processes. To face the arrival of digital, traditional intermediaries end up with a more complete configuration: the core knowledge becomes distribution assets also based on digital and pricing management, but the competencies that support the development and the running of the digital distribution channel are complementary assets (see Table 6, column b).

We then posited the existence of a second phase, a *high-end servitization* of traditional intermediaries. The sole systems adaptation does not provide incumbents with a sustainable competitive advantage when a technological discontinuity disrupts everything they do. It allows unveiling new forms of value creation emulating entrants' business models while contributing to living up to customers' renewed expectations after the discontinuity. However, in a context of unprecedented industry competitiveness, low entry barriers, and customers' increased bargaining power, the value captured by incumbent intermediaries is reduced and their survival uncertain. To keep a steady revenue stream, they understand the need to do much more than simply distribute and sell products, whether digitally or not. Hence, the existence of a second phase, where incumbent intermediaries pursue a servitization approach to build a differential advantage

and position themselves as unreplaceable actors to the customers' eyes. Incumbent intermediaries gradually move away from selling products alone to selling a solution, a product wrapped in services – upselling consultancy and training. Customers still need professionals to help them understand what they are buying and ensure their expectations, and incumbent intermediaries understand how this constitutes a unique opportunity to secure customer loyalty. Incumbents thus develop and specialize the competencies of the sales network, so as to gain the means for differentiation (see Table 6, column c). Consequently, after the discontinuity, a double positioning sees digital entrants focusing on the commoditized part of products, while incumbent intermediaries act as specialists that prioritize high-end products with a high service content, where they can offer more value since competent support is particularly required.

Favorable conditions evince for interfirm cooperation between incumbent intermediaries and original suppliers. The latter have an incentive to deploy incumbents' distribution assets that can effectively mobilize their products and communicate their value to the customers. In turn, the former exploit a collaborative relationship with suppliers to maintain their role in the industry and have access to high-end products. Incumbent intermediaries then increasingly collaborate with the upstream part of their network, and collaborative partnerships mostly replace previous arm's length transactions, becoming a core element of the intermediaries' strategy (see Table 6, column c).

Nowadays a trend of high commoditization can be observed in nearly every industry. The term commoditization describes a process in which high-end products rapidly turn into low-end products and become more and more like daily supermarket purchases, i.e., widely available products where consumers perceive no difference between the offerings of different suppliers, other than price. A commoditized product is characterized by low margins, high competition, and low brand equity. Some of the driving reasons behind this phenomenon are technological advancements, quality improvements of products, easier access to information, and the emergence of more qualified professional profiles. In turn, this is an unfavorable situation for the high-end servitization of incumbent intermediaries, and the competitive advantage secured by that. Commodities are smoothly managed by digital entrants, and when buyers can more easily compare items, competent support is no longer needed. In order to keep a differential positioning and counteract the negative

effects of the commoditization process, incumbent intermediaries realize how innovation becomes extremely important for a sustainable competitive advantage. The response is a mechanism we termed 'segment extension:' incumbent intermediaries become specialized actors in innovation that force a continuous introduction of high-end products and new services in the market. This is possible by previously foreseeing uncovered products that intermediaries can effectively handle, and constantly updating competencies on such innovative solutions. It would be hard to apply services to the distribution of pure commodities, thereby product portfolio management becomes strategic (see Table 6, column c). A noteworthy feature of the process is its nonlinear ramification: considering how quickly commoditization affects industries, the second phase encompasses a recursive process (see Figure 3) that is repeated at an ever-increasing pace. Yet, managing the pace of such commoditization can entail a strategic opportunity for incumbent intermediaries.

Incumbent intermediaries then respond to digital disruption with a dual offensive: great efficiency on low-end products and excellent service on prioritized high-end products. The outcome of the process model is a 'Hybrid Digital-Driven Strategy' that envelopes an omnichannel approach, namely a personalized and integrated vision for customer experience while combining it with high-end servitization. Table 6 depicts the complete evolution of incumbent intermediaries within the grounded model in terms of their core knowledge and complementary assets.

Main contributions

Our grounded process model offers a key contribution to the studies on discontinuities and adaptation (Eggers & Park, 2018) by unveiling the mechanisms behind intermediaries' response (Figure 3). Our model theorizes that when adapting to technological disruptions, intermediaries need to reimagine their core activity: distribution assets integrate digital and are servitized through specialized competencies and a product portfolio strategy that counteracts and accelerates products' obsolescence. Further, during the process intermediaries change dynamically what is part of the core knowledge and what of the complementary assets. Our contribution is overall novel, and it does not conflate with former ones for incumbent producers, and it helps shedding light on the challenging adaptation process to a core-knowledge discontinuity where the core

is represented by distribution assets.

Former literature has focused on discontinuities affecting incumbents' core knowledge (e.g., Benner, 2010; Eggers & Kaplan, 2009; Sosa, 2011). Cozzolino and Rothaermel (2018) indicated incumbent producers may cooperate with entrants in response to a core-knowledge discontinuity, because they have an incentive to access upstream new core knowledge, while entrants in turn have an incentive to access incumbents' specialized complementary assets to capture value. Conversely, when complementary assets are destroyed while the core knowledge is mostly preserved, Cozzolino and Rothaermel (2018) explained how the incumbents' adaptation to a complementary-asset discontinuity often leads to horizontal cooperation among incumbents (e.g., in the form of consortia and intra-industry alliances) to address the common threat posed by the entrants' downstream specialized assets and capture the value created by their preserved core knowledge.

However, a discontinuity that affects distribution – an activity peripheral to incumbent producers (as the one affecting their complementary assets) – ends up completely destroying the core activity of incumbent intermediaries, hence posing risks to their very survival. The process we proposed for incumbent intermediaries is thus complementary to yet radically different from those theorized for incumbent producers: no vertical cooperation with entrants nor horizontal with other incumbents is present. Instead, cooperation with upstream players in the supply chain (i.e., product suppliers) is deployed to secure the differentiation advantage given by a (premium) servitization through strategically using competencies and product portfolio.

Our second contribution is to introduce novel insights into Teece's (1986) model and literature on complementary assets. In his seminal work on how incumbents can profit from innovation, Teece (1986) stated that at the upstream core-knowledge level there are value-creating activities such as innovation, while downstream specialized complementary assets serve for value capture activities as the commercialization of the innovation. We claim that this model needs to be applied to incumbent intermediaries where complementary assets are the core know-how, thus suggesting that such central dichotomy in management literature needs to be taken as contingent on the kind of player adopted. Furthermore, as we presented in Table 6, what is part of the core knowledge and what of the complementary assets changes depending on the temporal phase in which the

actors are analyzed within the response process. Therefore, we propose a distinct view of what has always been statically depicted to be "core knowledge" or "complementary assets." These concepts are instead relative and peculiar, depending on (i) the activities a firm undertakes, and (ii) the temporal phase of the analysis.

A third contribution relates to introducing the notion of *high-end servitization* for intermediaries. This aggregate dimension stands for a mechanism by which incumbent intermediaries become servitized actors that go beyond product selling with services such as consultancy and training. Providing excellent customer service through a specialized sales network becomes part of the core knowledge (see Table 6, column c), being an opportunity to increase customer value perceptions and exploit an ongoing relationship with the customer that is not transactional as in the case of pure product selling. By following the mechanisms enveloped in this aggregate dimension (in Figure 3 see 'high-end servitization'), incumbent intermediaries turn into servitized actors where a supply becomes a dedicated service to meet customer needs. We thus contribute to the conversation on servitization (Kastalli & Looy, 2013; Visnjic et al., 2016) by isolating a servitization mechanism that is specific for intermediaries. Prior research has consistently depicted servitization as an important strategy to achieve a differential advantage (Coreynen, Matthyssens, & Van Bockhaven, 2017; Cusumano et al., 2015), where manufacturers or other product companies expand their core product offerings with industrial services such as spare parts delivery, repair and maintenance, consultancy, and training. Our study describes how intermediaries can benefit from servitization as well, yet in a different form: by selling consultancy and training, through specialized competencies and a strategic use of product portfolio. Servitization thus revolves around a generally increased customer focus and relationships, and in this way incumbent intermediaries seize their opportunity for long-term profitability.

Boundary Conditions, Generalizability, and Avenues for Future Research

We recognize the importance of carefully considering the boundary conditions of our contribution and acknowledging the opportunities for future research. Our process model is applicable to industries where a technological discontinuity destroys the value of traditional complementary assets that likewise represent the incumbents' core knowledge

(Eggers & Park, 2018). Indeed, multiple industries facing internet disruption are brokered by intermediaries and our process model is expected to apply to them. It is worth noting we derived our analysis from what we labeled as "commercial intermediaries," involved with the distribution of physical goods. Moreover, our study deals with the professional business-to-business distribution of technical products. Nevertheless, comparable trends have been impacting retail and the model developed herein is expected to apply to similar contexts, where future research is needed to test its validity.

For example, digital transformation is revolutionizing the pharmaceutical industry and reshaping its intermediaries. Pharmaceutical wholesalers have significantly evolved in recent years. They have been investing in distribution networks together with technological innovations and are now able to sell products to pharmacies daily, while in the past it was once or twice a week. High-rotation products are always in pharmacies, while other products have a delivery guaranteed in very short lead times. The legacy service provided by pharmaceutical wholesaler logistics remains at the core of a company's operation but there are an increasing number of services and products being bolted onto this core, transforming the "pharmaceutical wholesaler" into a "pharmaceutical service provider" to the entire supply chain and adding value to patient outcomes (International Federation of Pharmaceutical Wholesalers).

The intermediaries at the greatest risk facing digital disruption may be those operating in large segments with high margins, limited technical expertise, low value-added services, low customer purchasing power, and easy-to-ship products. Based on these assumptions, electronics, for instance, may face a large disruption risk (McKinsey, 2019). Incumbent intermediaries in the market for consumer electronics and home appliances have undertaken revolutionary changes in the last decade. The European electronics retailer Unieuro with sector leadership improved the omnichannel customer experience, with the increasing weight of e-commerce and the evolution of the role of physical stores, which keep being central and distinctive. The company has and will continue to expand the product categories offered, also leveraging its partnership ecosystem to better intercept customer needs (Unieuro Corporate Press Release, Strategic Plan to 2026). Similarly, the CEO of Euronics Italia recounted how they have faced challenges by accelerating digital transformation and reinventing the brand purpose. The electronics retailer's focus is not on product selling or prices anymore, but on realizing

people's expectations, and desires, even through technology (Gdoweek magazine).

We predict that incumbents that do not follow our process model might experience different outcomes or be overtaken by entrants when facing a technological discontinuity. We thus present the counterfactual of the retail-based videotape rental chains, which have been replaced by streaming video-on-demand via the internet delivered by new intermediaries. When cable and satellite televisions began to offer video on demand, and the first companies offering the possibility to watch movies online were emerging, competition for rental incumbent intermediaries became extremely fiercer. On the other hand, as an example, Blockbuster was offering an expensive, inconvenient service, and, most importantly, failed to adapt to the technological evolution. Blockbuster could have purchased Netflix for about $50 million in 2000 (The Independent, 2022), and this does not mean that the company would certainly have been successful, however, its rejection shows the incumbent's core rigidity in adapting to digital. So, a step-by-step process as presented in the model was not followed, leading as a result to the substitution by new entrants of the incumbent intermediary.

Future research may further develop our theoretical understanding by investigating the validity of our process model in other industries and expanding the study by considering other types of intermediaries to see whether and how our findings are relevant. Further investigation may also extend our efforts to examine the implications of different technologies (e.g., Blockchain) as that of the study on incumbent intermediaries in the future.

CONCLUSIONS

The investigation of technological discontinuities and disruptive innovations has been so tightly focused on incumbent producers that scholars have overlooked incumbent intermediaries, which are extremely common actors in a wide range of industries. This lack is of particular relevance today when, with the ongoing digitalization of many industries, disintermediation is a timely and compelling phenomenon. Our study then attempts to close this theoretical gap by examining the response of an incumbent intermediary to the arrival of digital.

When responding to technological discontinuities, previous literature placed great emphasis on digital. While we do not deny that digital is important, we shed light on the fact that a successful strategy is determined only to a small extent by that. Certainly, technology plays a dominant role in business transformation, but intermediaries need to go beyond that and secure a differential advantage through high-end servitization. What really constitutes a successful response is a process of competence specialization combined with a strategic use of the product portfolio. Prioritizing high-end products with enhanced service content, incumbent intermediaries can counteract industry commoditization and disintermediation by becoming specialized actors in innovation that constantly introduce new high-end solutions in the market. We therefore invite established intermediaries' executives to consider our insights to help deliberate a successful response to technological discontinuities. By disentangling a granular process of intermediaries' adaptation, we conclude that intermediaries need to recursively renew the premium core competence and then enhance this with the addition of digital assets: an effective response to digital is not always just digital. We hope that future research will complete our initial account of possible alternatives to turn digital disruption into an opportunity for traditional intermediaries.

APPENDIX

Table A1 - Products traditionally marketed in the Electrical Distribution (ED) Industry

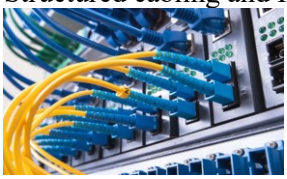
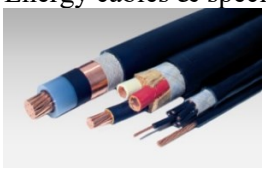
Examples of product types	
Electrical accessories 	Civil and industrial sockets and plugs 
Electrical equipment 	Photovoltaic and solar thermal 
Electrical distribution panels 	Home automation 
Industrial automation 	Internal and external lighting 
Structured cabling and ICT 	Heating and ventilation 
Energy cables & special cables 	Pipes and ducts 
Panels and control units 	Security systems (fire, intrusion) 

Table A2 - External Challenges to Organizational Strategy (Digital Arrival)

Descriptive summary	Illustrative quotes
Altered Competitive Landscape	
The emergence of entrant distributors selling electrical materials online	The Web is a phenomenon that is having a devastating impact since it serves everyone and is a threat to all traditional intermediaries. The process is very fast, now more and more the model that the web offers is comprehensive, technical, supportive, photographic, intuitive...etc. This channel is the new intermediary (23). I've started to buy electrical materials on the web, some websites even give financial credit which wasn't possible before. People are buying more easily online and sometimes I even find material that I can't find from traditional distributors (40). Amazon has all our products, there are so-called brokers in this industry and parallel markets as well: someone buys our products and sells them on Amazon. Besides Amazon then there are many other marketplaces (14).
New opportunities for producers to bypass incumbent distributors	We are increasing our direct purchases because many producers that used to target only the large manufacturer market have now begun to target end users as well. Where I can save money, I go to the direct channel from the manufacturer. Digitalization facilitates a whole range of relationships and opportunities to reach the needs of individual players in the supply chain (35). In the electrical material industry, disintermediation is definitely a threat to traditional distributors. We also have a relationship with Amazon, it is one of our customers which can lead to a loss of market share of the traditional distributor (19). The process of disintermediation is definitely here, the manufacturer can now contact the user directly to recommend products, give information, and offer the price list. The distributor has the feeling of losing revenues because manufacturers have now their own website, where customers can get all the possible information. Similarly, a company like ours with a worldwide presence cannot avoid exploring new avenues and figuring out what the evolution will be (27).
Unprecedented information symmetry reducing profit margins	Now there are platforms that compare prices, and the difference in prices between different services will be increasingly highlighted. Digitalization facilitates the circulation of information, and everyone is asked to offer the best price (40). With the Web you get informed about the news earlier, the Internet helps find the best price, and the customer is more informed (16).
Evolving Customer Expectations	
Customers' increased use of digital purchasing methods	The Web is the future: upload a list and buy the material. The future is like that, toward the device. This allows us to purchase products with much greater ease, and more speed (40). The Web has changed and sped up the way customers buy because professional customers now hardly go to the counter except for certain very minor types of cases. Everyone now buys through digital technologies. (16).
A new emphasis on free next-day delivery and endless catalogs	We moved toward a world where the distributor must develop the ability to give a complete response to the customer quickly. Coherently, Sonepar became aware they had to give a quick delivery service and structure a solid logistics infrastructure (17).

Table A3 - Systems Adaptation and Business Model Change (Phase 1 - Transition to digital)

Descriptive summary	Illustrative quotes
Exploration of Digital Assets	
Pioneer recognition of the importance of digital change to leverage new opportunities	Sonepar is years ahead of any type of distributor. The company understood early on that the e-commerce tool would be one of the key go-to-market tools and it was ahead of any player in the market. Over the past 5-6 years, Sonepar's evolution has been impressive. (14) Sonepar started its evolution toward digitalization to give its customers a shopping experience as good as what we find buying on Amazon. The company is almost ready today on the digital side because they started working on digital evolution 5-8 years ago. Being part of an international group gives Sonepar Italia the ability to anticipate organizational models. The firm is always among the most innovative companies and is constantly facing changes, bringing solutions to get closer to the market and win. (28) As a pioneer, Sonepar responds to changing market needs instead of other competitors who are much more stabilized. (CEO, 4, Source: Sonepar Italia Round Table 1.91, 2022)
Digital Development: a "Digital Journey" toward a "Digital Factory"	Sonepar positively embraced digitalization. We are testing with Sonepar its new platform while among other wholesalers no one has asked anything similar. This gives added value to Sonepar, it means that it is an evolving company, in my opinion, a step above the others: I see more interest in digital development and more evolution than the other wholesalers. (46) For me, it is critical to have a fast and intuitive website, where I can also easily check product availability. I must say that Sonepar has built a very good digital platform. 2-3 years ago we dropped other wholesalers because they did not have a well-structured platform and were not giving me this service. (37) The fact that I have this web channel, in addition to personal relationships, is perhaps why I have an almost exclusive supply from Sonepar on the electrical industrial side. The others don't have a web solution like that. (45)
Operational Excellence Focus	
A new emphasis on the necessity to improve the market reach for low-end	On the basic products, we realized the need to become efficient box movers, with logistics automation to get closer to the Amazon model: endless assortments, advanced logistics, and limited costs. (10) We identified two key assets for the survival of our distribution channel: one was definitely digital as the world is going there; the other was logistics: the level of service makes the difference. Today the real battle is really on that. (7) The market has changed, it is much faster and more dynamic, and Sonepar needed to adapt to what the market now demands. (42)
Logistics development: enhancing efficiency and effectiveness of distribution	The fast communication flow and the change of habits brought everywhere by Amazon have led Sonepar to considerably enhance the logistics service level... on certain products, this is not even necessary! (26) Also prompted by the difficulties of the period between 2008 and 2012, there has certainly been a general logistics improvement and a stock reduction. Sonepar introduced centralized warehouses, and the firm knows how to manage this solution properly unlike some others. (18)
Gradual habits modification and appreciation	In 2002 we used to physically go to the wholesaler to get the material, but it was a huge waste of time. Over the years they have led us to delivery on-site. Now I almost always

order material today for tomorrow and many colleagues place their orders from the app. We buy almost 99% of the material from Sonepar. It has always been like this in the past and I think it will remain the same in the future because we find great convenience in their material delivery and speed of arrival. (32)

In the beginning, Sonepar created this policy of the central hub, in our case the one in Pomezia, which gave us difficulties because we were not used to it, we were used to buying with a shopping list in the store. Today we have learned to buy tonight for tomorrow morning, and we have adopted this way of working. For me, it is advantageous because I order when I need it. In this way, I have little stock because I know I will find it in a big warehouse. If I place the order by 8:30 p.m., tomorrow morning I'll get it. (44)

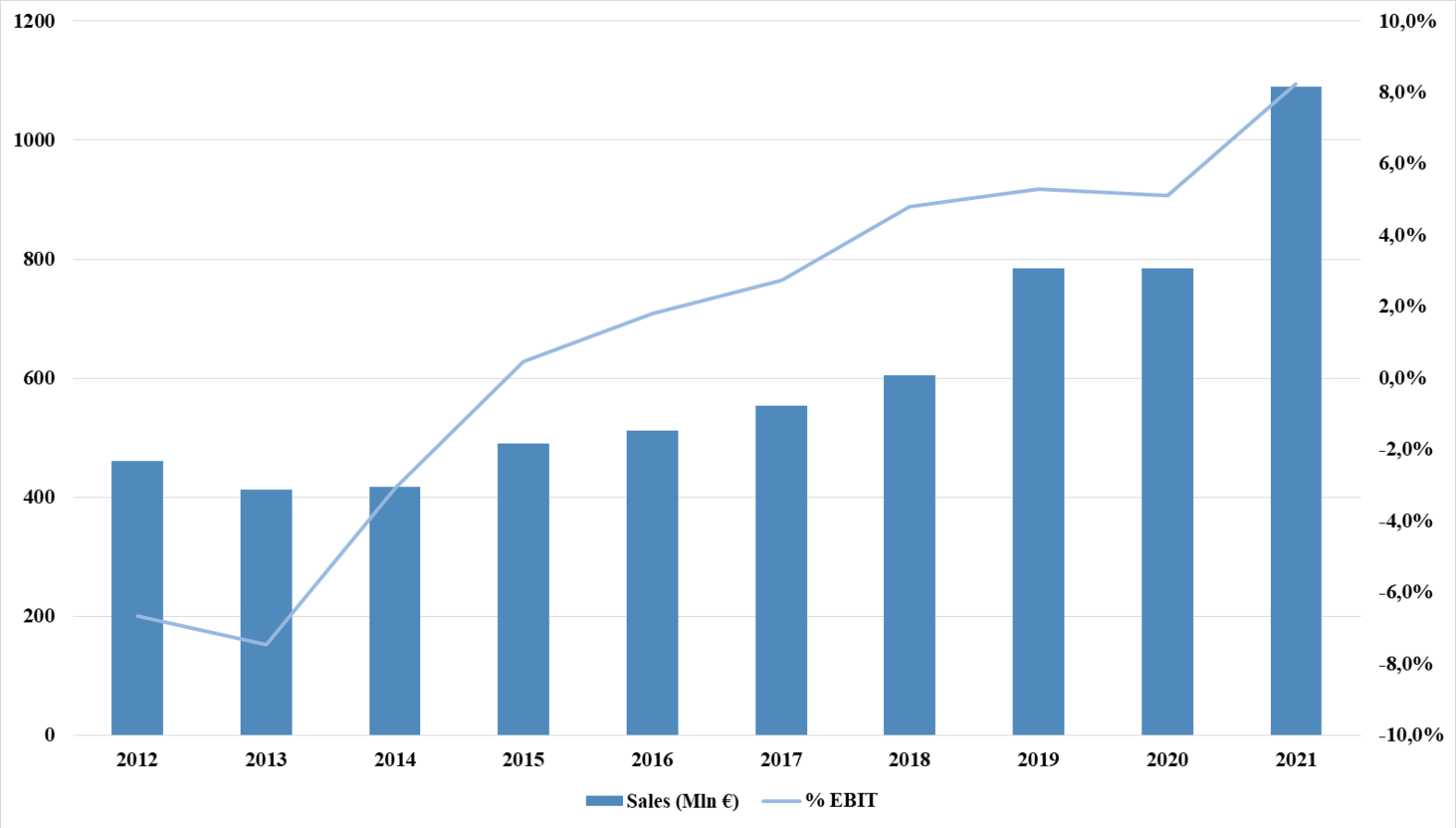
Table A4 - High-End Servitization (Phase 2 - Transition to digital)

Descriptive summary	Illustrative quotes
Competence Specialization and Focus on Advice	
Recognition of the importance of competencies as a protective mechanism	Online you can buy low-value products, and probably Sonepar understood a few years ago that their unique value was represented by consulting services. They had to put in place a structure of specialization that could provide a not-comparable alternative to those competitors to survive in the evolutionary process. (14) Sonepar has begun changing its model because the company realized that being a generalist means risking market exclusion as commodities are easily and sold through Amazon, ManoMano, eBay etc. The product became a component to creating the answer to the customer's needs but was no longer as fundamental as the ability to give solutions and services. (17) To avoid the disintermediation threat, we needed to change the organizational model through one big asset: expertise, thus having an organizational sales model that is able not just to provide a product at a fair price. but to provide expertise. We needed to answer questions such as should I buy this? How do I use/install it? A set of information that customer needs and digital distributors cannot give. (7)
Building competent support to sell high-end products and gradual expansion of product mix	There are things in Sonepar that are definitely not like in other distributors. Sonepar has evolved and specialized, increasing technical capacity beyond just the commercial capacity. Sonepar has gradually built an internal structure with technicians each dedicated to one area and it was one of the first to structure a specialized managerial/commercial organization. Consequently, the company is now much more protected from disintermediation than other traditional distributors. (20) The investment in specialist channels is a peculiarity of Sonepar, other distributors also have some specialists, but it is difficult to find a level of competence like that of Sonepar and this allowed us to gradually give them almost our whole offer because they can sell it. This specialization has increased over time and evolution comes through continuous education. (14) In digital and supply chain we are absolutely ahead of the rest of the market, but there is not this huge difference. The other aspect is the investment in skills: we need to have more and more competent people; skills make the difference and here we invest stronger than any other. (7)
Double positioning: distributor's prioritization of consulting services on servitized products Vs. entrant distributors focus on commodities	If we are talking about consumer goods like civil materials, switches, sockets, and light bulbs, yes you can buy that online, but you can hardly find more technologically advanced products. Installers have no reason to buy those products online because there you have no reliable customer service that a wholesaler could give you. In the electronic marketplace, you have to buy what you already know. (15) The most important value of Sonepar to me is given by the technical support in the evaluation of alternatives. This is a great added value. E-commerce is good, but not on all products. Advice on the right product is key: it is why I contact Sonepar. I don't know everything, so I go to the salesman, and he solves my problem, having developed expertise in everyday experience, being constantly updated, and seeing different situations. You won't find such advanced technical services online because they sell all kinds of products. Instead, here they only sell electrical material, so of course, they know what they are selling me. (33)

	We sell specialized products, and I see that this is a share of the market that needs a competent person to tell the customer what is best and give advice. Many products must be bought with expertise and not everyone has expertise in everything. Certainly, Sonepar needs to be very careful and should not lose sight of technical know-how because there is another slice of the market of standardized products where the expertise is no longer needed and can also be ordered via online distributors. (26) I think in the electrical material industry, Sonepar will probably divest certain product categories because they naturally go to other marketplaces, especially commodities, and they will stay more in the specialty market. I think for B2B products Sonepar will still be important, except that they will have to be very different from 7-8 years ago. In the commodities world, there is Amazon that distributes everything to everybody, but those are not products that need support. (27)
Fostered Upstream Network Collaboration	
From arm's length relationships to collaborative partnerships	Customers are no longer asking for a product, but for solutions. Manufacturers can push from the perspective of innovation and technology, ideas, but then distributors must explain the benefits. The product will increasingly be a commodity with lots of software, a product as a service. There is a need to understand what the customers want and how to address those needs together. The producer-distributor role needs to be a stringent role, it doesn't work that I give you the product and that's it but by combining our activities together. We need you to increasingly become a multiplier of our activities. (CEO, 7, Source: Sonepar Italia Round Table 1.91, 2022) Our company and Sonepar have established a great relationship of collaboration. This is fundamental for us. Even though there can be that due and obligatory relationship, it's not because then there's that whole spirit of collaboration and exchange of information, always trying to do more which then leads to exceeding expectations. (26)
Shared efforts toward market evolution	Facing this uncertainty, it is worth making an extra effort as a supply chain to better understand what is happening and what will happen in our markets to try to anticipate and be less surprised in the future. If manufacturing, distribution, and installation make this effort alone, it will go a long way, we must try to put our efforts and information together. (CEO, 1, Source: Sonepar Italia Round Table 1.91, 2022) We must create more value rather than volumes by expanding the markets in this sense. This has always been considered something that the supplier has to do, but I think this is not so true anymore, especially because of the size, and the expertise that large distributors like Sonepar have today. Growth through market share is fragile. In my opinion, we need to try to expand markets together, more than in the past. Obviously, manufacturers have to invent new products and systems, but a distributor like Sonepar can do a lot in improving the mix and the value brought to the market. (CEO, 1, Source: Sonepar Italia Round Table 1.91, 2022) On commodities, the risk of lost sales is high for both manufacturers and distributors; if we can come up with innovative systems together, with proper explanations, the work goes on for both. (24)
Segment Extension	
Experiencing a rate of product commoditization	The commoditization process refers to a mechanism in which goods become relatively indistinguishable from the same offerings presented by a competitor, and this is a highly common phenomenon in our industry. Commodities within specific categories are so similar one to another that they are only distinguished by their price (17).

Continuous high-end products introduction: leveraging early competencies to retain a competitive advantage	Certain products, namely pure commodities, will increasingly migrate toward other platforms. Sonepar is probably replacing them by expanding the business (see HVAC, renewable part). The focus on competencies developed in recent years is what enables this mechanism, and it will continue in the future. (20) The feeling we have as suppliers is that Sonepar is a customer to invest in because it has potential. Its competitive advantage is the extreme sensitivity in the early training of employees. We do not frequently notice this; most distributors must be chased for training." (CEO, 6, Source: Sonepar Italia Round Table 1.91, 2022) Marketplace - a threat? Absolutely, especially if distributors are not selling value. They should follow what we did. We don't deal with commodities because there is less value added and less marginality. Probably a low part of our portfolio will become of this type of sales, but our strategy has been to divest this type of business and focus on something else. Sonepar is similarly trying to defend itself. (16) The perception I have is that Sonepar has differentiated itself and is more innovative, proposing new solutions even in areas that may seem obvious but are not. This is a world that is changing, and I think Sonepar captures these benefits. (19)

Figure A1 - 2012-2021 Financial performance at Sonepar Italia S.p.A.



Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sales (Mln €)	461	412	417	490	511	554	606	785	785	1090
% EBIT	-6,7%	-7,4%	-3,1%	0,5%	1,8%	2,7%	4,8%	5,3%	5,1%	8,2%

Figure A2 - 2016-2022 Trend in the Usage of Distribution Channels for Professional Customers

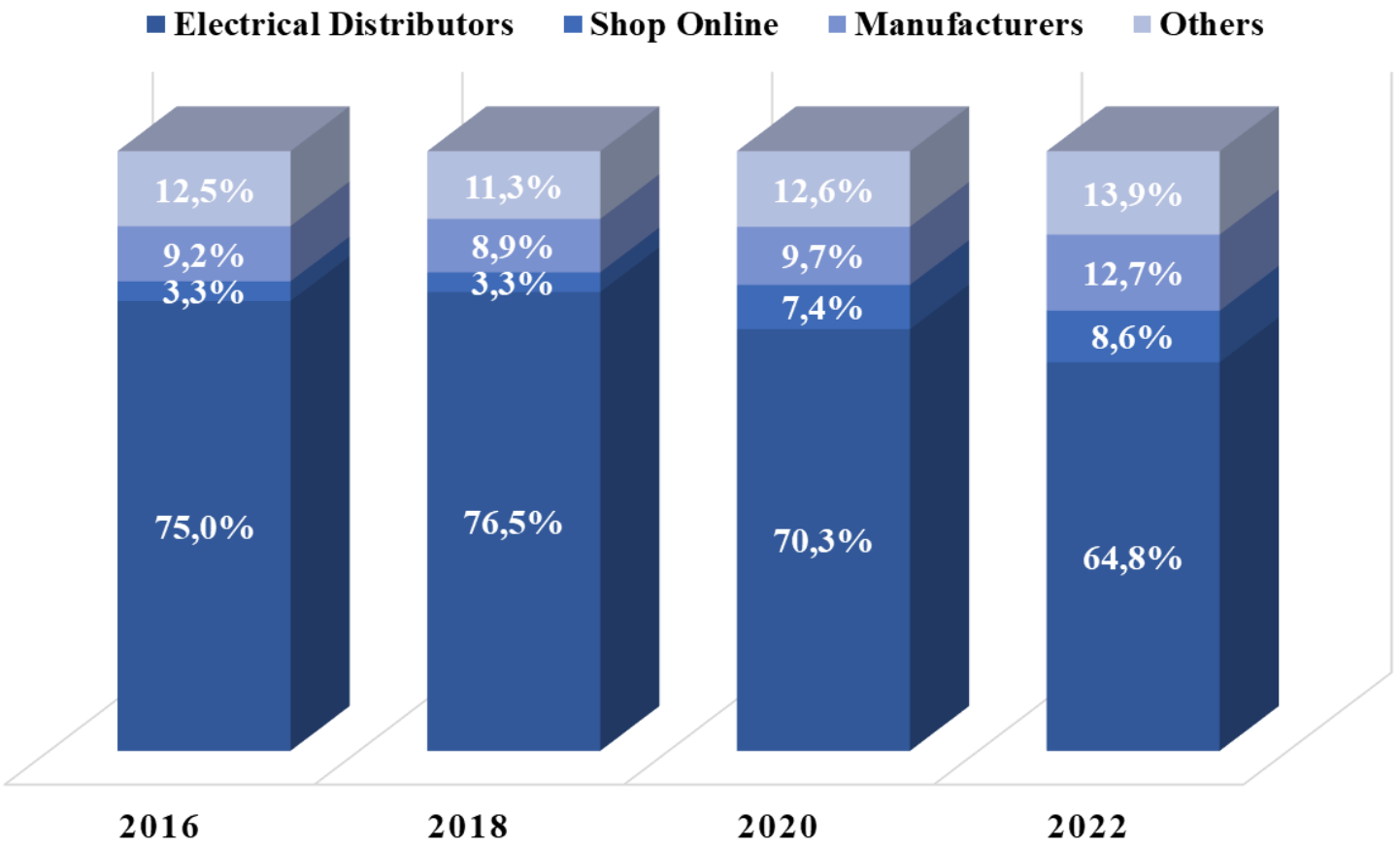


Figure A3 - 2012-2019 Web Sales at Sonepar Italia S.p.A.

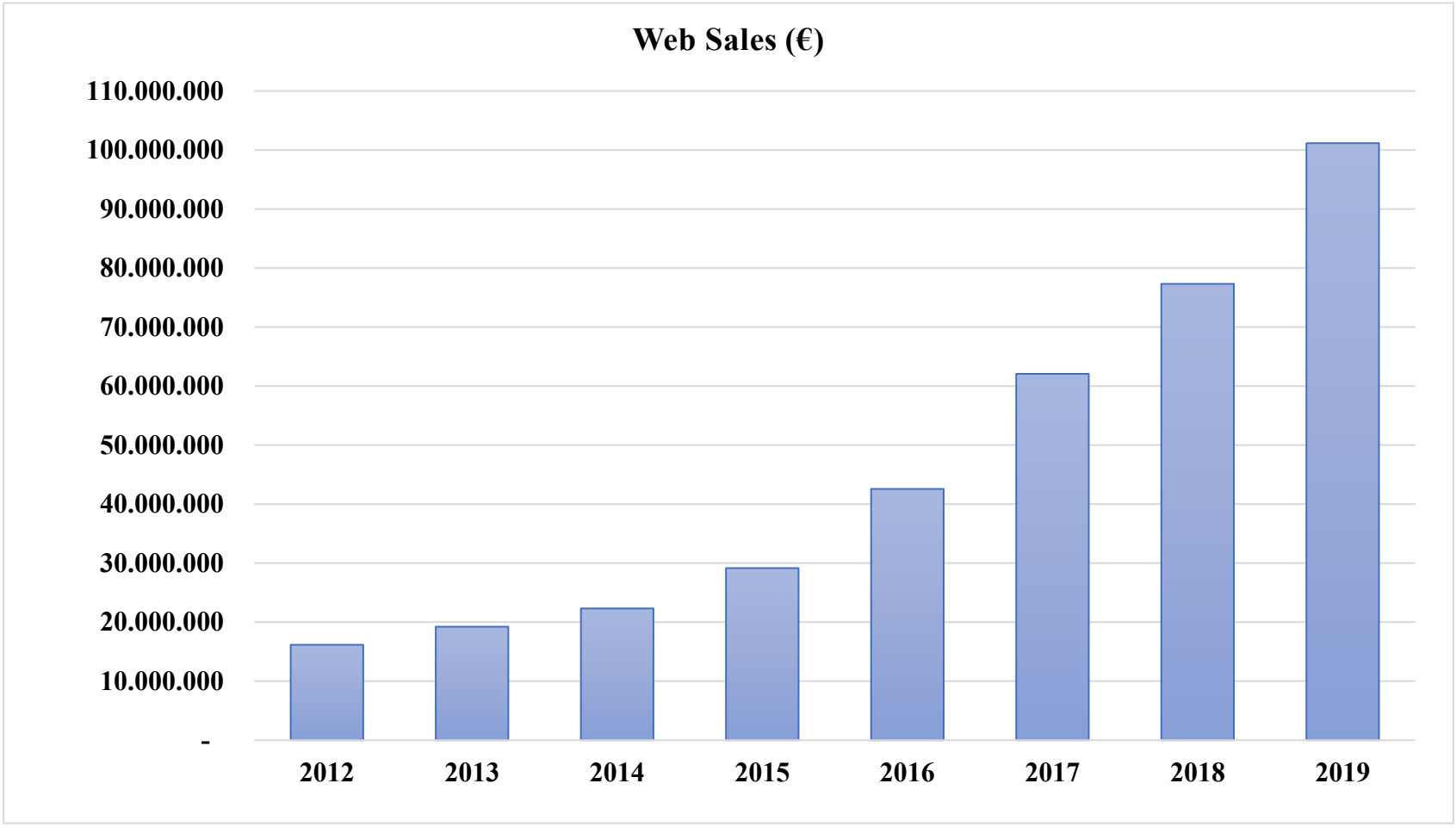


Figure A4 - % Average Order Line Price Specialist Market Vs. Network (for product line and geographical area)

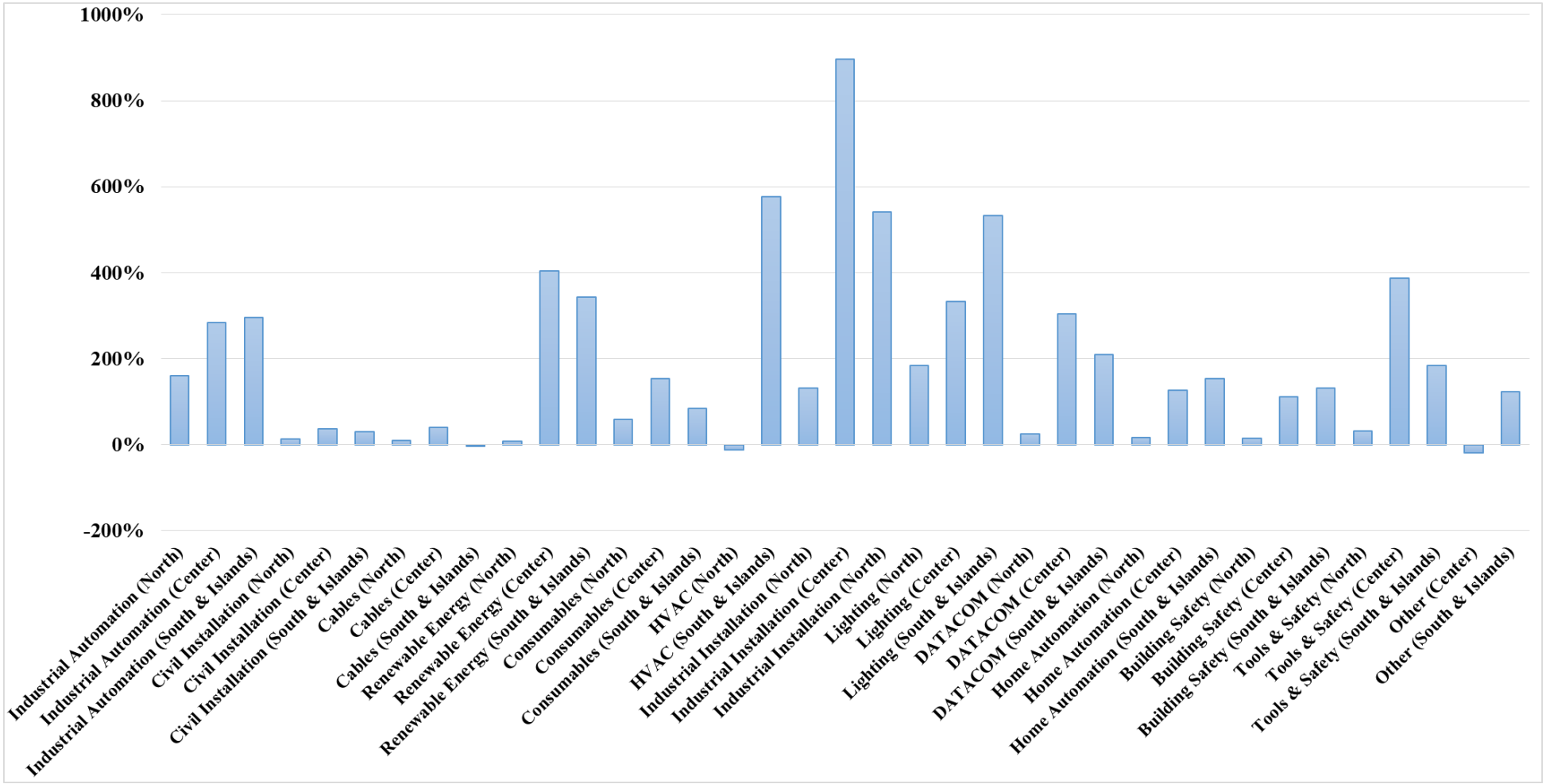
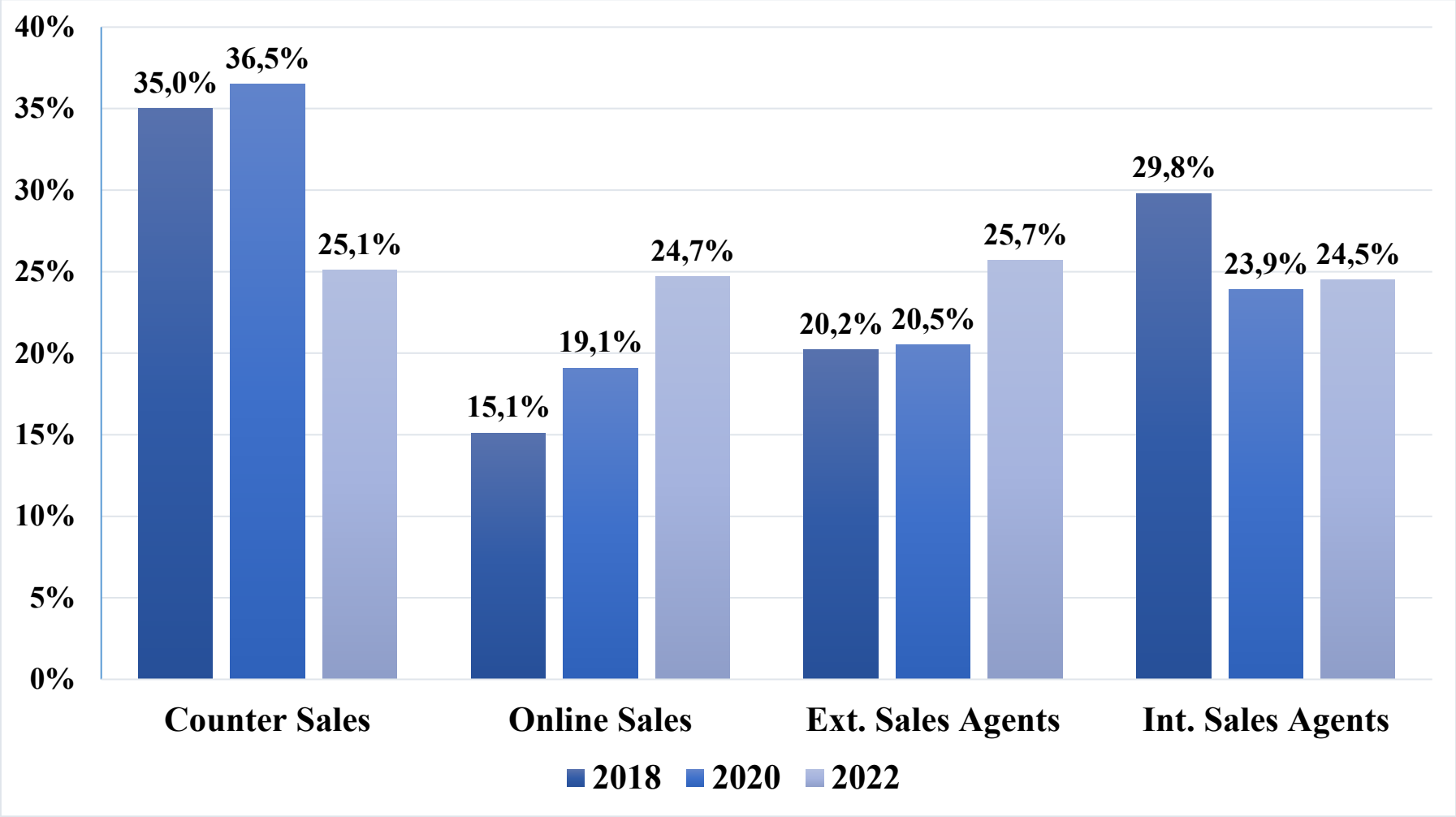


Figure A5 - 2018-2022 Trend in the Customer Usage of the Available Purchasing Channels at Sonepar Italia S.p.A.



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