

Sales technology and salespeople's ambidexterity: an ecosystem approach

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Abstract

Purpose – This paper aims to explore the impact of salespeople's goal orientation and self-regulatory mode on their performance through sales ambidexterity and sales technology infusion (STI) using a sales technology ecosystem approach.

Design/methodology/approach – This paper adopts a qualitative methodology, through in-depth interviews with salespeople from a diverse range of industries, age profiles and contexts, to explore the narratives and original meanings related to their goal orientation, self-regulatory mode, ambidexterity, STI and performance.

Findings – Sceptics are salespeople who may fear or hesitate to fully use the sales technology, whereas enthusiasts are ambidextrous salespeople with high STI, who are more open to change and able to face uncertainty, regardless of the differences in their background in terms of industry, age and experience.

Practical implications – STI may be influenced by individual factors, such as the salesperson's goal orientation and self-regulatory mode. Hence, sales organizations should try to foster and facilitate further STI and sales ambidexterity, which are key to achieving positive outcomes in today's technology-intensive sales settings.

Originality/value – This paper extends the current literature on sales technology and sales ambidexterity within a sales technology ecosystem perspective and provides new insight on the combined impact of these variables on the salesperson's performance.

Keywords Goal orientation, Ambidexterity, Salesperson, Sales technology, Sales technology ecosystem, Sales technology infusion

Paper type Research paper

Introduction

The role of salespeople in the business-to-business (B2B) context has evolved because of rapid technological developments (Hunter and Perreault, 2007; Hughes and Ogilvie, 2020), as well as growing business complexity and environmental uncertainty (Sharma *et al.*, 2020). To meet the challenges posed by these changes in the competitive and technological landscape, business organizations are introducing new paradigms to improve the effectiveness of their sales force by using new technologies to shape the way they form and manage relationships with their customers (Sharma and Sheth, 2010; Cuevas, 2018). These changes are challenging the existing sales force models and forcing organizations to look for new ways to optimally manage their resources and achieve multiple goals (Yu *et al.*, 2013; Sleep *et al.*, 2020).

One example of these new paradigms is sales ambidexterity (Jasmand *et al.*, 2012; DeCarlo and Lam, 2016), which proposes to reconcile apparently disparate and opposite objectives, leverage past opportunities and, at the same time, generate new activities as a prerequisite for survival and success in today's market (Raisch and Birkinshaw, 2008). Moreover, in

the face of the growing importance of technology for B2B sales, sales technologies have caused a shift toward interactivity, connectivity and the pursuit of ongoing relationships, which seem to have not only reduced some traditional sales activities but also transformed the role and the activities carried out by the salesperson (Sheth and Sharma, 2008). The growing technological developments such as digitalization, artificial intelligence and machine learning continue to have major implications for personal selling and sales functions in terms of how to identify, approach and communicate with target customers, manage the pre- and post-sales process and create and maintain customer knowledgebase (Singh *et al.*, 2019; de Ruyter *et al.*, 2020).

Past research on sales technology has explored the roles of individual salespeople, sales organization (Ahearne and Rapp, 2010; Marshall *et al.*, 2012; Cron, 2017) and even specific technologies (Agnihotri *et al.*, 2017a, 2017b). However, there is still no unified, evolutionary perspective depicting the entire set of technological tools currently available for sales professionals to carry out their work. In this context, the SalesTech landscape provides a summary vision of the software and applications that help salespeople and sales organizations to manage the sales process, including contact management, appointments, calls, video conferences, document management and digital signature systems, phase automation,

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team building and much more. As the SalesTech landscape includes sales technologies and tools provided by about 830 vendors and identifies at least 38 categories of software and apps (De Kouchkovsky, 2019), the summary vision of the SalesTech landscape shows the entity and fragmentation of the market on the one hand and how sales professionals and organizations are becoming more frustrated with the number of applications they have in their stack, on the other. Thus, further reflection on the number of tools available to salespeople, who may find useful a classification framework that can empower the B2B sales force, becomes necessary. This framework may also help develop knowledge about the ways to use and implement sales technology tools through devices and supporting systems (Limbu *et al.*, 2014) and about their evolution over the years (Adomavicius *et al.*, 2008).

Many authors studying sales technology have also shifted their focus from the issue of technology adoption (Schillewaert *et al.*, 2005; Eggert and Serdaroglu, 2011) to its actual usage (Buehrer *et al.*, 2005; Ogilvie *et al.*, 2018), which does not result in a net variability. In fact, salespeople can no longer ignore or opt-out of the adoption of some technologies in their work, as most B2B sales jobs require a heavy dependence on sales technology, particularly mobile platforms (Romàn *et al.*, 2018). Therefore, the variability of actual technology usage seems to vary significantly, from a sceptical reception to a maximized use of sales technology (Hunter and Panagopoulos, 2015). Technological advancements are also disrupting well-established sales practices, extending the boundaries of sales theories and revealing new implications for salespeople's activities, orientations and performance (Grove *et al.*, 2018).

This paper aims to address the above phenomena from the viewpoint of the individual salesperson by providing a broad and comprehensive analysis, from a sales technology ecosystem perspective, of salespeople's usage of various sales technologies based on their own orientations. The sales technology ecosystem perspective consists of the complex concepts and tools relating to the evolution of technologies and their application to sales technology (Bronfenbrenner, 1979). Past research defines sales technology as "a set of technological tools that can be used by salespeople to enhance efficiency and effectiveness when dealing with customers" (Agnihotri *et al.*, 2017a, 2017b; Jelinek, 2013). This paper extends this definition of sales technology by adopting the technology ecosystem perspective, which portrays an organic relationship, evolutionarily speaking, between the individual salesperson and the set of technologies that he/she uses to support and empower sales activities and processes.

In other words, this paper presents the sales technology ecosystem as a set of sales technologies revolving around one focal technology, such as customer relationship management (CRM), sales force automation (SFA) or similar technologies, the accessories/tools connected to its use (e.g. devices or social media), integration tools (e.g. business contact databases or digital signatures), specific or generalist applications (conference software) or additional technology to support the evolution of this system (Adomavicius *et al.*, 2007, 2008; De Kouchkovsky, 2019). In short, this paper aims to expand the sales technology literature by addressing three specific research gaps.

First, there have been calls for more research on the salesperson's individual traits and orientations toward technology and customer interaction, as these play a role in whether or not salespeople use a given technology (Schillewaert *et al.*, 2005; Jelinek *et al.*, 2006; Jelinek, 2013). Similarly, Singh *et al.* (2019) stress that research on the relationship between sales technology and salespeople should consider such aspects as personal evaluation and motivation, together with salespeople's ability to self-regulate, which are fundamental in boundary-spanning roles (Jones *et al.*, 2005). In fact, individual salespeople must pursue multiple objectives simultaneously; hence, their use of sales technology must be investigated with respect to their self-regulation (Ahearn *et al.*, 2004) and personal orientations, such as sales ambidexterity (DeCarlo and Lam, 2016). Similarly, Tarafdar (2014) also calls for additional research on the effects of other constructs of interest, such as the individual's adaptability, experience, effort and motivation. This is the first gap addressed in this paper.

Second, while past research also acknowledges that sales technology could help and support the salesperson with the sales process, particularly, on relational activities (Agnihotri *et al.*, 2017a, 2017b; Singh *et al.*, 2019), the growing focus on the importance of managing dualities, such as locomotion and assessment in self-regulatory mode or the hunting and farming orientation in sales ambidexterity (DeCarlo and Lam, 2016; Vieira *et al.*, 2019), provides an important research opportunity. In today's competitive and evolving environment, sales ambidexterity, conceived within the domain of salesperson orientation, represents a way of overcoming traditionally intended trade-offs and paradigms; it provides a better use of resources and strengthens the customer base in dimension, value and long-term relationship stability (Jasmand *et al.*, 2012; DeCarlo and Lam, 2016; Cuevas, 2018). However, few research studies link sales ambidexterity with sales technology usage (Agnihotri *et al.*, 2017a, 2017b; Hughes and Ogilvie, 2020), especially in B2B sales (Rapp *et al.*, 2017), resulting in calls for more research on individual and organizational factors that enable sales ambidexterity (Agnihotri *et al.*, 2017a, 2017b). This is the second gap addressed in this paper.

Third, the literature on sales technology has often focused on the antecedents of the actual usage of technology in the sales profession (Tarafdar *et al.*, 2014), but Hunter and Panagopoulos (2015) have proposed the concept of "sales technology infusion" (STI) as the "individual's effort to effectively use technology to its fullest potential, which is well beyond initial acceptance and takes place during the post-implementation stage," a definition that emphasizes the salesperson's role in how best to integrate sales technology into work processes. Considering the large investments made by companies on sales technologies, Hunter and Panagopoulos (2015) also ask for further analysis of their actual impact on salesperson efficiency and empowerment using a qualitative and exploratory approach. Additionally, Singh *et al.* (2019) call for more research on the relationships between salesperson orientation and sales technology, using an ecosystem perspective (Adomavicius *et al.*, 2007, 2008; Jelinek, 2013; Hunter and Panagopoulos, 2015). This is the third gap addressed in the present paper.

This work begins with a review of relevant literature on salespeople's orientations, sales ambidexterity and STI, as recommended by [Palmatier et al. \(2018\)](#); then, the qualitative methodology used to explore the relationships among these constructs using 20 in-depth interviews ([Buehrer et al., 2005](#); [McCracken, 1988](#)) is presented. The paper then offers a discussion of the findings which, combined with the results of the literature review, have led the authors to develop a typology of salespeople based on their levels of ambidexterity and responses to STI ([Figure 1](#)). Finally, the paper points to some limitations and directions for further research.

Theoretical background

Sales technology and the sales profession

Sales technologies are fundamental in modern B2B sales and this topic has been addressed from various points of view over the years ([Hunter and Panagopoulos, 2015](#); [Romàn et al., 2018](#)). Some researchers have predicted that technologies would reduce the importance of a sales force and replace salespeople, as many sales tasks that were considered impossible to digitize a few years ago can now be automated ([Cron, 2017](#); [Knight, 2017](#); [Thaichon et al., 2018](#); [Marr, 2020](#)), while others emphasize the value of personal interactions ([Lewin and Sager, 2010](#); [Agnihotri et al., 2017a, 2017b](#)) and value co-creation ([Grove et al., 2018](#)). Yet, others blend these perspectives to suggest that online channels can be integrated into traditional sales structures to form hybrid sales structures ([Sleep et al., 2020](#)).

Most of the literature on the topic of sales technology focuses on the acceptance of technology ([Homburg et al., 2010](#)) or a sales technology orientation ([Hunter and Perreault, 2006](#); [Limbu et al., 2014](#)). In fact, despite the strategic nature of these investments, the expected results, in terms of actual use and performance outcome, fail to manifest if salespeople do not implement sales technology with proper training and motivation ([Eggert and Serdaroglu, 2011](#); [Ogilvie et al., 2018](#)). This phenomenon has often been observed through the technology acceptance model, developed by Davis (1989), which describes individual antecedents of use ([Ahearne et al., 2004](#); [Jelinek et al., 2006](#)). Some scholars have focused on the role of the social environment ([Homburg et al., 2010](#)), while others have observed the issue in light of the salesperson's increasingly strategic role in recent years ([Cron, 2017](#); [Ogilvie](#)

[et al., 2018](#)). Furthermore, tools and applications are now widespread and user-friendly, even on mobile devices, thanks to a reduced learning curve ([Romàn et al., 2018](#)). Moreover, salespeople will be increasingly impacted by being always online and having nowhere to hide ([Agnihotri et al., 2016](#)), which will only raise their stress levels ([Tarafdar et al., 2014](#)).

In general, the premise behind the adoption of salesforce technology is that it will allow salespeople to become more effective and efficient, as technology helps them reduce the time needed to complete the sales cycle and help them improve customer targeting and prospect conversion ([Ahearne and Rapp, 2010](#)). Sales technology is also said to help build relationships and improve administrative performance ([Hunter and Perreault, 2006, 2007](#)); it is also associated with customer service and a salesperson's knowledge ([Ahearne et al., 2008](#)) as well as his/her level of effort and adaptive sales behavior ([Rapp et al., 2008](#)). Although the use of sales technology has been touted as a panacea for nearly all salesforce problems, a line of related literature suggests that the use of technology can also impair performance. According to the information technology (IT) productivity paradox, technology can yield negative outcomes if not properly implemented or supported, but it also has the ability to improve a salesperson's performance when contextual factors are considered, as well ([Ahearne and Rapp, 2010](#); [Ogilvie et al., 2018](#)).

In defining a salesperson's relationship with sales technology, [Hunter and Panagopoulos \(2015\)](#) regard it as one between sales technology and the salesperson's commitment to change that goes beyond its adoption, in relation to customer-oriented selling and sales performance. Indeed, the concept of STI goes beyond simple use or adoption, as it represents an individual's effort to effectively use technology to its fullest potential, which happens after initial acceptance and during the post-implementation stage. In particular, sales technology can enhance a salesperson's ability to communicate effectively with customers ([Ogilvie et al., 2018](#)), to conduct more effective analyses, to meet customer needs and to achieve a higher sales performance ([Itani et al., 2019](#)).

In fact, several recent studies have demonstrated the extent to which sales technology usage relates positively to the various dimensions – behavioral, administrative and outcome – of a salesperson's performance ([Hunter and Perreault, 2007](#); [Ahearne and Rapp, 2010](#); [Limbu et al., 2014](#)). Salespeople can realize the benefits of sales technology not only by using it frequently but also by integrating it properly into their daily work ([Sundaram et al., 2007](#); [Hunter and Panagopoulos, 2015](#)). Thus, they minimize the time spent on routine tasks and dedicate more time to value-creating activities for their customers, such as having more face-to-face time with them, retrieving timely data and providing better service by focusing on their needs; in addition, each salesperson can adapt their own style to each customer's unique concerns ([Ahearne et al., 2008](#); [Hunter and Perreault, 2007](#)). Despite the birth of new concepts, such as STI, few contributions in the current literature adopt this definition and observe the dynamics of the full and leveraged use of sales technology. Therefore, room exists for a “fine-grained view that captures both the extent and the pattern” of sales technology usage ([Hunter and Panagopoulos, 2015](#)), with particular reference to salespeople's individual dimensions, namely, under the orientation

Figure 1 Ambidexterity and sales technology infusion matrix

SALES TECHNOLOGY INFUSION	high	Tech Hunters or Farmers	Ambidextrous tech enthusiasts
	low	Traditionalist Hunters or Farmers	Ambidextrous tech sceptics
		low	high
SALES AMBIDEXTERITY			

perspective (Hunter and Perreault, 2006; Eggert and Serdaroglu, 2011; Obal and Morgan, 2018; Agnihotri *et al.*, 2017a, 2017b; Singh *et al.*, 2019).

Sales technology ecosystem

The literature has already extensively covered studies of sales technologies, including sales force automation (SFA) and CRM (Limbu *et al.*, 2014), as well as many others (Hunter and Perreault, 2006; Marshall *et al.*, 2012). Indeed, previous literature has proposed broad definitions of sales technology (Jelinek, 2013), where sales technology is the set of technological tools that can be used by salespeople to improve efficiency and effectiveness when dealing with customers (Agnihotri *et al.*, 2017a, 2017b). In fact, sales professionals today can use a wide range of communication devices and applications, including apps for tablets/smartphones, blogs, wikis, social networking sites, data warehouses and various near-field communication features, which all go beyond the traditional boundaries of CRM, SFA and sales technology (Hunter and Perreault, 2006; Marshall *et al.*, 2012; Limbu *et al.*, 2014).

This large number of tools and their interaction could be seen under the lens of *ecosystem theory* (Bronfenbrenner, 1979), to describe an *organic relationship between the salesperson and the set of technologies that he/she uses to support and enhance sales activities and processes within a dynamic and evolutionary perspective*. The analogy with the ecosystem literature (Shaw and Allen, 2018) leads to adopting the definition of a technology ecosystem (Adomavicius *et al.*, 2007) as “a system of related technologies that mutually influence evolution and development. A specific vision of the technological ecosystem is defined around a focal technology in a given context.” In particular, the sales technology ecosystem can represent a more complex perspective for the set of technologies available for salespeople; it can represent a framework within which to bring the focal technology or central elements (CRM), the competing ones (SFA), the technological components and the infrastructure and tools, such as devices or social media, to integrate (Agnihotri *et al.*, 2017a, 2017b).

These types of technologies can also be defined as salesperson-centered (Ahearne and Rapp, 2010) or salesperson-customer-shared technologies, in cases of work-sharing or communication platforms and social media (Keinänen and Kuivalainen, 2015; Ogilvie *et al.*, 2018). Furthermore, sales technology is implemented with a dual objective: achieving short-term and seller-centric results, such as generating a high level of sales, and long-term, customer-centric results, such as helping customers achieve their goals (Hunter and Perreault, 2007). Moreover for sales technology, as for any other artefact, the orchestration and alignment processes themselves nurture the ecosystem because the growing complexity of the ecosystem requires continuous realignment; thus, actors must align their complementary resources with goals set by focal roles, on the hard side, or with individual incentives, on the soft side (Han, 2017). Such processes could be perceived as self-regulatory processes (Nambisan and Baron, 2013). If sales technology is conceptualized as an ecosystem, a broader analysis of the relationship between the individual and this multifaceted articulated system is possible; in fact, it could be described as an infusion of sales technology on a continuum of possible

orientations and behaviors toward the sales technology ecosystem as a whole. However, there is no conceptualization of sales technology from an ecosystem perspective (Adomavicius *et al.*, 2007), a gap that is addressed in this paper.

Salespeople's individual orientations

Salespeople's orientations have been addressed in the literature for more than 40 years; they include the selling orientation – customer orientation) perspective (Saxe and Weitz, 1982) and the salesperson to goal achievement (goal orientation) view (Sujan *et al.*, 1994), which depends on the focus and prioritization of different aspects of the job in a learning goal or a performance goal orientation.

Among the most recent conceptualizations, some have discussed the hunting-farming orientation, which is the goal of retaining and maintaining customers during sales activities (Rackham and Wilson, 1990; Carter *et al.*, 2014; DeCarlo and Lam, 2016). Intuitively, the hunting role and orientation refer to customer-acquisition activities (e.g. prospecting, contacting, pre-classification and the conclusion of the sale), whereas farming is linked to behaviors performed toward existing customers (e.g. maintaining long-term relationships, taking orders efficiently and cross-selling and up-selling activities) (Honeycutt *et al.*, 2009; Moncrief *et al.*, 2006).

Past research on sales ambidexterity associates it with the hunting and farming analogy, which implies a self-regulatory mode (Jasmand *et al.*, 2012; Yu *et al.*, 2013; Faia and Vieira, 2017). Similarly, Vieira *et al.* (2019) distinguish between *assessment*, which is based on critically evaluating entities with less emphasis on action, and *locomotion*, which refers to proactive behavior and movement (Kruglanski *et al.*, 2000), related to the challenges faced by salespeople in customer acquisition and retention (DeCarlo and Lam, 2016). Prior research also shows a link between salespeople's orientations, the self-regulatory mode and sales ambidexterity, and their role in managing the ecosystem's interface (Han *et al.*, 2017). Hence, this paper studies the impact of the self-regulatory mode and other orientations on performance.

Ambidexterity in sales

Previous literature used ambidexterity as a metaphor to describe the ability of an organization to conduct complex and seemingly conflicting tasks and to simultaneously pursue divergent goals (Gibson and Birkinshaw, 2004; Lubatkin *et al.*, 2006; O'Reilly and Tushman, 2013; Tushman and O'Reilly, 1996). It involves carrying out a series of critical, relevant and potentially conflicting activities. In the past few years, both research and practice have started looking at ambidexterity in sales, in its various nuances, as a prerequisite to both survival and success in today's marketplace (Raisch and Birkinshaw, 2008). Furthermore, past research has demonstrated that a consistent equilibrium between salespeople's goals and foci should maximize a salesperson's ambidextrous behavior, which, in turn, could increase sales performance (Yu *et al.*, 2013; Vieira *et al.*, 2019).

More recently, ambidexterity has been applied to sales as a contraposition between exploration and exploitation (de Ruyter *et al.*, 2014). As both of these are critical to the long-term survival of the organization (Cuevas, 2018), it is important for individual salespeople to find the right balance and to adapt to both internal and external changes

simultaneously. Because the concept of ambidexterity is heterogeneous in terms of conceptualization, definition and organizational level of application (e.g. service, retail and IT), the literature has been organized according to type of market/selling [B2B and business to consumer (B2C)], level of application (organization, management or individual) and research stream (Table 1).

The first stream, service-sales ambidexterity (Jasmand *et al.*, 2012; Yu *et al.*, 2013; Agnihotri *et al.*, 2017a, 2017b), perceives ambidexterity as an orientation that motivates a series of customer services and cross-selling and up-selling behaviors (Jasmand *et al.*, 2012; Sok *et al.*, 2016), where ambidexterity is the simultaneous pursuit of service and sales during encounters with the customer. Many recent works have also followed this approach, adhering to the general individual sales ambidexterity definition (Mullins *et al.*, 2020; Panagopoulos *et al.*, 2020; Becker *et al.*, 2020; Hughes and Ogilvie, 2020), more so than the organizational one (de Ruyter *et al.*, 2020). The second research stream (Van der Borgh and Schepers, 2014; Van der Borgh *et al.*, 2017) studies ambidexterity as product selling ambidexterity, aside from cross-selling and up-selling. In contrast, the third research stream refers to the conceptualization of acquiring and developing customers (DeCarlo and Lam, 2016; Vieira *et al.*, 2019).

Recent research distinguishes and conceptualizes the coexistence of these traits as orientation ambidexterity and/or behavioral ambidexterity (Lam *et al.*, 2019; Vieira *et al.*, 2019). This approach was further applied to the reviewed literature on ambidexterity in sales in the attempt to provide a better categorization of ambidexterity as an orientation (Van der Borgh and Schepers, 2014; DeCarlo and Lam, 2016; Gabler

et al., 2017), as a behavior (Yu *et al.*, 2013, 2015; Rapp and Baker, 2017; Van der Borgh *et al.*, 2017), as both (Jasmand *et al.*, 2012; Rapp *et al.*, 2013; Patterson *et al.*, 2014; Sok *et al.*, 2016; Ogilvie *et al.*, 2017; Rapp *et al.*, 2017; Faia and Vieira, 2017; Lam *et al.*, 2019) and as a capability (Nijssen *et al.*, 2017; Cuevas, 2018). Accordingly, this paper explores the issue of sales ambidexterity in conjunction with sales technology, as it would represent a novelty in the sales ambidexterity literature, especially, as previous literature has encouraged investigations into the individual level domain as well as the factors influencing sales technology integration (Rapp *et al.*, 2017).

Methodology

This study explores the impact of salespeople's goal orientation and self-regulatory mode on their performance through sales ambidexterity and STI, using an exploratory research design with a qualitative approach, to allow for a more fine-grained picture of the phenomenon to be captured (Hunter and Panagopoulos, 2015). Specifically, it uses in-depth interviews with key informants as it allows for an exploration of the experience of others and the meaning they make of that experience (McCracken, 1988; Buehrer *et al.*, 2005; Granot *et al.*, 2012). This approach allows data collection and analysis to proceed in an iterative and narrative way to portray and explore all the rich elements of a complex phenomenon such as the one studied in this paper and to search for variation in the studied categories or processes (Charmaz, 2008).

The data collection relied on a purposive sampling procedure (Patton, 2015), following the maximum variation criteria in terms of the age of the participants and years of experience, types of industry (e.g. IT, pharmaceutical, beauty, fashion,

Table 1 Sales ambidexterity – research streams and definitions

Streams	SSA: service-sales ambidexterity	Acquisition – retention	Innovation – related
Definition	Ambidexterity as an orientation that motivates a series of customer services and cross/up-selling behavior, as simultaneous pursuit of service and sales during encounters with the customer	Ambidexterity as acquiring and developing customers, as the ability of simultaneously pursuing exploration and exploitation, as hunting and farming, undergoing transactional and relational selling, trying to align organization and performances at various organizational levels	Ambidexterity as new product selling ambidexterity, aside cross/up-selling
Studies	<ul style="list-style-type: none"> • Jasmand <i>et al.</i> (2012), • Sok <i>et al.</i> (2016), • Rapp <i>et al.</i> (2013), • Yu <i>et al.</i> (2013), • Patterson <i>et al.</i> (2014), • Yu <i>et al.</i> (2015), • Agnihotri <i>et al.</i> (2017a, 2017b), • Rapp <i>et al.</i> (2017), • Rapp and Baker (2017), • Ogilvie <i>et al.</i> (2017), • Gabler <i>et al.</i> (2017), • Faia and Vieira (2017), • Panagopoulos <i>et al.</i> (2020), • Mullins <i>et al.</i> (2020), • Becker <i>et al.</i> (2020), • Hughes and Ogilvie (2020), • de Ruyter <i>et al.</i> (2020) 	<ul style="list-style-type: none"> • DeCarlo and Lam (2016), • Nijssen <i>et al.</i> (2017), • Cuevas (2018), • Lam <i>et al.</i> (2019), • Vieira <i>et al.</i> (2019) 	<ul style="list-style-type: none"> • Van der Borgh and Schepers (2014), • Van der Borgh <i>et al.</i> (2017)

automotive, food and technical equipment), as well as the size and level of internationalization of the employer company. All of the participants are Italian salespeople and sales managers working in B2B sectors; the types of selling as well as the technological ecosystem and tool peculiarities addressed in this work are coherent with an exclusively B2B research setting. In addition, the sample purposively included salespeople, area managers and sales managers to strengthen the findings. The interviews were conducted face-to-face, as well as on the phone via video conferencing systems, in Italian, which is the native language of part of the research team and of the participants interviewed. The length of each interview ranged from 20 to 60 min with an average length of 34 min. After all of the interviews were completed, the research team met to go over the notes and corroborate the findings. Any questions or inconsistencies the research team had with the data were clarified by contacting, via telephone, the key informants to enhance the validity of the study. The sample was comprised of 20 salespeople; initially, ten salespeople were identified and contacted either directly or via social media (LinkedIn) and, subsequently, snowballing techniques were used in interviews to gain access to one additional relevant informant. Table 2, shows all the sample participants' characteristics.

Open-ended questions were used for data collection on various themes, summarized in the interview guide shown in the below list.

Interview guide

Interview guide (semi-structured).

List of questions for salesperson's orientation, ambidexterity and sales technology are as follows:

- 1 Could you give us some information about:
 - Gender/age;
 - Education;

- Have you ever taken training courses or masters? Does your company organize any?
 - Work situation (sector, role, employee or self-employed contract); and
 - Characteristics of the company and the market.
- 2 Describe your customers (what kind of companies, how you interface with them, how often you contact them, how often they contact you and for what).
 - 3 (Customer-oriented Selling) what you think is important in the work of the salesperson, what you focus on, what is your objective (short/long-term goals).
 - 4 (Learning vs performance orientation) between the two, do you think you are a person who aims more at achieving results or experience and growth?
 - 5 (Locomotion vs assessment) Do you tend to pay attention to the process and proactivity or objectives to be achieved and to the evaluation you will undergo, for example, to compare yourself with others?
 - 6 (Ambidexterity) How would you define your time management toward customers? More oriented to serve existing customers or to acquire new ones?
 - 7 How would you define the use you make of technology? Do you find it useful or a substitute?
 - describe your technological equipment (ecosystem: CRM focal technology, similar tools, tools and instruments);
 - describe your attitude and usage (STI);
 - the contribution it plays in your work;
 - the technological contribution through the sales process (closing?);
 - if it contributes more to the H/F aspects;
 - the impact of technology at work on the aspects relating to the company/organization and customers; and

Table 2 Sample characteristics

#	Name*	Age	Gender	Job	Industry	Sales experience (years)	Interview length (min)
1	Claudio	37	M	Account Manager	ICT	13	22
2	Nicola	60	M	Area Manager	Food	27	34
3	Carmen	43	F	Sales agent	Automotive	8	25
4	Matteo	32	M	Sales agent	Beauty	8	25
5	Elio	48	M	Sales agent	Automotive	20	25
6	Davide	28	M	Sales agent	Pharma	5	30
7	Fabio	29	M	Pre-sales specialist	ICT	3	38
8	Francesco	36	M	Account Manager	Technical supply	10	35
9	Oliviero	64	M	Sales manager/CEO	Fashion apparel	40	48
10	Marcello	52	M	Sales agent	Technical supply	30	45
11	Gianluca	50	M	Sales manager	ICT	25	32
12	Giovanna	47	F	Sales agent	Medical devices	10	28
13	Riccardo	36	M	Area manager	Homewear	12	46
14	Giancarlo	50	M	Account Manager	Web design	20	25
15	Francesco	55	M	Sales agent	Sanitary facilities	25	20
16	Mirco	58	M	Sales manager	ICT	20	61
17	Andrea	30	M	Area manager	Business services	8	35
18	Amedeo	30	M	Sales manager	ICT	6	25
19	Fabio	39	M	Sales manager	Communication	12	42
20	Valerio	35	M	Sales agent	ICT	5	33

Notes: *All the names are fictitious to hide the actual identities of the participants. ICT = Information and communication technology

- control and evaluation issues, motivation, the role it has in achieving sales performance such as budgets and long-term relationships.
- 8 Is there anything you would have thought we would have asked you and that we did not do?
- 9 Do you have any questions for us?

The linguistic adaptation of the concepts during the data collection and analysis was ensured by experienced researchers (native Italian speakers) using Brislin's (1990) back-translation method with two translators to ensure the same content and meaning. The questions were carefully designed to be unobtrusive and nondirective and to avoid the potential pitfalls of "active listening" (McCracken, 1988).

As for the data analysis, all of the emerging themes were coded with descriptive codes (Strauss and Corbin, 1998) following an iterative process (Pardo *et al.*, 2019): one researcher in the team performed the open coding, using transcribed text to identify the interconnections between individual personal orientations and the sales technology environment; then, another researcher screened the codes and developed, together with the first researcher, an initial coding plan. In the second coding step, the properties and dimensions of the initially identified concepts were thoroughly investigated, and the relationships among them were traced. Finally, the dimensions, outcomes and contingency factors were designed into study findings; the internal consistency and wording was refined; and the most relevant quotations were selected from the transcripts.

To improve the authenticity and trustworthiness of the results, several consolidated protocols for qualitative research were implemented (Lincoln and Guba, 1986). First, the generalizability and transferability of the results were sought by involving sales professionals from multiple sectors and companies (refer Interview guide). Second, the reliability and replicability of the results were improved by describing the definitions and the analytical process. Finally, the credibility and internal validity of the findings were strengthened by using multiple researchers in the coding process, a high level of agreement in the coding and data saturation in the analysis phase (Miles and Huberman, 1994, p. 278).

Data analysis and results

The findings from this study seem to enhance the emerging themes and the perception of sales technology ecosystems, in

line with the aforementioned literature. The findings highlight the heterogeneity of the interviewees' positions, before focusing on sales technology and specific individual orientations. Table 3 summarizes all the key findings.

Sales technology ecosystems and perception at the individual level

Sales technology was the main topic of the interviews, and it was framed to the interviewees as a sales technology ecosystem or as an integrated system of interconnected technologies that are used in sales jobs. In line with Grove *et al.* (2018), some salespeople feel empowered by the information and analytical possibilities offered by technology, as it allows them to focus on critical activities; others, however, feel their role is threatened by it. Interestingly, from the early stage of the study, two main points of view seemed to emerge: the variability in the perception of technology and in the degree of STI has been described as a continuum that finds, at its two extremes, either enthusiastic or sceptical profiles with respect to sales technology. Thus, one group (the enthusiasts) had positive feelings toward technology adoption and its use (#3 and #12), whereas the other group (the sceptics) had more negative feelings toward it (#10).

In the enthusiastic group, sales technology is perceived as being useful and essential for the sales profession, even in the face of a more digital customer journey. For example, #3 said that:

[...] technology is important because it helps you organize your day, reports are fundamental [...] it's a lot of paper, but they are useful to analyse your work, customers, and the market, at least that's what I mean, based on my experience.

Similarly, #12 states that:

It [technology] is a help. I believe it is an ally in everyday work. [...] So, when there is no technology, you suffer the lack of it, while when it is there, it is an added value.

In contrast, the sceptics feel that sales technology could have an impact on salespeople's role, in term of substitution. For example, #10 says, "I feel like asking myself how long the salesperson role will continue to exist in this way."

Although some participants recognize the usefulness and importance of sales technology in today's context, some associate with it a particular meaning: sales technology is acting as a substitute, not to the detriment of the salesperson but to

Table 3 Key findings

Relation with the sales technology ecosystem	Tech sceptics	Tech enthusiasts
Sales technology perceived as	A substitute	Essential to my job
Sales technology is fundamental to	The company	The salesperson
Additional sales insight	Is stressful: nowhere to hide	Helps me organize better and proves my efforts
STI	Is stressful: always online	Empowers my work
Sales tech VS Salesperson	Focus on substitution effect	Focus on the value (strategic sight and human relation)
Hunting	Go analogic	IT salespeople use tech along the whole sales process, non-IT salespeople use tech, except when focusing on the human interaction
Farming	CRM is a burden, Information ownership	CRM is a resource, Information sharing
Sales ambidexterity	–	Sales technology help better allocating time and resources, supporting the sales process

the organizational and information system structure. For example, #15 says that:

A well-structured organization uses it (CRM) because it is necessary to have a database that supports you. Those who have not used it, or work for a company that is not yet using it, see it as a hindrance.

Similarly, #17 suggests:

You can't do without technology because it's a fundamental support. In fact, companies remain undersized if they do not reinforce themselves through the use of adequate technologies [...] in reality, CRM is one of the building blocks - within a digital set of media - that supports the planning of the work and helps salespeople face the continuous changes in customer needs and the constant changes in organizations that are needed in order to support customers.

Another theme that emerged from the interviews is that the adoption of sales technology results in unwanted consequences for salespeople, in terms of the additional stress and demands imposed by activity reporting requirements. Salespeople's positions on this matter depend on their age and their way of working (less vs more analytical); most companies, however, continue to monitor and reward salespeople through the usual mechanisms [fixed, or based on revenue, and key performance indicators (KPIs)]. For example, #8 shares that:

In the past, you could work more freely and with fewer controls [...] today, there is more analysis, more complex data, which we must also give to the Board of directors, but they also want CRM to be filled in, with the appointments, with everything that has been done. Before, trust was placed more on the person; now, they want to see the data.

However, #13 identifies some limitations:

CRM is a beautiful concept, but I find it a bit onerous, especially on the salesperson side. Compiling the visit report every time is very difficult. We have a network of multi-firm agents, and with them, it is even more difficult to impose the culture of CRM.

Both the enthusiasts and sceptics highlight the fact that sales technology is more important for the company than for the salesperson. In general, reactions vary, as some salespeople perceive sales technology as time-consuming and a source of additional stress (Interviewee #15), whereas others consider timely reporting to be a positive element, one which allows them to show proof of their work and properly dedicate themselves to it (#8). Specifically, #15 says that:

For compiling and updating a CRM, it is true that the agent himself needs it to work better, but if we want to speak in practical terms, the representative does not need a CRM to work better because he knows his area with his eyes closed. CRM is all local news, which, through the agent, becomes the property of the company.

In contrast, #8 expresses satisfaction with the current system:

My general manager is very fussy on these things, but he doesn't oppress me; he knows and understands. Having my monthly reports, he actually knows how it is going and he understands.

Salespeople and sales technology infusion

The evolution of sales technology, as well as its availability and use, seems linked to particular goal orientations, proactiveness and a general openness to change. Several interviewees made observations on the difference between availability, investment and actual use of sales technology. For example, #2 shares:

I find technology very useful; in fact, in my opinion, it is a pity when people buy it and then do not use it, it is a real shame [...] it should be used as well as possible to help us in our work.

Similarly, #13 shares mixed feelings about the influx of technology in salespeople's everyday lives:

I believe that I am using technology in its entirety, to its full potential. For example, I have a LinkedIn Premium account to get in touch with new customers. We have CRM. We have an iPad system and an application to enter customer orders and data, and we have the VPN, of course [...]. However, WhatsApp, which once was a great resource, is becoming a problem, in the sense that there is no longer a time barrier, etc.

Finally, in discussing technology, there are those who attest to its relevance in nearly all stages of the sales process where using various technologies (within the ecosystem) is seen as making use of a varied and integrated set of different working tools that can help them in their work. For example, #17 says:

[Technology] is the differentiating element that I personally brought to the market. [...] Even using media, presentations, clouds, or platforms, these all contribute to presenting ourselves and our offer at their best.

Similarly, #20 states:

[Technology] helps a lot but because I know how to use it, taking a little bit of everything. Let's say I found a fairly precise method of finding the right customer [...] so, I have a good relationship with technology.

According to the enthusiasts, sales technology is transforming the sales job; face-to-face interactions are often being mediated by technology or are being transferred online. In many cases, the enthusiasts demonstrate and confirm a strong role identity and motivation for their profession, based on the intricacies of managing complex data collection and processing, contact management of the relationship and human bonds, which go beyond any automation. For example, #13 says:

The CEO claimed that thanks to these technologies, we would never have to go out again to meet the clients, no longer work alongside the agents, but I explained to him that the salesperson's job is not only that of making sales. Some think that the salesperson is a machine that only has to sell. Instead, the sales professional is the eye of the company in the area and is the one who actually transfers knowledge to the company that also contributes to future strategies.

Similarly, #19 explains the role of technology in the transition from the offline world:

In the digital arena; it's all about rethinking a mind-set of analogue processes that can no longer be there. [...] But for me, there is also an analogical interaction, B2B, B2C, but also C2C, or H2H, i.e., human to human, remains a dialogue between two people.

Salespeople's orientations

The participants were asked about their search for a balance between the various facets of the investigated orientations, including customer-oriented profiles (#14), a desire to obtain learning (learning orientation) and achieving performance objectives (performance orientation) (#6), which are often linked. For example, #14 says:

The salesperson [...] is a person who meets needs. He intercepts real needs and identifies real solutions, even those not present in the catalogue. As a sales professional, I am not selling what I have to sell; I am selling what you need [...] it is indispensable.

#6 adds:

Over time, I probably also got into the competitive spirit of results, which certainly are a main driving force. Realising that you have succeeded allows you also to be among those who have a say, among those who can stand out.

Others (#10 and #20) also confirm that learning and performance are linked to each other. For example, #10 says:

The two always go hand in hand. Because if I have to sell a new product, I have to learn and professionalize. So, I don't think the two things can be absolutely separated.

Similarly, #20 confirms:

At the beginning, it was all “I have to sell – I have to sell.” It was the goal that the company gave me. Then, over the years, the goal has also grown: I understand that evolving also helps me become a professional figure built for the future, so, let's say that [...] I value both of them (learning and performance) equally.

As per the self-regulatory mode, many participants highlighted that besides the additional control and comparisons made possible by sales technology, the pressure put on the salesperson by the company is real and is defined as a “rule of the game.” For example, #12 says, “I carry out my activities mainly for myself and for my role and not because I know that I am assessed at the end.” Interviewee #20 adds to this, “The external focus prevails, in the sense that the entrepreneur [...] sets objectives and tells you ‘ok this month we must achieve these results.’” Finally, #17 clarifies that:

The internal thrust accounts for 80% of the work; for example, if you have to make a total number of appointments this year, maybe you are going to go that extra mile on some required KPIs, so I don't have to be worried. The rest, actually, comes from the choices you make. Each salesperson is ultimately like a small business, with its own budget and operating costs. It is clear that it works in a certain context, so, you have defined and agreed upon rules of the game.

Technology and the hunting orientation

The hunting orientation is connected to the customer approach, pre-sales and closing. It seems that technology, such as digital communication systems and the media, allows the customer to receive greater amounts of information before turning to the salesperson. For example, #1 shares that:

Approaching the customer is something that I enjoy a lot. I try to picture it, and I go to LinkedIn and Facebook to see if they have something they are passionate about, to find some details to break the ice, to find an avenue for engagement.

In fact, interaction and negotiation activities are quite different among IT and non-IT respondents. Those who work with IT present and demonstrate the customized product or solution through technological support, except in a case where the entire sales process takes place remotely, through various supports and platforms (#18). For example, #18 says:

We do not sell by going directly to the customer but through a platform for meetings and webinars, a technology platform for task sharing that helps us manage information about our customer [...] everything takes place remotely then, by phone or through sharing platforms.

In contrast, those who do not work in IT seem to prefer to use technology in general and in other stages of the sales process but not during negotiation or when receiving orders, so as to emphasize the element of interaction and personal trust between the salesperson and the customer (#2, #3, and #6). For example, #6 shares, “technology helps a lot, but in certain phases, I choose not to use it. [...] The moment of direct interaction, I generally manage it without technology.” Interviewee #2 adds:

In certain moments, I prefer face-to-face meetings. I could also use devices, the technology, but I consider it quite arid to show a digital catalogue of my product. I like to involve the customer both experientially and emotionally.

Confirming that, #3 states:

I would say that I am selling a complex product; therefore, we present it carefully, then make appointments, set the date, and show how the machinery works. [...] In those phases, honestly, there is no use of technology; 90% of customers want to try the machinery before buying it, which is very important.

Technology and the farming orientation

With respect to the farming orientation and the activities related to the customer relationship, many issues have emerged concerning the evolution of sales technology and the role of the salesperson. Some participants emphasize the impact of sales technology on the role and the profession, and they welcome the full and virtuous use of it. For example, #11 says, “[CRM is very important] maybe not for me personally but for the company absolutely yes, but in my daily life, I don't rely on that.”

Another important aspect of technologies, such as CRM, which support the relationship with the customer, is their correct implementation and timely update by sales professionals. This is perceived by the sceptics as a demanding task that only adds to the salesperson's many responsibilities. The sceptics also underscore the effects of ownership of human and relational capital on customer relations (#15), and the fact that this represents a further obstacle to coordination, especially in the case of turnover (#3). For example, #15 shares his view “[I understand the problem of] turnover, but if you want my CRM, you pay for it. Because the day I am no longer your representative, you have my CRM, my portfolio, my story.” And, #3 adds:

In the last two companies where I worked, they gave me a consolidated customer portfolio. [...] In this company, the promise [that I would get one] was made, but it was not kept. I must admit that I am struggling a bit but I am creating my own (customer portfolio).

These responses highlight how vital sales technology is in carrying out sales work, once the information system on the customer relationships has been structured. However, it seems that some salespeople (the sceptics) tend to personalize the relationship with customers. Therefore, they do not believe in the role that technology can play and they reject it; they see it as a form of invasion of their work, as a replacement for what they do.

Technology and time allocation: the ambidexterity orientation

With regard to the ambidextrous orientation, some interviewees claim that sales technology supports them in many aspects and phases of the selling process, prior to and after the sales. Many participants mention that CRM requires attention, time and resources, while ambidexterity seems to favor both hunting and farming. For example, #3 describes how “technology is useful to [...] organize your day [and] to analyse your work, your customers, and the market.” Adding to that, #6 comments:

There are elements of my work that I believe are greatly helped by technology. It is true that CRM takes some time, but it gives you updated and timely reports on customers [...]. As for the online catalogue, the tablet, these are all things that let you present in the best way. I think they are elements that support the sales.

General discussion

The aim of this study was to adopt the sales technology ecosystem perspective to explore the impact of salespeople's goal orientation and self-regulatory mode on their performance through sales ambidexterity (Lam *et al.*, 2019) and STI (Hunter and Panagopoulos, 2015). The authors use an exploratory research design with a qualitative approach

consisting of 20 in-depth interviews with salespeople from diverse industries to study the narratives and original meanings related to the above concepts and discuss their findings. In this process, this study makes useful theoretical contributions as discussed next.

Theoretical contributions

First, this study presented the sales technology ecosystem to the interviewees as a complex and dynamic set of technologies and tools that supports them in their sales work (Adomavicius *et al.*, 2007; Hunter and Perreault, 2007; Jelinek, 2013). In general, the perception of technology and STI has proven to be varied and heterogeneous because of both contextual and individual factors. In particular, the younger participants who work in larger organizations, in more competitive contexts and with IT, make extensive use of technology across the sales process. Within this group, there are differences from sector to sector; therefore, the importance of the contextual and individual dimension must be emphasized (Marshall *et al.*, 2012). For some of the interviewees, technology is an indispensable part of their work (Romàn *et al.*, 2018). Others perceive it as a reinforcing element but not a necessary one; others still emphasize its replacement effect as well as its threat (Cron, 2017) (#5, #8). Interestingly, all of these participants, despite the difficulties they have had with sales technology, acknowledge the added value it brings them, their company and their customers (Grove *et al.*, 2018; Singh *et al.*, 2019). It is also important to consider the differences in perception and the importance that companies pay to sales technology because of a discrepancy between the company and the salesperson in some cases (#3, #8 and #11).

Another important organizational aspect is that of activity reporting and control through technology (Bush *et al.*, 2007; Eggert and Serdaroglu, 2011) and how they are perceived as both excessive and as a way of demonstrating one's effort and commitment. The interviewees with high STI implemented, maximized and integrated the technology and tools made available by the company (#6, #17, #18 and #20). These participants, being young and working in competitive and high-level technological environments, perceive sales technology as a critical success factor, which encourages job innovation, thanks to further adoption and implementation of sales technology. Others (#14 and #15) stress the burden that these tools seem to add to their selling tasks. These participants, then, question the role of the salesperson (Cron, 2017) in building and maintaining customer relationships (Agnihotri *et al.*, 2017a, 2017b).

Next, this study explores the link between salespeople's orientations and STI. Many of the interviewees seem to show a high customer orientation (Hunter and Panagopoulos, 2015), a high goal orientation and a significant predisposition to adaptation and change. Many also show a strong awareness of the dual self-regulatory focus in the search for a balance between proactivity, the pressure of assessment, confrontation on the job and sales technology use (Han *et al.*, 2017). These elements appear to be linked to a positive STI, but a series of other contextual, sector-related and personal factors can contribute to either reticence or enthusiasm for sales

technology (Marshall *et al.*, 2012). According to previous research, individuals most likely to adopt sales technology show a particularly high goal orientation and a zest for continuous learning and demonstrating their competence (Jelinek, 2006, 2013); moreover, they also demonstrate self-regulation in their activities and use of sales technology (Han, 2017). Thus, the salesperson's orientations and the self-regulatory mode seem to contribute to STI, similar to ambidexterity, whose link with these concepts has already been established in the literature (Jasmand *et al.*, 2012; Vieira *et al.*, 2019). Such orientations and foci may provide interesting individual characteristics that will impact salespeople's likelihood of using sales technology to its fullest potential.

Finally, this study also examines the link between a salesperson's ambidexterity and STI, with regard to hunting (orientation and activities) and sales technology. Specifically, presentation and negotiation are accompanied by technology if the offering in question is itself of a technological nature (#1, #7 and #11). Furthermore, companies should be careful to not overlap them but to mutually strengthen them, thus enhancing both their marketing communication and the role of the salesperson (#5 and #10) (Marshall *et al.*, 2012). As for farming, the interviewees point to the positive and the negative aspects of activity reporting and CRM. In particular, updating the information system and CRM means building knowledge for the company, both from the point of view of the market and of customer information; it also implies additional monitoring and controlling of the activities of the salesperson. Some interviewees complain about feeling overwhelmed (#8), whereas others understand the potential of sales technology but are unwilling to dedicate any time or effort to it (#13 and #15). Several others, even when feeling frantic or fatigued, are happy to actively contribute to the adoption of these tools (#2, #3 and #6) (Cron, 2017).

Regarding sales ambidexterity, some interviewees claim that sales technology supports them in many aspects and phases of the selling process, prior to and after the sales, with both prospective and consolidated customers. In one case, technology imbues all stages of the sales process (#18), while in others, technology is present in the before and after stages, in a mix of exploration and exploitation activities supported by an integrated and leveraged sales technology, which seems to fade into the background the moment the sale is closed. The sale is often still seen as a critical moment, in which the main variables of trust and human contact make the difference (#3, #6 and #20). Overall, the findings show that a salesperson's ambidextrous balance between hunting and farming (sales ambidexterity) along with a broad and integrated use of technology (STI) allows him/her to dominate the sales process, allocate time to customers and build value (Agnihotri *et al.*, 2017a, 2017b; Grove *et al.*, 2018; Singh *et al.*, 2019). This signifies that the salesperson is optimizing both resources and opportunities (Yu *et al.*, 2013).

Particularly in today's sales context (Romàn *et al.*, 2018), sales technology is implemented with a twofold objective as follows:

- 1 to achieve short-term and seller-focused results, for example, how to generate a high level of sales and results,

in line with the transactional sales (Marshall *et al.*, 2012); and

- 2 to attain long-term goals, including helping customers achieve their goals (Hunter and Perreault, 2007).

Consequently, the contraposition of these paradigms and objectives to understand the correct approach to the market and the actual needs of the customer base suggests considering sales ambidexterity (Cuevas, 2018), together with STI, in relation to sales performance. In this aim, the authors of the present paper develop a typology of salespeople based on their levels of ambidexterity and responses to STI, which could be a useful tool for sales organizations. In particular, it could help them to classify their sales teams based on their readiness to embrace new sales technologies and allow them to develop suitable recruitment and training strategies based on this classification system.

Ambidexterity and sales technology infusion matrix

Ambidexterity seems to be generally widespread in the sample, except for participants who focus on just hunting or just farming. As shown in Figure 1, it varies based on the type of industry (especially in IT), role or age of the salesperson. Specifically, the interviewees working in the IT industry are either hunters (market developers) or farmers (in the industry for many years and having longstanding relationships in the sector). These participants seem to have their selling process well infused with sales technology, particularly, in the presentation and selling phases, as IT solutions require presentations and demos provided through the sales technology. These participants can be generalized into the category of *tech hunters or farmers*. Only one interviewee does not make use of technological tools: he has been working in fashion for many years and prefers to work the old way in a market he “knows perfectly.” He belongs to the category of *traditionalist hunters or farmers*.

As for ambidextrous salespeople who do not make use of technology or demonstrate elements of adversity, threat or scepticism, there are those, in product industries, who seem to have a more traditional way of conceiving sales. These salespeople, the *ambidextrous tech sceptics*, are heterogeneous in terms of age, industry and culture. In a sense, the presence of a high level of ambidexterity does not seem a necessary or sufficient condition for STI. The difference in STI could depend not only on the high goal orientation but also on the different endowment of capabilities, either on a personal or sector level, which probably limits full and consistent adherence to the sales technology ecosystem, resulting in a low STI. It is worth stressing, once again, the effects brought by the industry and social influence (Homburg *et al.*, 2010).

Finally, for *ambidextrous tech enthusiasts*, STI manifests through a very proactive attitude as well as the awareness of sales technologies' potential to empower the salesperson and benefit the customers and the company (Hunter and Panagopoulos, 2015). In addition, this category of salespeople makes use of sales technology both in the hunting and farming phases as well as in the approach and relationship with the customer. However, many choose not to use it during product presentation or sales, in the aim of having a less digital, and

more human, direct interaction with the customer. Interestingly, in this group, there is not much industry or generational homogeneity, but there is a great difference in terms of age and the type of markets and products. Furthermore, this category displays an impressive consonance in the perception and use of sales technology, associated with a great capacity to observe, react and change, as well as high goal orientation (learning and performance orientations both high) (Sujan *et al.*, 1994; Kohli *et al.*, 1998; Van de Walle *et al.*, 1999), critical thinking and great passion for the job (Hunter and Perreault, 2006). Next, the authors discuss the managerial implications of this typology of salespeople and other findings from this study.

Managerial implications

This study explores and reflects on the role of sales technology within the sales technology ecosystem perspective. The use of sales technologies in the sales process, and in general in the sales job, is linked to salespeople's orientations and ambidexterity, which appear to be relevant and under-investigated. The contribution brought by sales technology seems to be recognized in both hunting and farming sales activities. However, even for the most dynamic and tech enthusiast participants, salespeople–customer interactions remain mostly personal and tech-free by choice, as salespeople privilege the human, trust and emotional aspects of sales over the technological ones. As for farming, many participants manifested appreciation, enablement and infusion of sales technology, but they also sometimes felt undervalued and excessively controlled by their overexposure to sales technology. An additional aspect of interest and potential area for improvement is that of turnover, a theme that emerged in the interviews and deserves further attention, along with training and initialization.

This work proposes to consider sales technology not in reference to particular tools but as a whole, integrated with all the tools and supports and in an evolutionary logic, through this new perspective of the sales technology ecosystem (Adomavicius *et al.*, 2007). In line with previous literature (Jelinek, 2013), this perspective is proposed to encourage the use and maximization of the means made available by the SalesTech Landscape, for the benefit of sales professionals and organizations. Both the sector and the context evidently play a decisive role in the effective use of sales technology; therefore, it is important for companies to understand the importance of STI at an organizational and managerial level to improve and enable sales technology in all of the sales stages. Another aspect that emerges from the data is the recognition of the sales professionals' roles, even in data collection and processing, which, when aided by sales technology, allows greater value creation, sales performance, job satisfaction and commitment (Hunter and Panagopoulos, 2015; Román *et al.*, 2018).

Many of the salespeople interviewed show balanced orientations toward hunting and farming, so their ambidexterity proved to be a valuable resource, helping the company to face the modern and complex competition, consistent with the need to ensure the business' survival and superior performance (Cuevas, 2018). In sum, the challenge

that presents itself is not only to increase STI and allow salespeople to enter the sales technology ecosystem but also to teach them how to master the use of tools and the media to help them create value. This goal can be achieved by organizations through additional organizational commitment, dedicated training (Ogilvie *et al.*, 2018) and organizational encouragement of salespeople's goal orientation and self-regulatory mode through motivation, reward and social influence (Homburg *et al.*, 2010).

This approach would facilitate better data collecting and sharing and multiplication of the customer's touch point (Ogilvie *et al.*, 2018). This is important because sales technology allows for better-organized sales and customer services (Hunter and Perreault, 2006). Finally, salespeople should be directed toward these complex and virtuous behaviors, to respond to current market challenges (Singh *et al.*, 2019), to master sales technology and to approach the customer base in an ambidextrous way, thereby achieving the exploration and exploitation (Vieira *et al.*, 2019) of temporal, relational and technological resources.

Limitations and further research

This study makes many useful contributions but it also has a few limitations that future research could address. First, this study uses a relatively small sample of 20 participants (in-depth interviews) from a few industries in a specific cultural environment (i.e. Italy), which may limit the generalizability of the findings. Hence, future research could replicate this study in other cultural settings and industries, using larger sample sizes to obtain broader findings. Second, a qualitative approach was used in this study to explore the narratives and meanings related to the interviewed salespeople's orientations, selling modes and STI. Future studies could test the relationships among the concepts and variables using quantitative methods (e.g. surveys) for empirical validation.

Third, future research could also extend this perspective by focusing on other elements of the selling process (e.g. selling stages), different sales approaches (e.g. adaptive selling) and other individual and organizational characteristics. Fourth, this study uses STI as one of the possible ways in which salespeople interact with the sales technological ecosystem. Future research could explore other modes of sales technology usage (Limbu *et al.*, 2014) to extend this literature. Another point worth mentioning is that this study focuses on sales ambidexterity defined as hunting and farming, but there may be many other ways to overcome the trade-offs within the sales role (Panagopoulos *et al.*, 2020). Finally, future research could extend this study beyond individual salespeople by exploring the use of technology and the role of ambidexterity in sales teams and organizations (Yu *et al.*, 2013).

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