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Digital entrepreneurs in technology-based spinoffs: an analysis of hybrid value creation in retail public-private partnerships to tackle showrooming

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Abstract

Purpose: Retail networks present new challenges in the B2B collaboration between technology-based spinoffs and traditional businesses. This research explores a public-private partnership that leverages advanced digital technologies via spinoffs to tackle the key challenge of showrooming that retail shops are facing. Showrooming is the phenomenon in which shoppers go to the physical stores to gather in-depth product information, and later on, decide to buy the product from online retail competitors.
Design/methodology/approach: This research draws on a longitudinal qualitative study of a social context in which digital entrepreneurs are embedded. The empirical setting is a retail network in Italy, Germany, and Finland with a particular focus on the process in which a public-private partnership delivers innovation via spinoffs in the context of brick and mortar (B&M) shops. The research design enables an understanding of the complexity of the phenomenon from a business and a social perspective.
Findings: New technology to tackle showrooming enables the creation of substantial hybrid value in retail partnerships. Spinoffs are key actors in leveraging digital technologies to create value faster and more tailored compared with large software companies. Spinoff entrepreneurs leverage on specific technologies (e.g., virtual reality and artificial intelligence) available inside organizations' network (i.e., PPPs). Spinoffs are found to be a fundamental actor in the process of dealing with showrooming because of their time to market. Large software companies usually are not interested in approaching B&M shops due to the high operational costs of product customization for B&M shops.
Practical implications: Managers could use the success factors of the spinoffs in helping their B&M shops to improve both shopper experience and salesperson performance. For managers of B2B retail network, the results are useful towards increasing the involvement of shoppers while they are visiting physical stores, and it also improves salesperson performance. It also leads to the observation that cross-selling is one of the most effective responses to the

phenomenon of showrooming. As practical implications for policymakers, the current research supports the view that PPPs should support the creation of spinoffs as a result of longitudinal innovation projects.
Social implications: Retail technologies leveraged from a public-private partnership and commercialized by spinoffs are powerful tools to enable a better quality of salespeople's life in the working place. At the same time, these new technologies help shop owners increase the retention rates, conversion rates and reduce short-term loss, increasing the likelihood of B&M shops to survive in the condition of extreme competition caused by the showrooming phenomenon.
Originality/value: This research proposes a model of hybrid value creation from networks in digital retail. The model indicates that public-private partnerships create spinoffs to explore showrooming and deliver substantial hybrid value (i.e., business and social) for physical retail shops, mainly because it influences the companies' growth, employee performance, and customer satisfaction. This model expands the field of B2B marketing by identifying factors that enable spinoff creation from retail networks and proposes success factors and research propositions in retail networks.

Keywords: hybrid value creation, digital entrepreneurship, public-private partnership, spinoff creation, customer engagement, showrooming.

Article Classification: M13, M31, O36.

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1 INTRODUCTION

One of the first areas in which digitalization met traditional businesses was the commercialization of books via online shops. In this context, Amazon started a disruption of the book store industry with the introduction of advanced technology, now selling products online that would in the past be sold by large store retailers, thus enabling new business-to-business (B2B) relationships (e.g., Srinivasan, 2008; Ritala et al., 2014; Farah and Ramadan, 2017). This phenomenon led to a dramatic decrease in bookstores and also to a related downturn of publishers losing their established business model (Ammon and Brem, 2014). However, some are still existing, and even new ones are opening up. This indicates that there is still a niche in the market for businesses that combine online and offline trade to satisfy higher customer expectations. This is called omnichannel retailing (e.g., Ailawadi and Farris, 2017 and Lee et al. 2019), where globalization, business model innovation, and especially digital technologies, such as machine learning and artificial intelligence, play a vital role (Brem and Viardot, 2017; Syam and Sharma, 2018).

The landscape of omnichannel retailing compounds physical and online stores and creates new challenges for both academia and management, in particular when it comes to the phenomenon of showrooming. Showrooming is the way shoppers go to the physical stores to gather in-depth product information and buy the product from online retail competitors after that. This research adopts the combined definition of showrooming proposed by Rapp et al. (2015), Gensler et al. (2017), and Mehra et al. (2017), which is: showrooming is a practice whereby consumers visit a brick-and-mortar retail store to evaluate products/ services first-hand, identify their "best-fit" product and use mobile technology while in-store or at home, to compare it with the products of other, i.e., competing, online retailers. Moreover, showrooming can be considered a special kind of service free riding that is ubiquitous in the retail landscape, thus making physical stores fail to capture economic value in the face of online competitors (Jing, 2018). Apparently, showrooming is a big challenge for offline retailers.

The research motivation is the opportunity to explore the spinoff creation processes in the context of the showrooming phenomenon for two reasons. First of all, it draws attention to the issues of brick and mortar (B&M) shops, which require alternative innovation and entrepreneurship processes to be addressed. Secondly, it highlights the salesperson's point of view, which also requires more powerful digital innovation tools that increase the commercialization process's effectiveness.

Understanding innovation in particular sectors – such as B2B retail networks – is an empirical and scientific priority for business and marketing scholars (e.g., Baraldi et al., 2019 and Baddar-Alhussan et al., 2017). An interesting approach is to explore the relationships between the retail network members, which includes the creation of spinoffs in B2B relations with B&M shops. Understanding the significance of new technologies for the retail environment is fundamental for the understanding of new venture creation in the B2B context, which is necessary for creating hybrid value (i.e., in terms of economic returns on investment and social terms by creating a positive impact on changing the lives of people) to cope with showrooming.

Recent studies found that the current models are insufficient regarding the recognition of opportunities for hybrid value creation (Becker et al., 2015), which is because entrepreneurs are mostly focused on delivering economic value. In order to address this challenge, Jack (2010), Lamine et al. (2019), and Baraldi et al. (2019) supported the argument that social context is an asset for entrepreneurial activities, which also enables a network of organizations to support spinoff creation.

Digital entrepreneurs can create products that enable value capture of the social needs of the B2B users (i.e., salesperson) of certain types of technology and customers of B2B solutions (i.e., shop owners) in order to improve the development process of these new types of technology. This view follows the line of reasoning of La Rocca et al. (2016) related to customer involvement in B2B. Furthermore, the entrepreneurial behavior of spinoff leaders helps B&M shops to deal with critical issues of different persons (i.e., shop owners, salespersons, shoppers) that are dissatisfied due to market failure and robust competitive scenarios posed by e-commerce platforms. Ultimately, the fact that e-commerce giants such as Amazon are using powerful digital tools to reach a broad audience, and complete commercial transactions, is crucial for the B&M shop performance.

Research on B2B retail by Shannahan et al. (2015) unveiled that customers' pro-social behavior positively impacts salespeople's performance because their perception, interpretation, and response to the customer can create hybrid value. This can be seen as an opportunity to explore the social context in which entrepreneurs are embedded to further expand the understanding of the social interactions in public-private partnerships (PPP) in a longitudinal timeframe, to close the gap proposed by Leite and Bengtson (2018) and Leminen et al. (2019).

The research objective is to extend the knowledge concerning the business and social side of technology entrepreneurship. The research investigates a retail public-private partnership that leverages advanced digital technologies via spinoffs to tackle the phenomenon of showrooming that brick and mortar shops are facing, in an attempt to fill the research gap proposed by Waluszewski et al. (2019). The current research explores the network relationships that enable spinoff creation inside PPPs, which, to the best of our knowledge, is the very first study to investigate this relationship in the retail network application field. The research is based on a longitudinal empirical observation of the entrepreneurs' interaction with PPP members while also considering the opportunities that lead to spinoff creation. This approach follows the call for a better understanding of relationships and joint innovation activities in PPPs, as proposed by Leminen et al. (2019).

The manuscript explores the technologies that can be applied to mitigate the showrooming phenomenon and to improve B&M employees' job satisfaction and underperformance. It also explores the tech-based spinoffs' role, motivations for their creation, and the process and context of B2B relationships with B&M shops. Thus, our research question for the following study is: How are public-private partnerships creating new processes that empower technology-based ventures to deliver hybrid value? The empirical setting is a PPP operating in Italy, Germany, and Finland. The main research contributions are the key success factors and a model that explores the impact of technology on hybrid value creation processes of B2B networks. Furthermore, we present practical and managerial implications based on the identified success factors.

The remainder of the paper is structured as follows: First, the theoretical foundation is outlined by focusing on literature that is concerned with technology in the context of showrooming, followed by a review of literature on networks and hybrid value creation. Thereafter, the research method is explained in-depth and details that highlight the study's rigorousness and uniqueness. Consequently, the findings are presented in the form of an integrated empirical model composed of success factors and research propositions. Finally, the paper concludes by summarizing both theory and practice contributions, including new avenues for further research.

2 LITERATURE REVIEW

The retail sector is an important global industry that is starting to explore the power of digital innovation. In the same way, physical merchants observe that new technologies such as virtual reality (VR) and artificial intelligence (AI) can change salespeople's behavior. These technologies are mainly provided by disruptive spinoffs that used scalable business and technology strategies to achieve new markets. Recent research argues that spinoffs are faster than established competitors to fulfill market needs (Battisti, 2019).

Recent research in the retail domain proves the need to further understand and clarify the impact of technology on the salesperson's behavior, as Syam and Sharma (2018) argued. Due to the exponential growth of innovative technologies as enablers of collaboration, such as social networks, innovation platforms, and sharing economy, people leave a vast number of digital footprints on the internet, as supported by Bocconcelli et al. (2017).

B&M shops are benefitting from the creation of technology that helps them cope with key business and social issues induced by the phenomenon of showrooming. It is considered a problem for B&M shops due to the increasing number of people buying via e-commerce platforms. On the one hand, it is a pressing issue for shop owners and salespeople because this could make them face decreasing revenues, as well as a consistent loss of clients. On the other hand, showrooming could be an opportunity, as salespeople can be trained to use new digital tools to attract and engage shoppers to buy in-store rather than buying from large e-commerce platforms, such as Amazon.

Digital retail literature points out that showrooming is a contemporary phenomenon and one of the main challenges that the employees of B&M shops face globally. Rapp et al. (2015) found that showrooming has negative effects on the salesperson's performance, as well as their self-efficacy in physical stores. For example, showrooming is often responsible for a reduction in sales created by physical stores, which is likely to create a greater feeling of job insecurity within the salesperson, as discovered in the research of Sharma and Gassenheimer (2009).

Regarding the effects of showrooming on the performance of employees, Rapp et al. (2015) found that there is a negative impact on salesperson performance and the effectiveness of selling goods in-store with the salesperson in direct contact to the customer engaged in showrooming. These kinds of shoppers' main traits include trying out products in stores, checking competitors' prices via online channels of e-commerce giants, and finally leaving the physical shops without making a purchase. This can be considered a substantial inconvenience for the salesperson; in particular, it can be regarded as a critical factor that may cause increased harm to salespeople's employment rates in the retail sector. These aspects are the basis of changing behaviors of salespeople and shoppers during the interaction inside physical shops.

Towards the behavior change of salespeople, B&M shop owners need to be fast in implementing new technologies to increase their competitive advantage. To do so, they need to empower salespeople with specific training in the sales process that enables them to deliver better performance while presenting products in-store, and finally to satisfy the needs of shoppers (e.g., Ahearne et al., 2008, Barocas and Levy, 2016; Ogilvie et al., 2018 and Syam and Sharma, 2018). Another motivation for salespeople to change behavior by using new digital tools is the fact that shoppers are coming to the stores with even higher expectations. Shoppers are looking for in-depth product information, the possibility to try out the products, have a lovely shopping experience, and find very well-prepared salespeople; concerning both technical details about the product and the empathy to understand the shopper need. This new way that shoppers are acting presents a more significant change in behavior than the past without using technology.

Related to the retail industry (e.g., Sorescu et al. 2011), digital information that is publicly available can be leveraged to analyze and predict people's behavior as future customers and create a better understanding of the future potentials of new products, based on people's interests. Information concerning clients' attitudes towards the purchase of products can lead to better product diffusion in a specific community of interest (e.g., accessories for clothing and footwear for sports). Salespeople could be specifically instructed by shop owners to pay more attention to shopper behavior to capture more value and predict future sales. This can also increase the salesperson's performance and thus serve as a basis for giving financial rewards to the salesperson, as supported by Shannahan et al. (2015) and Balboni and Terho (2016). Furthermore, recent research emphasizes that haptic feedback is still very important for customers to understand a product. For instance, design research highlights that haptic input "activates processes that affect human perception of products and ultimately alters behavior and thus substantiates its role in multisensory innovation and product design" (Kampfer et al., 2017, p. 1).

New technologies can make entrepreneurial activities less predictable by shaping both processes and outcomes, as outlined by Battisti (2012) and Nambisan (2017). Furthermore, Pagani and Pardo (2017) argue that technology frames digital transformation in a B2B context, in particular by playing a pivotal role in the interaction among actors in business networks. Similarly, Davidsson (2015) and von Briel et al. (2018) explain that digital technologies play a crucial role as external enablers for the creation of new ventures. Furthermore, von Briel et al. (2018) and Carraro et al. (2020) argue that digital technologies can provide a mediating role between actors of an ecosystem, and Nambisan (2017) explains that digital technologies can have an in-depth effect on the entrepreneurial process. However, digital innovation also comes oftentimes from outside, so it is key to integrate external ideas into the internal ideation process (Apostolov and Coco, 2020).

Spinoffs can be created from PPP to explore showrooming as a business opportunity within the B&M shops market. In particular, PPPs can make the creation of compelling in-store shopper experiences commercialized by fast-paced companies (i.e., digital spinoffs). Showrooming takes place in two steps: First, customers browse competitors' online stores in front of the salesperson after having seen the product they need in real-life, and then they leave the B&M shop and buy the product online. This action is the most important antecedent of motivation for spinoff creation in retail networks.

From an industrial network approach, retail spinoffs need to find new ways for positioning products and services to be competitive. In particular, spinoffs can try to get the minimum viable product (MVP) validation, both from the B2B relationship with the B&M shops (i.e., the salesperson as users of mobile applications) and the final customers (i.e., the buyers that go to B&M stores to try the products), as supported by Laage-Hellman et al. (2018). From this view, and considering the nature of digital entrepreneurship, Nambisan (2017) argues that technology-based ventures deal with less stable and fixed boundaries of their innovation processes than conventional entrepreneurs. Thus, the hybrid value proposition of digital entrepreneurship must enable continuous evolution, which is also depending on the complexity of the required solution that is supposed to comb with business and social needs.

Driving change by leveraging digital technologies' power is a central task of entrepreneurs (Baierl et al., 2019), and even more for social entrepreneurs (Battisti, 2019). This includes the capacity of creating strong hybrid value for the societies, due to the nature of the mechanism of social inclusion that the technology can offer to its users, as supported by Syam and Sharma (2018). In particular, by making use of the sharing economy (e.g., Richter et al. 2017) where people share

their data (i.e., all kinds of information about experiences, desires, and future opportunities) on social networks or innovation platforms (e.g., Winter et al. 2018) to simply have fun, get feedback from peers, save money, sell or buy goods and services, and find new leisure opportunities. This can increase citizens' reputation on the web and empower them to share personal data more willingly and open.

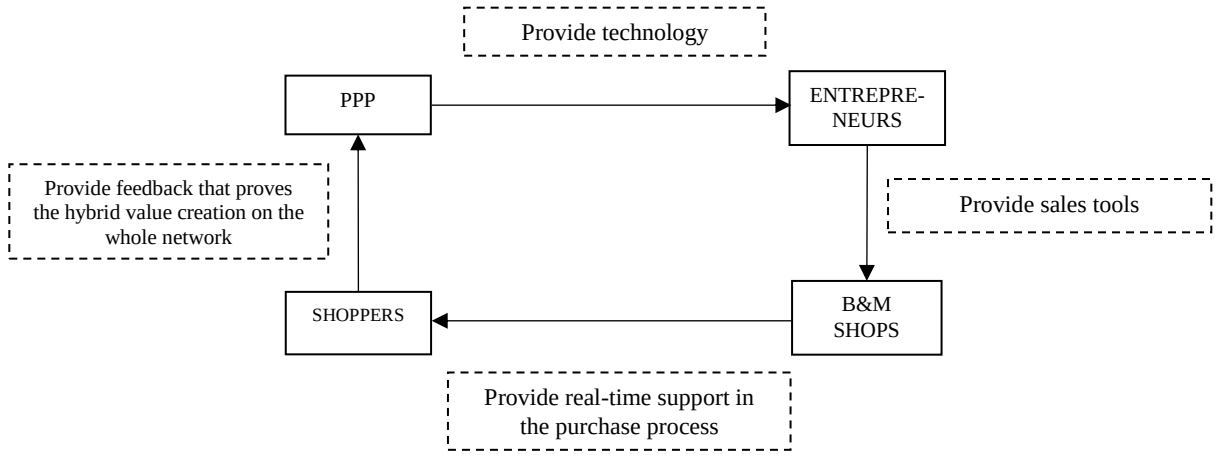
Entrepreneurial opportunities can be shaped and refined by continuously verifying social facts, as well as observing the impact of digital innovation solutions on the everyday work of employees and managers in retail networks. In particular, involving multiple actors is a crucial factor for the development of entrepreneurial networks and the creation of a beneficial environment for spinoffs, as supported by Lamine et al. (2019).

Public-private partnerships are a powerful vehicle to enable the launch of technology-based innovation for hybrid value creation. Hybrid value is created with the final delivery of a product or service that embeds economic perspectives via making profits, as well as social perspectives by creating direct benefits to people (i.e., customers, salespeople, entrepreneurs, and managers) by increasing the quality of life or solving specific problems, as proposed by Battisti (2012). Furthermore, the return on investment expected by the public and private partners of the PPP is directly related to the amount of money they invest in the new product development (e.g., Battisti, 2019).

The hybrid value in a final product to a customer can be created by a social entrepreneur who is educated not solely to consider profits, but rather make a positive social impact as well (Agarwal et al., 2018). Due to the interest in creating sustainable financial models by addressing economic and social returns on investment, their motivation distinguishes from pure business entrepreneurs. By exploring the perspective of hybrid value in PPP, we adopt the definition of PPP proposed by Villani et al. (2017). They explain PPPs to be temporary project-based organizations that involve collaborators from public and private sectors to generate innovative solutions to complex problems.

We adopt the definition of Wilson et al. (2010), who argue that PPP is a way of organizational collaboration across public and private sectors to develop new technologies for the benefit of society. Moreover, PPPs can orchestrate the speed and quality of technology that is transferred to spinoffs, while at the same time, the spinoffs can be the fastest network actor in the implementation of such technology together with the B&M shops. From this point of view, Figure 1 presents the general framework of analysis to understand the PPPs' hybrid value creation.

Figure 1: General setting of the digital retail network with the relationship among the actors.



Towards the empowerment of hybrid value creation, Baraldi et al. (2019) explain the importance of spinoff creation in networks, and the research of Aarikka-Stenroos et al. (2017) and Battisti (2019) complement this line of thinking with the argument that the strong capacity in building hybrid value creation could be based on entrepreneurial activities in PPPs. New technology-based spinoffs are more willing to understand the issues of B&M shop owners compared to larger organizations, and the impact on the salesperson's daily work routine (i.e., fear of being fired because of underperformance, fear of being rejected because of not being able to satisfy shopper expectations), as pointed out by Battisti (2019). Furthermore, spinoffs can be more effective to co-create digital innovation together with the salesperson, which is in line with the research on customer relationship development by Laage-Hellman et al. (2018), especially when the spinoff is mostly focused on finding alternative ways to reduce the impact of showrooming on sales performance.

Social entrepreneurs are key actors in removing roadblocks in the creation of new solutions to social problems, including the commercial and the social sides of entrepreneurship, which classical commercial entrepreneurs would not be able to gain (e.g., Battisti, 2019; McMullen and Bergman, 2017). Furthermore, social entrepreneurship can embrace the social impact dimension, which also includes processes and technologies that enable entrepreneurs to apply their pro-social motivation on the AI-based products and services creation, as suggested by Battisti (2019) and Bucchiarone et al. (2020).

3 METHODOLOGY

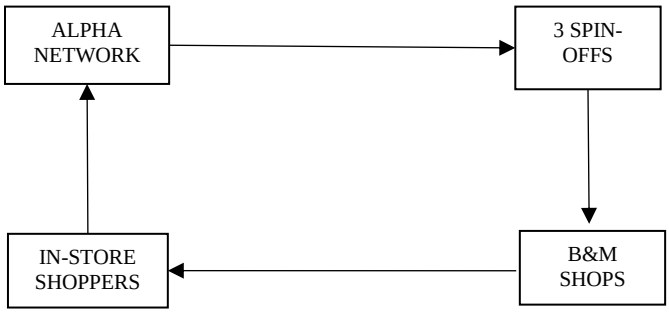
This research adopts a longitudinal qualitative approach based on rigorous multiple case studies (e.g., Yin, 2003) and clinical inquiry methods (e.g., Schein, 2008). The purpose of this combination of methods is to understand better the complex interactions across a network of actors, complex situations that involve cultural issues, and the observation of employees' work in B&M retail shops.

This combined method is shown to be the most appropriate one to understand the entrepreneurial motivations and the process of hybrid value creation that comes with the phenomenon under study. The research design enables an understanding of the complexity of the phenomenon of showrooming and the real impact of addressing business issues of B&M stores (i.e., showrooming from a business perspective), as well as the social impact on the business development of B&M shops that influences customer satisfaction (i.e., the showrooming phenomenon from a social perspective).

The research unity of analysis is the network level (i.e., ALPHA, spinoffs, B&M shops, and shoppers), as presented in Figure 2. Furthermore, the most important partner in the network is ALPHA (i.e., the PPP), which is a temporary network of partners composed of 17 European organizations. This mainly includes large corporations, universities, research institutions, and public institutions, with headquarters based in Italy, Germany, and Finland.

ALPHA was created to design, deploy, and create new products and services to support B&M shops in dealing with showrooming in the cities of Trento, Berlin, and Helsinki. The most important need of these respective B&M shops was to find a way to create digital experiences to reduce showrooming's impact, thus addressing the fundamental business and social issues caused by the negative effects of showrooming on different actors of the retail value chain. Moreover, the B&M shops are currently customers of the large companies in the network or customers of competitors of the large companies in the network.

Figure 2: The simplified retail network managed by ALPHA.



In an attempt towards the commercialization of digital innovation (i.e., sales tools) that can alleviate the effects of the showrooming phenomenon, ALPHA decided to create three spinoffs to interact with the B&M shops, as presented in Table 1.

Table 1: Presentation of the spin-offs.

Spin-offs*	**Headquarters**	**Technology**	**Impact**
Newco1	Helsinki, Finland	Open standards platform based on data science, which enables the interaction with different customer devices.	By providing connectivity to people everywhere, the system enables to play games and create a critical mass of people around a thematic topic of retail key stakeholder interest.
Newco2	Helsinki, Finland	A virtual reality platform that focuses on open experiences using 3D glasses that enables people to see different places without leaving the store, which is supposed to enhance the shopping experience,	It enables the creation of profiles of clothing to be tried by people in a physical store, without the need to move to remote fantastic places of touristic vacation. It increases the shopping experience and results in higher in-store sales, which occur even before the physical travelling experience.
Newco3	Trento, Italy	A platform of in-store analytics and customer engagement solution by sending targeted messages to customers, which make it possible to track their behavior inside shops.	By understanding how people move inside stores, sales assistants can better support people to buy the right product via real-time engagement with the shopper. It is useful to help shoppers to get tailored discounts in cross-selling actions.

**The names are hidden for confidentiality reasons.*

The digital innovations created by the three spinoffs aiming to provide a seamless shopping experience, while considering customer needs, are presented below:

"Newco1" designed omnichannel solutions to be used in malls (e.g., Helsinki Kampi central station). It includes a comprehensive set of technologies that enable consumers to have powerful experiences, which can be tested only in physical places. It is an important competitive advantage for B&M shops located inside malls because e-commerce giants' business strategy is focused on high volumes of sales and automatic profiling based on data available on social networks. The technology was used for the interaction of shoppers with large screens. It enables creating a smart lighting effect that changes people's behavior (such as mood or attitude towards purchase). It allows direct interaction of the mobile phone of shoppers with the large screen application, allowing the customer to control a single and unique experience, thanks to the use of specific sensors positioned everywhere around the physical store.

"Newco2" established a partnership with a large telecommunications company to explore the opportunity of a digital marketing application that provides advertising targeted to the end

consumers to convince them to visit the physical store rather than buying online. Virtual reality (VR) experiences facilitate the process of buying clothes and shoes that are needed for special occasions, events, vacation, or even remote places on the globe. This means that the shoppers go to the store, put on the VR glasses, and start the process of choosing the clothes they need by clicking and browsing the features of the products and buying in real-time. After the VR experience, they can just collect their package and go home. As an alternative to the click and collect process, shoppers can request their goods to be delivered to their homes for additional convenience, in case they have other appointments or want to purchase more items in another B&M shop without having to carry their purchases with them.

"Newco3" established a partnership with large companies to integrate software solutions in the big players' product portfolio strategies to scale-up cloud computing solutions with the objective of profiling customers. This technology enables B&M shop owners to increase their business value by increasing the real-time social value of shoppers. The technology notifies shop owners when, for example, their customers become more passive, and the shop owners can take actions that change the attitude of shoppers, via push notifications offering special discounts. This information makes it possible for shop owners to adjust their behavior radically (creating new sales strategies, such as promotions or cross-selling) based on shoppers' real-time preferences. The technology enables "virtual robots as salespeople" that can interact online with consumers by using technology based on artificial intelligence for real-time interactions between machines and humans.

ALPHA was selected for the possibility to collect a considerable amount of valuable real-life data, which was obtained from the interactions of the actors involved at the network levels. Another reason was that ALPHA is a specific organization form (i.e., PPPs) that enables the creation of innovative solutions that are capable of covering specific social needs (i.e., salesperson) and also increase sales, the retention rate of buyers, as well as attract new ones to the B&M shops. Another key reason for the selection of ALPHA was the fact that they successfully launched three spinoffs that collaborated actively across a network of partners, including the strong B2B relationship created by B&M shop owners.

The data collection period was from January 2015 until December 2017. The data was collected during the entire existence of the PPP (i.e., from the launch phase until the closing of the activities), with one of the researchers' participation as a member of the PPP. The researcher was involved with all the key actors (i.e., PPP employees, spinoff managers, B&M shop owners, B&M salespersons, shoppers). In particular, the researcher joined the three co-working spaces based in Trento, Helsinki, and Berlin that were formed by an interdisciplinary team (computer scientists, engineers, sociologists, and businesspeople) of 55 full-time co-workers. It included one director of innovation for every organization, one innovation manager responsible for every co-location working space, and one head of software development that was responsible for every one of the three lines of product developed by ALPHA. These were the key people that the researchers interacted with daily over the period of three years for the formal and informal interviews, data collection from direct observations, and secondary data. The researcher had daily contact with the key manager of the 17 partners and the entrepreneurs of the three spinoffs (i.e., CEOs and CTOs), which enabled the understanding of the motivation of entrepreneurs to focus on the problem of showrooming.

The researchers' direct involvement was fundamental for the understanding of the showrooming phenomenon and the network relationship in detail. This led to large amounts of data gathered through direct observations of real-life dynamics. Moreover, the data collected was

based on daily interactions among the actors during three years at a non-stop base, over the whole network presented in Figure 2, which includes customers of the B&M shops, as well as the enormous amount of data collected from all three spinoffs that arose from technology pilot experimentations at the B&M shops premises. Furthermore, the three CEOs and three CTOs of the spinoffs provided direct information and secondary data to the researcher during the total duration of ALPHA on a weekly basis. Moreover, the total involved people from ALPHA and spinoffs in the whole three years projects was more than 60, and the people from the final customers (B&M shops) is approximately 40 people, which is one person at least from every B&M shop, as the PPP had more than 40 customers that acquired the product and service innovation solutions. The researcher's observatory participation in the meeting of ALPHA and the clinical interaction of the researcher with ALPHA managers were a key source of the collected data. The researcher observed the process of network formation, technology discovery, technology licensing, spinoff creation, fundraising to deploy the MVP pilot, technology transfer to the ventures, and the development of the innovation until the market launch. The clinical interaction includes the consultation process between managers and the researcher, in which the researcher acted as a supporter for the managers in understanding the problem, designing solutions, implementing the solutions in real environments, and evaluating the results of the solution in terms of business and social impact. Moreover, the researcher actively contributed to the pilot experimentations between the spinoffs and the B&M shops.

Secondary documentation, like monthly and annual reports, meeting notes, technical artifacts, and social-technical workflows were fundamental for the data triangulation. The secondary documentation was especially useful for validating and improving the accuracy of the information collected from observatory participation and daily discussions with the ALPHA team members.

4 FINDINGS

Showrooming causes considerable pain to salespeople, which can lead to underperformance, demotivation, and, in some cases, even the reduction of their monthly salary or annual bonus (i.e., because salespeople get a part of their salary based on commissions related to the amount of revenue they achieve). Showrooming is a social issue the retail sector is currently facing worldwide, and it is increasing due to the exponential growth of new technologies.

Substantial dissatisfaction of shoppers was observed when coming to stores because they often could not find the right product, and if they found it, it was more expensive than if buying it online in many cases. This causes a powerful business drive for B&M shops and an exciting business opportunity for fast-paced technology-based spinoffs at the same time.

4.1. Digital innovation and spinoff launch for hybrid value creation

Digital innovations are crucial to help shop owners to increase salesperson performance, improve well-being at the workplace, as well as help the shoppers not to lose time when they buy items in-store, but rather to ensure them that when they go to the store, they will undoubtedly find the product they are looking for. B&M shops used innovative tools developed by ALPHA spinoffs to ultimately reduce the negative impact of showrooming on the business and society.

Overall, the three spinoffs' products gave B&M shop owners the chance to be more aware of shoppers' purchase decisions while providing tailored experiences to their customers. In particular, these experiences enabled:

- *Behavior understanding:* analyze past and predict future purchasing patterns
- *Tailored messages:* delivering in-store content via smartphones and large screens
- *Buy while visiting:* emotionally influence the customer to buy in-store rather than online
- *Shopper experience:* enrich the customer journey to increase sales with cross-selling
- *Conversion rates:* increasing loyalty based on strong shopper experience
- *Empowered interaction:* better in-store communication between salesperson and shopper

These digital innovations presented above are focused on providing advanced metrics that reflect and positively impact both customer journey and shopping experience. These metrics were very relevant to provide insights into how and why customers make decisions about which product to purchase while they are in-store. These metrics were generated from customer data using mobile devices, cameras, browsing the internet, and social media.

B&M shop owners realize more and more that they need digital innovations that enable them to gain new insights from past purchases of shoppers as well as new behavioral metrics of customers' intentions to buy, to support the decisions of increasing or reducing prices, creating discount campaigns, and hiring new sales experts for creating customer journeys inside stores. This can create a more enjoyable shopping experience so that customers buy the products they need promptly and have an incentive to recommend them to friends. Maybe they also invite friends to buy in-store with discounts that they would not get unless they have someone with them who is already a customer of the respective store. This can be considered an up-selling proposition of the B&M shop owner that creates a considerable value to the new shopper, the new shopper's referral, and the salesperson. This can double the revenue of the B&M shops in some cases.

It was observed that the three spinoffs could be considered disruptive from a technological point of view. It means these high tech-based start-ups were created to grow very fast and achieve global market penetration compared with competitors because of the creation of new cloud-based services. It enables the B&M shops to use modern solutions in the retail market considering the current technology most of them are currently using) need a large amount of personal data from shoppers, and they need the right consumer data to gain business and social insights. Furthermore, these insights can transform retailers' marketing campaigns, inform about pricing activities, strengthen brand loyalty, and generally increase in-store sales by helping the salesperson work better than before, even without the sales tools as technological support. This can be considered a pivotal cultural change because retailers are committing to ground their business decisions on this data. The antecedents of spinoff creation were observed with regard to B2B dynamics, the role of the spinoffs, and the hybrid impact, as presented in Table 2.

B&M shop owners are convinced that digital innovations based on consumers' data could enable them to make better decisions about new product launch and assortment and refinement of products and services. Towards deriving both hybrid business and social values, it is fundamental to map the accurate data to the right sales process at the right moment of the potential purchase.

Digital innovations can deliver real-time discount coupons to the shoppers that expire when the shopper exits the store. It also increases the cross-selling of other products that the shopper had no previous intention to buy before entering the shop. In particular, discounts on related product areas are a successful strategy to increase in-store sales and avoid the shoppers' showrooming behavior because these options are not available when buying online via e-commerce platforms.

Table 2: Antecedents and dynamics of spin-off launch for hybrid value creation.

Antecedents	B2B dynamics	Spin-off role	Hybrid impact
Shoppers are buying via e-commerce like never before	PPP can help to be fast to launch retail spin-offs that can interact with B&M shop owners and salespersons	Spin-offs are faster than other types of organization to deliver new digital technologies such as cloud computing, profiling and online recommendations to B&M shops. Spin-offs help salespersons to understand shopper behavior, which is mandatory to win in a very competitive retail landscape. Spin-offs deliver new sales tools to salespersons, which enables the shopper to save time and money.	Global e-commerce platforms are a direct consequence of the increase of unemployment in B&M shops, which are usually small stores in a local territory dimension. Being connected to a network of retail shops that are using the technology delivered by spin-offs, reduces the negative impact of showrooming, because people can be re-arranged to work at other locations in case of a reduction of store performance in terms of sales growth.
Shoppers have higher expectations than ever before	PPP provide the retail spin-off technology that enables the creation of better loyalty card programs enabling B&M shops to profile, recommend and provide the right "discount coupon" to the customer (i.e. right percentage for the right people, in the right place and the right moment).	Digital innovations developed by the spin-offs increase the appeal of local physical business and improve the current shopper experience. Spin-offs can include a digital check-in into the digital innovation that every time a shopper plays a game inside a physical store, they can learn more about the products and win extra discounts.	Shoppers are buying online from e-commerce Giants because they are more convenient in terms of pricing, speed and time of delivery of products. Employees of B&M shops are afraid of losing jobs because they are not capable of satisfying shopper expectations.
Shoppers have on-hand access to the technology like never before	PPP, together with retail spin-offs, provide the technology for shoppers to be aware of promotions of B&M shops in real-time. It enables shoppers to have digital loyalty cards (i.e. mobile application on their smartphones).	Spin-offs are helping B&M shops to know how to explore omnichannel retailing to get in contact with shoppers for real-time promotions and new experiences.	The negative impact of showrooming on employee performance and shop owner return on investment is enormous because of the exponential market growth of virtual “hubs” where shoppers can purchase online (i.e. Amazon, Alibaba), comparing real-time features and prices of the products.

The social process embedded in digital innovation is a crucial driver of product development in the three cases, where a network of partners can improve the solution. The key entrepreneurs (i.e., CEOs and CTOs) in every spinoff have the same crucial motivation, which helps B&M shops to compete with e-commerce giants by solving the showrooming issue, and by using the social process and digital innovations for the engagement among shop owners, salespersons, and shoppers.

4.2. The success factors of public-private partnerships

This research found three success factors that lead to the development of four research propositions, as presented as follows. At the network level, PPPs have a strong capacity for creating hybrid value for the business and social actors. It was observed that for dealing with showrooming of B&M shops, PPPs needed to create narrowed and domain-specific focused organizations (i.e., digital spinoffs), in order to tackle the issue of showrooming by focusing on the development of digital innovations for specific purposes. This mainly includes the products created to enhance the shopper experience in-store, thus attracting shoppers to come to the store and buy in the first or second visit.

- *Success factor 1 (SF1): Because of PPPs creating spinoffs to sell digital innovation tools to B&M shops, this action increases the likelihood of achieving business and social impact.*

- *Research proposition 1 (RP1): Networks that enable new technology-based venture creation can allow the creation of hybrid value in B2B relationships.*

Second, at the spinoff level, entrepreneurs and salespeople's direct contact enables a strong social focus of the technology for changing the way B&M shop owners are doing business. At the same time, this can positively impact the attitude of the salesperson towards the shoppers. It increases in-store sales, which leads to a positive business and social impact.

B&M shop owners acquired the digital innovations from the retail spinoffs, and ALPHA achieved the expected results in terms of B2B relationships. In this way, digital innovations were successfully commercialized in Finland, Germany, and Italy. This helped B&M shops increase the salesperson performance and the conversion rates of new customer visits to the stores. This selling strategy even enticed friends or relatives of the original shoppers to buy more frequently from those B&M shops that had digital innovations, compared to periods before the implementation.

- *Success factor 2 (SF2): Because of the technology-based spinoffs engaging shop managers, shop owners, and salespeople in the digital innovation design, this process enables the joint development and impact measurement of the innovation*

- *Research proposition 2 (RP2): Spinoffs that interact with all actors in contact with the customers (i.e., shop owners, managers, and employees) can enable the creation of hybrid value in B2B relationships.*

Third, the technology used by ALPHA is based on artificial intelligence and data analytics models that take social media profile pictures as an input – a crucial source of social media information that is publicly available. This technology predicts personality traits from profile pictures (extroversion, neuroticism, agreeableness, conscientiousness, openness). Furthermore, the technology can be used to predict a person’s personality from the posts that they share on social media networks. These digital innovations can help sales assistants to choose the best promotion, to better interact with their customers, increase sales performance, and reduce stress at the workplace. It is useful to support retail shops in serving a wide variety of consumers with different needs, desires, and preferences, which are revealed by the shopper data from social media, loyalty card data, and customers' in-store behavior.

B&M shop owners who want to deal with showrooming and increase their sales and employee performance must focus on new customer experiences, instead of trying to reduce their costs by not investing in the training of sales techniques. Of course, competitive prices and better sales pitches can increase the number of shoppers who buy in-store, but the significant impact on return on investment originates from a differentiation strategy of investing in digital innovation that can create compelling shopper experiences. Furthermore, from an end customer’s point of view, the essential sales tools that enable hybrid value delivery can be summarized as follows:

- Interaction of shoppers with the large in-store touch screens: more information gathered by the shopper to make the decision via the use of screen interaction.

- Gamification: Possibility of obtaining a real-time and unique reward, e.g., discounts based on the actions that customers take or points they get and the collaborations they have with other shoppers.
- Virtual reality: Possibility of purchasing the most appropriate product for a future experience in-store and for example, buying heavy winter clothes for a strong extreme cold experience in Lapland, Finland.

Shoppers buy in-store because they receive support from the salesperson with their purchase, which is, in turn, a significant benefit to the B&M shop owner. The spinoff role of creating robust digital innovation that enables shoppers to have unique experiences is fundamental to increase the positive impression of the in-store sales process. It was observed that e-commerce platforms could not replace unique physical shopper experiences; this makes it evident that the haptic touch and feel of products is still fundamental for the B&M sales processes.

- *Success factor 3 (SF3): Because technology-based spinoffs are the most suitable organizational form to create digital innovations that enable the involvement of customers in B&M shops, this fact allows for better interaction of shoppers with touch screens, with the participation in gamification techniques, and virtual reality experiences.*

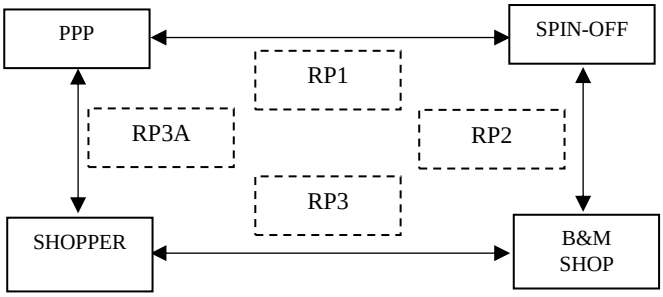
- *Research proposition 3 (RP3): Digital technologies are powerful tools for enabling a better in-store salesperson performance that creates hybrid value in B2B relationships.*

- *Research proposition 3A (RP3A): Digital technologies are powerful tools for enabling new, in-store shopper experiences that create hybrid value in the overall retail network.*

4.3. The model of hybrid value creation in public-private partnerships

Overall, our research extends the base of knowledge on public-private partnerships that created spinoffs for hybrid value generation in digital retail networks' empirical context. For this, we summarize our results in a new model, which is presented in Figure 3.

Figure 3: The model of hybrid value creation in digital retail public-private partnerships.



5 DISCUSSION AND IMPLICATIONS

The main research contribution is an empirical model of network dynamics that explores the impact of technology on the value creation process of the retail B2B networks, in line with the research of Pagani and Pardo (2017), and Waluszewski et al. (2019). Our research deepens the

understanding of the process of creating hybrid value in public-private partnerships from the phenomenon of showrooming in B&M stores. The research identifies antecedents and develops a model for spinoff creation from PPPs, extending the study of Lamine et al. (2019), Leite and Bengtson (2018), and Leminen et al. (2019).

The role of entrepreneurs of new ventures as a key person in the creation of hybrid value (i.e., business and social impact) is highlighted by the fact that spinoff entrepreneurs leveraged on specific technologies (e.g., virtual reality and artificial intelligence) available inside the network of organizations (i.e., PPPs). From this perspective, our research responds to the call for a deeper understanding and clarification of technology's effects on collaboration between customers and spinoffs by Laage-Hellman et al. (2018).

By describing the digital retail partnerships' structure and way of working, this research contributes to the network dynamics in different settings, such as the PPP, following the call for research by Aarikka-Stenroos et al. (2017), as well as it expands the understanding of the relationships between entrepreneurial decision-making in the context of technology for B2B sales. Furthermore, the findings extend the research of Rapp et al. (2015) by adding that spinoff companies are agile in delivering innovations that increase the salespeople's job security because they can develop a feeling of control over the sales process as a whole.

The research brings a novel study of the impact of technology on the retail entrepreneurial process, social norms, as well as the sharing of experience among entrepreneurs, as pointed out as a gap by Syam and Sharma (2018). In particular, we pointed out that the hybrid value created by innovations over PPP can be able to meet business and social needs, which is an important source of competitive advantage (Agarwal et al., 2018). In this way, PPP can enable the creation of integrated and unique assets (i.e., both from public and private organizations), which are the solid ground for new, technology-based ventures to develop new markets via B2B channels.

The research further found spinoff entrepreneurs who are organized in networks create hybrid value (i.e., business and social) by adopting the following key activities:

- The spinoffs have an inherent hybrid mindset because they resulted from digital social technologies created out of a PPP. This study confirms that PPP is the right environment for this type of action because the entrepreneurs keep business and social needs in mind useful to increase the positive impact, and ultimately help develop their local territory (e.g., Battisti, 2019).
- The focus lies on issues in a business-to-business setting, which allows other companies (in our case, B&M retail owners) to fend-off competitors in order to avoid facing the real possibility of closing down because of a sudden and substantial reduction of revenues.
- Bearing in mind that spinoff help of B&M shop employees is a central success factor because salespeople are the ones who suffer the most from losing their jobs, reduction of productivity, reduction of salary (especially because some salespeople get high commissions as a part of their monthly or annual pay), and finally because they get frustrated once shoppers come to the B&M shops, get information and support from the salesperson, and later buy online from other competitors with lower prices.

The research confirms showrooming causes a negative effect on salesperson performance, and we describe the importance of technology (i.e., digital innovation) developed by nascent companies (spinoffs) in enabling B&M shops to alleviate business and social issues. Our research shows that spinoff entrepreneurs play a central role in understanding B&M shops' needs, as well as salesperson's and customers' needs. In the end, digital innovation helps to increase employee performance by tracking the behavior of the customer, which makes it possible to partly predict

their behavior, and finally, the sales tool that was able to analyze real-time data by using artificial intelligence technologies.

It was observed that shopper frustration causes employee underperformance and job instability, thus a reduction of shoppers buying in physical stores, which then leads to a reduction of short-term profit, and return-on-investment. Overall, we confirmed it is a critical issue for B&M entrepreneurs. We observed at the begging of ALPHA formation they were not able to seize this business opportunity in their current organizational form as a PPP without tech-based spinoffs. This is the case because the PPP was rather focused on selling digital tools and associated new experiences with large retail chains, supermarkets, banks, and big fashion brands. We observed the primary motivation for spinoff creation was the fact that they are faster in creating new disruptive sales tools for B&M shops than large corporations. On the other hand, large corporations have easier access to large chains, famous fashion brands, and supermarkets for the commercialization of their digital innovation due to their increased influence.

From this point of view, PPP managers enabled the researcher to observe that spinoffs created from PPP are naturally equipped with the social value of innovation because the public partners are more trustworthy in providing the social value through establishing direct contact with citizens' needs, while private companies are more focused on treating people as customers. PPPs are a powerful organizational form enabling the generation of hybrid value and supporting the launch of spinoffs that aim for both business and social goals.

The study observed the spinoff's actions to solve showrooming and thus help B&M shops organize their business and find a place in the competitive retail landscape where they could win against e-commerce giants. There was no central actor in ALPHA that facilitates the launch of the three spinoffs. All of them created digital innovations by solving the showrooming problem with the support of a community of ALPHA key actors, such as computer scientists, social researchers, team leaders, managers, advanced internal users, and entrepreneurs.

Salesperson's expertise remains a competitive advantage for the B&M shops against e-commerce competitors because consumers still prefer to go to physical stores to experience a level of service that they could never have through online channels, which is also supported by the research of Rapp et al. (2015). Moreover, we addressed the gap provided by Mehra et al. (2017), who argue that only a few researchers explore showrooming from a business and innovation point of view, in which they study the strategy of B&M shops to counter showrooming by adopting price matching and product assortment as a business strategy.

Regarding managerial implications, the research findings are valuable to deepen the understanding of retail network dynamics with a PPP as a central actor. In particular, the managers could use the success factors to help their B&M shops improve both shopper experience and salesperson performance and eventually focus on defeating the showrooming phenomenon.

As implications for managers of the B2B retail network, the results are useful towards increasing the involvement of shoppers while they are visiting physical stores, and it also improves salesperson performance. It also leads to the observation that cross-selling is one of the most effective responses to the phenomenon of showrooming. To achieve this, B&M shop owners need to equip their salespeople with new digital technologies that enable impressive experiences for the customers, which will eventually make them achieve cross-selling.

Further, spinoffs are a fundamental actor in dealing with showrooming because they are the fastest organizational form (and prices are more reasonable due to the highly scalable cloud-based applications) to adapt to the changing environments B&M shops operate. On the other hand, corporations usually are not interested in approaching B&M shops because the operational costs

of these corporations are too high to justify the commercialization of products to diversified B&M shops. It creates huge business opportunities for spinoff launches and growth by developing new selling strategies with B&M shops.

As practical implications for policymakers, this research supports the view that PPPs should support the creation of spinoffs as a result of longitudinal innovation projects. The launch of new European PPPs to deliver spinoffs with the primary purpose of impact creation could enable a hybrid value mindset to help companies succeed with new challenges in the B2B landscape.

In the introduction of this article, we mention the case of Amazon disrupting the book market. Looking at Amazon these days reveals that they also went into many other digital markets with great success, like cloud services – currently a leading ecosystem in media and web services, as supported by the research of Ritala et al. (2014). Also, Amazon even opens stores in cities, but always with a high focus on combining it with state-of-the-art technologies (Guardian, 2017). The company even opened new bookstores in 2018 (Latimes, 2018). Hence, haptic product experience seems to still have a key role in purchase decisions, as indicated by earlier research (Kampfer et al., 2017).

6 LIMITATIONS AND FUTURE RESEARCH

It was our aim to analyze a meaningful PPP network with an international orientation to gain reliable insights. Notwithstanding, our research's main limitation was the analysis of only one of such retail networks, and we believe that more longitudinal studies are needed to compare network dynamics. Furthermore, an examination of different cultural contexts of retail partnerships in Asia that are very strong in both B&M shops and e-commerce can create an interesting theoretical contribution. This is a key aspect since B&M shops have different characteristics already in Europe, but also beyond that as well in other markets like Asia or the Americas.

Extending the current research unity of analysis from the relationship between spinoffs and B&M shops to the relationships between the spinoffs and large retailers or supermarkets chains, new research could explore different new perspectives of dealing with the showrooming phenomenon. Furthermore, exploring the role of "coopetition networks" that aim to support third-party resellers of spinoff technologies could increase the understanding of hybrid value creation, like following Amazon’s strategy of collaborating with large multi-national competitors, an approach that was also pointed out by the research of Ritala et al. (2014).

Another exciting avenue for further research is related to understanding motivations for retail corporation managers to launch digital spinoffs for hybrid value creation. The consideration of the nature of corporations that launch spinoffs for hybrid value is a research challenge. For example, a research question could be: Does a network with more partners from the private sector (i.e., an unbalanced number of organizations from the private side, compared to the number of public authorities in the partnership) influence the performance of the whole network for the effective achievement of hybrid value? This seems to be an interesting question that could be tested with a large group of digital spinoffs launched from different types of complex networks. Finally, another possibility for further research is to verify whether spinoffs are necessary to achieve the hybrid value creation when PPPs have a minor number of partners and analyze if this new slim organization form could speed-up the market launch at the global level.

REFERENCES

Aarikka-Stenroos, L., Jaakkola, E., Harrison, D., and Mäkitalo-Keinonen, T. (2017). How to manage innovation processes in extensive networks: A longitudinal study. *Industrial Marketing Management*, 67, 88-105.

Agarwal, N., Chakrabarti, R., Brem, A., and Bocken, N. (2018). Market driving at Bottom of the Pyramid (BoP): An analysis of social enterprises from the healthcare sector. *Journal of Business Research*, 86, 234-244.

Ahearne, M., Jones, E., Rapp, A., and Mathieu, J. (2008). High touch through high tech: The impact of salesperson technology usage on sales performance via mediating mechanisms. *Management Science*, 54(4), 671-685.

Ailawadi, K. L., and Farris, P. W. (2017). Managing multi-and omni-channel distribution: metrics and research directions. *Journal of retailing*, 93(1), 120-135.

Ammon, T., and Brem, A. (2014). Von Gutenberg zu Steve Jobs, Herausforderungen und Lösungen der Business Model Innovation dargestellt am Beispiel von (Fach-) Verlagen. In Kompendium Geschäftsmodell-Innovation (pp. 319-347). Springer Gabler, Wiesbaden.

Apostolov, M., and Coco, N. (2020). Digitalization based innovation-A Case Study Framework. *International Journal of Innovation and Technology Management*. In press, https://doi.org/10.1142/S021987702050025X.

Baddar-Alhussan, F., Fletcher-Chen, C. C.Y., Batt, P.J. (2017). Editorial: Networks: relationships and innovation. *Journal of Business & Industrial Marketing*, 32(6), 773-775.

Baierl, R., Behrens, J., and Brem, A. (2019). *Digital Entrepreneurship. Interfaces Between Digital Technologies and Entrepreneurship.* Springer. pp. 212. *https://doi.org/10.1007/978-3-030-20138-8.*

Balboni, B., and Terho, H. (2016). Outward-looking and future-oriented customer value potential management: The sales force value appropriation role. *Industrial Marketing Management*, Vol.53, pp.181-193.

Baraldi, E., Havenvid, M. I., Linné, Å., and Öberg, C. (2019). Start-ups and networks: Interactive perspectives and a research agenda. *Industrial Marketing Management*, Vol. 80, pp.58-67. https://doi.org/10.1016/j.indmarman.2018.02.002.

Barocas, S. and Levy, K. (2016). What Customer Data Collection Could Mean for Workers. *Harvard Business Review*. pp.1-4.

Battisti, S. (2012). Social innovation: the process development of knowledge-intensive companies. *International Journal of Services Technology and Management*, 18(3-4), 224-244.

Battisti, S. (2019). Digital social entrepreneurs as bridges in public–private partnerships. *Journal of Social Entrepreneurship*, Vol.10, Issue 2, pp. 135-158.

Becker, A., Knyphausen–Aufseß, D. Z., and Brem, A. (2015). Beyond traditional developmental models: a fresh perspective on entrepreneurial new venture creation. *International Journal of Entrepreneurial Venturing*, 7(2), 152-172.

Bocconcelli, R., Cioppi, M. and Pagano, A. (2017). Social media as a resource in SMEs' sales process, *Journal of Business & Industrial Marketing*, Vol. 32 No. 5, pp. 693-709.

Brem, A., and Viardot, E. (2017). Revolution of Innovation Management: The Digital Breakthrough. In Revolution of Innovation Management (pp. 1-16). Palgrave Macmillan, London.

Bucchiarone, A., Battisti, S., Marconi, A., Maldacea, R., and Cardona-Ponce, D. (2020). Autonomous Shuttle-as-a-Service (ASaaS): Challenges, Opportunities, and Social

Implications. *IEEE Transactions on Intelligent Transportation Systems*, doi:10.1109/TITS.2020.3025670.

Carraro, W. B. W. H., Battisti, S., and Brito, C. (2020). Identifying innovative practices of management control among start-ups. *International Journal of Management Practice*, 13(4), 401-418.

Davidsson, P. (2015). Entrepreneurial opportunities and the entrepreneurship nexus: A re-conceptualization. *Journal of Business Venturing*, 30(5), 674-695.

Farah, M. F., and Ramadan, Z. B. (2017). Disruptions versus more disruptions: How the Amazon dash button is altering consumer buying patterns. *Journal of Retailing and Consumer Services*, 39, 54-61.

Gensler, S., Neslin, S. A., and Verhoef, P. C. (2017). The showrooming phenomenon: it's more than just about price. *Journal of Interactive Marketing*, 38, 29-43.

Guardian (2017). www.theguardian.com/technology/2017/may/26/amazon-new-york-bookstore. Accessed on 26 May 2017.

Jack, S. L. (2010). Approaches to studying networks: Implications and outcomes. *Journal of Business Venturing*, 25(1), 120-137.

Jing, B. (2018). Showrooming and webrooming: Information externalities between online and offline sellers. *Marketing Science*, 37(3), 469-483.

Kampfer, K., Ivens, B., and Brem, A. (2017). Multisensory innovation: Haptic input and its role in product design. *IEEE Engineering Management Review*, 45(4), 32-38.

La Rocca, A., Moscatelli, P., Perna, A., and Snehota, I. (2016). Customer involvement in new product development in B2B: The role of sales. *Industrial Marketing Management*, 58, 45-57.

Laage-Hellman, J., Landqvist, M., and Lind, F. (2018). Business creation in networks: How a technology-based start-up collaborates with customers in product development. *Industrial Marketing Management*, 70, 13-24.

Lamine, W., Fayolle, A., Jack, S., and Byrne, J. (2019). The role of materially heterogeneous entities in the entrepreneurial network. *Industrial Marketing Management*. Vol.80, pp. 99-114. https://doi.org/10.1016/j.indmarman.2017.12.004.

Latimes (2018). https://www.latimes.com/books/la-et-jc-amazon-stores-20180604-story.html. Accessed on 4 June 2018.

Lee, Z. W., Chan, T. K., Chong, A. Y. L., and Thadani, D. R. (2019). Customer engagement through omnichannel retailing: The effects of channel integration quality. *Industrial Marketing Management*, 77, 90-101.

Leite, E., and Bengtson, A. (2018). A business network view on value creation and capture in public-private cooperation. *Industrial Marketing Management*, Vol. 73, 181-192.

Leminen, S., Nyström, A. G., and Westerlund, M. (2019). Change processes in open innovation networks–Exploring living labs. *Industrial Marketing Management*. In press, https://doi.org/10.1016/j.indmarman.2019.01.013.

McMullen, J. S., and Bergman Jr, B. J. (2017). Social entrepreneurship and the development paradox of pro-social motivation: A cautionary tale. *Strategic Entrepreneurship Journal*, 11(3), 243-270.

Mehra, A., Kumar, S., and Raju, J. S. (2017). Competitive strategies for brick-and-mortar stores to counter "showrooming". *Management Science*, *64*(7), 3076-3090.

Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41(6), 1029-1055.

Ogilvie, J., Agnihotri, R., Rapp, A., and Trainor, K. (2018). Social media technology use and salesperson performance: A two study examination of the role of salesperson behaviors, characteristics, and training. *Industrial Marketing Management*, Vol. 75, pp.55-65.

Pagani, M., and Pardo, C. (2017). The impact of digital technology on relationships in a business network. *Industrial Marketing Management*, Vol.67, pp.185-192.

Rapp, A., Baker, T. L., Bachrach, D. G., Ogilvie, J., and Beitelspacher, L. S. (2015). Perceived customer showrooming behavior and the effect on retail salesperson self-efficacy and performance. *Journal of Retailing, 91*(2), 358-369.

Richter, C., Kraus, S., Brem, A., Durst, S., and Giselbrecht, C. (2017). Digital entrepreneurship: Innovative business models for the sharing economy. *Creativity and Innovation Management*, 26(3), 300-310.

Ritala, P., Golnam, A., and Wegmann, A. (2014). Coopetition-based business models: The case of Amazon.com. *Industrial Marketing Management*, 43(2), 236-249.

Schein, E. H. (2008). Clinical inquiry/research. In P. Reason and H. Bradbury (Eds.), *Handbook of action research*. 2nd ed. pp. 266-279, Sage, London.

Shannahan, R. J., Bush, A. J., Shannahan, K. L., and Moncrief, W. C. (2015). How salesperson perceptions of customers' pro-social behaviors help drive salesperson performance. *Industrial Marketing Management*, 51, 100-114.

Sharma, D., & Gassenheimer, J. B. (2009). Internet channel and perceived cannibalization: Scale development and validation in a personal selling context. *European Journal of Marketing*, *43*(7/8), 1076-1091.

Sorescu, A., Frambach, R. T., Singh, J., Rangaswamy, A., and Bridges, C. (2011). Innovations in retail business models. *Journal of Retailing*, 87, S3-S16.

Srinivasan, R. (2008). Sources, characteristics and effects of emerging technologies: Research opportunities in innovation. *Industrial Marketing Management*, 37(6), 633-640.

Syam, N., and Sharma, A. (2018). Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. *Industrial Marketing Management*, 69, 135-146.

Villani, E., Greco, L., and Phillips, N. (2017). Understanding Value Creation in Public-Private Partnerships: A Comparative Case Study. *Journal of Management Studies*, 54(6), 876-905.

von Briel, F., Davidsson, P., and Recker, J. (2018). Digital technologies as external enablers of new venture creation in the IT hardware sector. *Entrepreneurship Theory and Practice*, 42(1), 47-69.

Waluszewski, A., Snehota, I., and La Rocca, A. (2019). What remains to be discovered? Manifesto for researching the interactive business world. *Journal of Business & Industrial Marketing*, 34(1), 232-39.

Wilson, E. J., Bunn, M. D., and Savage, G. T. (2010). Anatomy of a social partnership: A stakeholder perspective. *Industrial Marketing Management*, 39(1), 76-90.

Winter, J., Battisti, S., Burström, T., and Luukkainen, S. (2018). Exploring the success factors of mobile business ecosystems. *International Journal of Innovation and Technology Management*, 15(03), 1850026.

Yin, R. K. (2003). *Case Study Research: Design and Methods*. 3rd edition, Applied Social Science Research Methods, Vol. 5. pp. 181, Sage Publications ltd, London-UK.