Service-sales ambidexterity: evidence, practice and opportunities for future research

Article (Accepted Version)

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Evidence, Practice and Opportunities for Future Research

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Abstract

Aligning the service-sales interface within and beyond organizational boundaries is worthwhile, yet many firms are not reaping the rewards of such practice. The managerial need for in-depth insights into the blending of selling and service delivery could be better informed through resolution of current open theoretical debates. This position paper extends the current knowledge base on the service-sales interface in three ways. First, we offer a synopsis of current scholarly progress on blending service delivery with sales and identify contextual conditions that foster effective service-sales ambidexterity. Second, turning to current practice, we use an empirical case study to demonstrate how a multi-national company strategically deploys online learning to bridge structural knowledge and skills gaps within its reseller network to build ambidextrous capacity in the channel and support solution selling. Complementing this human learning approach, we also explore recent advances in machine learning and their impact on the service-sales interface. Third, we blend these

academic and practice perspectives to offer a service-sales interface agenda that identifies directions for future research in terms of both the theoretical development of ambidexterity and defining the effective blending of technologies at the service-sales interface that enable ambidexterity in practice.

Key words: ambidexterity, sales, service, solution-selling, learning, artificial intelligence

Setting the scene

Nowadays, the notion of organizational performance has moved beyond attaining sales targets, service quality thresholds or average handling time as key indicators. The broadening key performance indicator palette reflects that customers expect an engaging experience across multiple touchpoints and solution offerings that cater to their needs. Purchase cycles and decisions are continuous and dynamically intertwined with service delivery and after-sales support encounters. As such, C-suite executives increasingly expect frontline service employees to actively contribute to sales targets, turning what used to be viewed as necessary cost units into profit generating operations. Conversely, sales associates are required to add service delivery to their role, frequently as part of a solution selling strategy. This is based on the rationale that employees who interact extensively with customers are uniquely positioned to be aware of customer needs and wants and cognizant of opportunities to extend offerings. In addition, there is accumulating evidence that involving partners in the distribution channel, again as part of solution selling (combining service and sales) is a worthwhile competitive strategy (Pelser et al. 2015). Thus, alignment of the service-sales interface within and beyond organizational boundaries can lead to increased company profits and growth levels (de Ruyter, Patterson, and Yu 2014).

The somewhat bleak reality, however, is that many firms continue to regard serving customers and selling as static, independent and structurally siloed activities (Yu, Gudergan, and Chen 2018). In addition, it is argued that adding sales metrics has the potential to backfire as sales attempts during service encounters have been reported to annoy customers and lead to employee resistance and decreased morale (Güneş et al. 2010). Also, the introduction of operational service-sales conversion strategies is often not flanked by offering employees the opportunity to acquire specific knowledge and skills needed for executing such strategies. For instance, a recent market survey (Accenture 2013) reveals that only a

small minority of companies have deployed systematic knowledge and skills protocols for assisting their frontline service employees in realizing sales opportunities. Few companies have deployed digital platforms and internal social networks to facilitate online learning, mutual perspective taking and overcoming employee resistance. Finally, performance metrics and rewards differ considerably between sales and services within the same company (Yu et al. 2018). So, there is still a pertinent managerial need to develop in-depth insights into how selling and service delivery activities can be blended across various company levels to reap the benefits of providing a consistently engaging customer experience.

During the past decade, emerging theorizing on service-sales strategies has been based on the notion of ambidexterity. A well-established concept within the domains of organizational strategy, innovation and learning, ambidexterity refers to the ability to perform seemingly conflicting tasks or pursue apparent disparate goals simultaneously (Gibson and Birkinshaw 2004). More specifically, a critical challenge for companies has been to balance the need to exploit existing capabilities and explore the potential of adding activities (March 1991). Hence, exploitation and exploration are identified as underlying dimensions of ambidexterity. Within the context of the service-sales interface, ambidexterity has been conceptualized at the individual and team levels. For instance, from the vantage point of frontline service operations, service delivery is considered as an existing foundational competency and sales as a dynamic activity to be explored. Beyond this individual level, ambidexterity has been identified both as a structural property by assigning tasks to differentiated organizational (service and sales) units and a contextual characteristic, which puts the emphasis on characteristics of the firm, such as intra- and inter-team support or cross-functional platforms (Mom, van den Bosch, and Volberda 2009).

Accumulating empirical evidence suggests that the ability to simultaneously deploy both capabilities results in increased performance levels (Lubatkin et al. 2006; Yu, Patterson,

and de Ruyter 2013). Conversely, there is a paucity of knowledge as to how to achieve and maintain a well-balanced combination of exploitation and exploration (Gupta, Smith, and Shalley 2006). Specifically, and in relation to the simultaneous pursuit of service and sales goals, three gaps in the literature can be discerned. Firstly, so far researchers have primarily focused on separate attributes of the service and sales capabilities and orientations, while only scant attention has been paid to theorizing about their common grounds and the potential this holds for combining service and sales activities as an interface, both at individual and collective (or organizational) levels (Jasmand, Blazevic, and de Ruyter 2012). A focus on the service – sales interface is important as ambidexterity does not result from the presence of service and sales capabilities but through the way in which these interact (Cao, Gedajlovic, and Zhang 2009). This is based on the premise that servicing and selling may not always be in competition for company resources and that their interface can be a value-adding factor. Therefore, we need to enrich our knowledge of contextual properties that facilitate a synergetic impact of both components of the service-sales interface.

Secondly, previous research has conceptualized service-sales ambidexterity primarily on employee orientations (e.g., service vs. sales orientations) and shared beliefs (e.g., climate perceptions (Jasmand, Blazevic, and de Ruyter 2012; Yu, Gudergan, and Chen 2018). In contrast to this general attitudinal perspective, service-sales aptitudes such as feasible service-sales blending practices and behaviors at the individual and team levels have received little research attention. Furthermore, it is not unequivocally clear whether the interface of servicing and selling should be interpreted as a capability outcome or whether it is in fact a capability implementation practice. For instance, Yu et al. (2018) focused on service-sales performance as an outcome measure of a cross-selling initiative climate, while Yu, Patterson and de Ruyter (2013) treated service-sales ambidexterity as a processual mediator variable. The ambiguous conceptualization of the service-sales interface hinders our observations with

respect to particular practices and limits our understanding of how to build service-sales ambidexterity. Little is known about structural development protocols that enable employees with different backgrounds and job roles to engage in both activities simultaneously. As Raisch and Birkinshaw (2008, p. 401) argue organizations need to 'continuously reconfigure their activities to meet changing demands in their internal and external environments'. For individual employees, whilst empowering them with knowledge and skills could help overcoming resistance and building self-confidence in the face of change, the specific contextual influences on sales-service ambidexterity is not fully understood requiring further exploration to identify potential contextual variables. Given the increased integration of actors in vertical distribution channels, this also applies to resellers and channel partners. In fact, there is a particularly pertinent need for research that identifies and tracks the process of how the uptake of learning impacts the formation of service-sales ambidexterity outside the boundaries of the firm and places it at the heart of the distribution channel.

Lastly, in addition to equipping frontline employees and channel partners with knowledge and skills, rapid advances in artificial intelligence (AI)-based technologies and machine learning hold the promise of building service-sales ambidexterity capacity. That is, to identify how AI and human labor can work together to facilitate the service-sales interface. As AI-powered chatbots are gradually taking over routine service requests, this frees up frontline employees to adopt the role of a trusted and knowledgeable advisor and focus on cross- and up-selling. Moreover, there is a range of AI functionalities that can help employees to classify customers and predict which solutions to offer based on historic data on for instance, sales and service cycles. Furthermore, natural language processing in combination with data on customers' personalities (e.g., IBM Watson's Personality Insights) can assist in adopting the most effective tone of voice when suggesting an up-sell solution during a highly personalized service experience. AI-powered contextual coaching can provide

recommendations on what information employees could share and when during service encounters (e.g., Oracle Sales Cloud). Currently, despite the developing technological ability, not much is known about the impact of AI on the service-sales interface. Theory-driven research is needed that focuses on how these smart applications disrupt current processes and perhaps lead to a more intelligent execution of the service-sales interface. This is particularly the case in professional services, such as, health and finance, where complex products are being sold and maintained over long time periods.

Turning these challenges into opportunities, the aim of this position paper is to extend the current knowledge base on the service-sales interface from three foci. Firstly, we offer a synopsis of scholarly progress on blending service delivery with sales at various levels and identify contextual conditions that foster effective service-sales ambidexterity. Secondly, we present an empirical case study that illustrates how a multi-national company strategically deploys online learning to bridge structural knowledge and skills gaps among its network of resellers and build ambidextrous capacity in the channel to support solution selling. In addition to human learning, we explore recent advances in machine learning and their impact on the service-sales interface. Finally, we conclude the paper by composing a service-sales interface agenda that identifies various directions for future research.

Knowledge base evidence

Over the last decade, the body of research on service-sales ambidexterity has focused on exploring service and sales as two distinctive, non-substitutable and yet interdependent activities (Rapp et al. 2017; Yu, Patterson, and de Ruyter 2015). While points of view on service-sales ambidexterity vary, researchers seem to converge and reach consensus that the end goal of both service and sales is to satisfy customers' needs. Moreover, from the wider strategic perspective of the firm, there is widespread agreement that this can best be achieved

through appropriately designed organizational processes and systems (Yu, Patterson, and de Ruyter 2013). Finally, the service-sales interface has been examined from two distinct referent points. On the one hand, scholars have explored how frontline service staff can be motivated and equipped to perform cross- or up-selling activities during their encounters with customers (e.g., Yu, Patterson, and de Ruyter 2013). Alternatively, research has examined how sales staff can be enabled to perform service-related activities (Agnihotri et al. 2017) and how service can be integrated as essential elements in solution selling (Rangarajan et al. 2018).

Regardless of which perspective is taken, a common finding is that ambidexterity has a positive impact on the customer experience and, therefore, on the performance of the organizational frontline. At the same time, challenges and concerns have emerged in previous studies with regards to the deployment of ambidexterity. For instance, the pursuit of sales activities during service encounters can have a detrimental impact on service levels and employee motivation (e.g., Aksin and Harker 1999). Furthermore, service staff being required to perform cross-selling has resulted in serious backfire where service employees made public complaints that they have been forced to cross- or up-sell unneeded products to customers. This has triggered a stream of research on frontline ambidexterity aimed at providing guidelines as to how firms can best deal with the dilemma and issues raised when staff are required to perform cross-functional tasks (Agnihotri et al. 2017).

Recent service-sales ambidexterity studies identify that two key elements may facilitate the interplay and combination of service and sales activities. They are characteristics of the organizational environment, such as specific processes and systems, and aspects related to individual employees. This echoes research on ambidexterity across other domains (e.g., strategy and innovation studies), which reports that research on building a firm’s ambidextrous capacity needs to extend to various levels in the organization (Yu,

Gudergan, and Chen 2018). Companies need to recruit, train and maintain employees who are willing and able to perform tasks across service and sales domains (Yu, Patterson, and de Ruyter 2015) and, both as a prerequisite and a consequence, companies need to deploy processes and systems that incentivize and recognize ambidextrous performance and cross-functional cooperation (Yu, Patterson, and de Ruyter 2013). Conceptually, this has resulted in the emergence of individual, structural and contextual ambidexterity.

Fundamentally, and with respect to individual ambidexterity, there is an ongoing debate in the knowledge base regarding the (in)compatibility of service and sales activities at the level of the employee, which lies at the heart of frontline ambidexterity. Service provision is often viewed as helping customers satisfy their needs, and this orientation tends to be welcomed by customers. Yet, sales is often associated with pushing customers to purchase products for which they do not really have a need. As a result, it is often implied that service and sales staff need to possess different qualities and capabilities to perform service or sales tasks well. Indeed, role stress may occur due to the psychological adjustment required to move from "giver" to "taker". Therefore, one position in the literature is that different capabilities should be sought to meet the dual demands of ambidexterity and combine them at higher order (e.g., team) levels (Rapp et al. 2017).

Alternatively, it is suggested that the service-sales interface requires a "both/and" rather than an "either/or" mindset in order to be able to perceive services and sales as non-conflicting activities (Jasmand, Blazevic, and de Ruyter 2012); "*true ambidexterity is about having the people within the organisation who have the mindset, skills and maturity to respond positively to different circumstances*" (qtd. in MacCormick and Parker 2010, p. 1). So, this position is rooted in the view that service and sales tasks can be associated with a shared set of capabilities, such as diagnostic behavior, interpersonal adaptation, interest in the customer's perspective and paying attention to what customers need (Evans, Arnold, and

Grant 1999; Gwinner et al. 2005). In line with the notion of ambidexterity as both an explorative and exploitative activity, employees may possess the ability to perform service tasks routinely, while freeing up cognitive and affective resources for identifying sales opportunities.

In addition to individual employees' ability and efforts to achieve service and sales goals simultaneously, organizational structure, processes and systems are identified as crucial facilitators in the building of ambidextrous capabilities. Many firms have created structures that have separate teams focusing on service or sales tasks. This represents a traditional deployment of organizational ambidexterity, namely structural ambidexterity (Gupta, Smith, and Shalley 2006). This type of structural design minimizes the conflict of pursuing service and sales at the individual level, since staff within one business unit only focus on pursuing one goal, service or sales. Alternatively, Gibson and Birkinshaw (2004) argue that, through process and system design, an organization can build a supportive and trusted environment that motivates and enables employees to direct their efforts on performing different tasks. They refer to this as contextual ambidexterity. For example, empowerment of staff allows them to make adjustments as to how they think they can perform their dual service-sales roles most effectively. Such a context allows and encourages employees to shift between different tasks easily, thus simultaneously scaffolding individual employee-level ambidexterity. Characteristics of organizational context such as transformational leadership, empowerment, and team support have been shown to have a positive impact on achieving service-sales ambidexterity (Yu, Patterson, and de Ruyter 2013; 2015). Contextual ambidexterity is multilevel in nature. It can be individual differences in the perception of the overall (organizational) environment. That is, different signals are perceived by different staff. It can also be a collective perception of the environment. That is, individual perceptions of the

environment are aggregated to the group or organizational level (Yu, Patterson, and de Ruyter 2013).

Extending contextual ambidexterity beyond the organizational boundary, there is an increasing need for exploring the service-sales interface in the context of the distribution channel, especially given the importance of solution selling. Taking the high tech sector as an example, there is a drive to offer solutions to end users that combine the (now usual) bundles of hardware and software with added-value services (e.g., configuration, hiring, recycling options). For high tech vendors, the largest share of solution selling is done through reseller channels. In consequence, this places increased demand on resellers within the channel to be ambidextrous in terms of their service and sales knowledge and skills. Vendors seek to support and enable their resellers by systematic provision of services and sales education, which is usually incentivized to recognize higher levels of a reseller's ambidextrous performance. So that resellers can better able serve the needs of the end user, whilst at the same time achieving solution selling revenue targets for the vendor. We explore this extension of contextual ambidexterity beyond the organizational boundary in the next section through an empirical case study from the high-tech sector.

Current Business Practice: Human Learning

A FT100 global company operating in the high-tech space sought, as a strategic imperative, to enable the resellers in its distribution channel to move from a primarily product sales focus to a solution selling focus. Prior to this the reseller channel were experienced and educated in selling from a portfolio of products, latterly with some selling of service plans and facilitating, rather than delivering, after-sales service support. A switch to solution selling moved the focus away from the portfolio to a combination package where services were a key part. This focus on solutions required resellers to be ambidextrous through building a

combination of sales and services knowledge and skills. The company recognized the need for training to achieve this. Through their enablement program, the company were able to deliver both online selling (e.g., 'steps to the sale' or 'identifying customer pain points', 'competitive landscape charting') and service delivery ('after-sales scenario analysis', 'service plan value propositions', 'customer complaint and query handling') modules for self-directed learning. These modules were associated with certifications (basic and advanced levels) in the key areas of: Business Analytics; Cloud Computing; Collaboration Platforms. All resellers had target solution selling revenues to achieve over the 12 month period. The overall objective of the analysis is to evaluate the effectiveness of this strategic change. That is, did the enablement strategy drive service/sales ambidexterity through the online platform and thus lead to resellers reaching or exceeding their solution selling targets?

The dataset comprised a total of 4,933 resellers enrolled on the enablement program (during 2016) that had completed modules online. Certifications were achieved through successful completion of 8-12 modules. The reseller organizations were all SMEs (ranging from 1-285 personnel). Certification data was recorded over the 12-month period. Resellers were classified according to whether they were 'below target', 'on target' or 'above target' in terms of their actual and target solution selling revenue. Profits and ROI were calculated based on the cost per reseller of enablement provision and solution selling revenue allocated to three core areas. Actual revenue figures are not presented as they are commercially sensitive (instead, ROI is presented as a percentage).

To determine the effectiveness of the enablement strategy we turned to predictive modelling. Specifically, we used Exhaustive CHAID (a decision tree algorithm), which allowed us to examine the relationships between the type of certifications and solution selling revenue. That is, this analysis enabled us to predict whether resellers would achieve their solution selling revenue targets or not based on the enablement options that they took (i.e.,

achieving certifications). Utilizing the Chi-square independence test, Exhaustive CHAID (automatically) identifies the rule (i.e., which certification type is the best predictor) for maximizing differences between classes with respect to the target variable (i.e., classification of resellers into 'below target', 'on target' and 'above target' on solution selling revenue). Exhaustive CHAID splits the data multiple times – that is sub-groups are identified as different to one another on a predictor variable, then on another predictor variable and so forth. These splits can be thought of as steps that together construct the service and sales learning pathways linked to the (non-)achievement of solution selling targets. A split sample validation procedure was used to build the learning pathways model (with a training sample of 975, and test sample of 3958). Of the training sample there were: 'below target'=390 (40%); 'on target'=247 (25.3%); 'above target'=338 (34.7%)). Of the test sample there were: 'below target'=1641 (41.5%); 'on target'=1023 (25.8%); 'above target'=1294 (32.7%)). The overall correct classification match for the final model was 66.2% accuracy (risk=36.8%). During the analysis, the key predictors identified in determining the learning pathways were Business Analytics Service and Sales certificates, Collaboration Platform Service and Sales certificates, Cloud Computing Service (but not Sales) certificates. The number of resellers achieving certificates in these areas is displayed in table 1.

PLEASE INSERT TABLE 1 ABOUT HERE

The outcomes of this analysis provide a strong indication that ambidexterity in terms of learning (achieving service and sales certificates) delivers the highest return from those participating resellers within the distribution channel. Whilst those who fill in the service gap by following a learning pathway that focuses on the achievement of service certificates alongside their existing sales expertise are 'on target'; it is those that follow an ambidexterity pathway in terms of cross- and up-skilling in both sales and service areas that are 'above target' in terms of their solution selling revenues and deliver the highest ROI. To illustrate

this the pathways identified for the ‘below target’, ‘on target’ and ‘above target’ reseller groups are as follows, linking learning with ROI%.

Resellers in the ‘below target’ group show that despite participation in the enablement program the majority had not achieved certificates in the key areas. The analysis confirmed this lack of achievement in the two most likely pathways for this group to follow (figure 1). The first pathway comprised no certificates achieved in two key drivers (Business Analytics Service certificates, $\chi2=364.360$, adj.p=0.000; Cloud Computing Service certificates, $\chi2=16.064$, adj.p=0.000), with a probability of being on this pathway of 0.71 (N=1180). The second pathway comprised basic level certificates achieved in Business Analytics Service ($\chi2=364.360$, adj.p=0.000) but no Cloud Computing Service certificates ($\chi2=25.887$, adj.p=0.000), with a probability of being on this pathway of 0.50 (N=279). The ROI to the company of their resellers following these two pathways is -629.9% and -319.4% respectively.

PLEASE INSERT FIGURE 1 ABOUT HERE

Resellers in the ‘on target’ group showed more attainment of certificates but less variety. That is, this group had a tendency to focus more on achieving service certificates. This is perhaps demonstrative of resellers attempting to ‘fill gaps’ in their service knowledge in response to the solution selling initiative, being traditionally sales-focused experts. This could be indicative of the variety of paths available within the enablement program or that this group are the most ‘in transition’ and therefore trying to find the best way forward to develop. Two prominent paths could be identified (figure 2). Both paths shared the same ‘root’ starting with achievement of Business Analytics Service (advanced) ($\chi2=364.360$, adj.p=0.000) plus Cloud Computing Service certificates (basic) ($\chi2=93.607$, adj.p=0.000). This root path then split ($\chi2=12.195$, adj.p=0.001) into (a) resellers who had achieved

Collaboration Platform Service (basic) certificates (probability of following this pathway=0.50, n=77, ROI 577.8%) and (b) those who had not achieved Collaboration Platform Service certificates (probability of following this pathway=0.48, n=169, ROI 179.5%). The ROI being considerably larger for those who achieved this third set of Service certificates. However, it is also noteworthy that it was this 'on target' group that the model had most error in classifying correctly as they displayed more distribution across the various pathways than the other two groups – an issue that we will return to later.

PLEASE INSERT FIGURE 2 ABOUT HERE

Resellers in the 'above target' group showed both more attainment and more variety in terms of both sales and service certificates. The three most prominent paths for this group are displayed in figure 3. These paths share the roots of Business Analytics Service certificates (advanced) and Cloud Computing Service certificates (advanced), but are then split on Collaboration Platforms Sales and Business Analytics Sales certificates. The ROI on all three of these paths are considerable (1045.4%, 915.0%, 724.5%).

PLEASE INSERT FIGURE 3 ABOUT HERE

However, the real power of this analysis lies in how it can inform the application of current and future enablement strategy in terms of ambidexterity. From a diagnostic perspective, it can identify those that are following what should be profitable pathways but that for some reason are not reaching their targets. Whilst this may only involve small numbers of resellers, this type of intervention may help in retention and provide quick-wins for the company. This analysis also provides a baseline model for application to other and future channel partners. Thus, from a prescriptive perspective, applying this model to the ongoing scoring of partners participating in the enablement program could be used to identify particularly profitable groups, or, perhaps more importantly, identify those that have the

potential to be more profitable and providing guidance to those groups in terms of their enablement pathways. The model presented here identifies that there is not one but several potential profitable paths, providing more variety and ability to align recommended paths with the reseller company, in the true spirit of ambidexterity.

Perhaps the most inspiring implication of this case study is in how human (i.e., reseller) learning can be integrally supported by machine learning. That is, how the combination and automation of descriptive, predictive and prescriptive analytics of human learning can be applied in intelligent fashion. For example, 'red flag' identification of resellers on non-profitable pathways leads to tailored recommendations to move them to a profitable pathway. Or how 'on target' resellers predicted as having the potential to be more profitable can be encouraged to move to pathways that help realize this potential through automated (i.e., non-human) and, hence, responsive and timely interventions. This capability is certainly available and implementable, albeit currently at significant cost (but perhaps not in the near future as the technology becomes rapidly accessible). In the next section, we identify and detail developments in machine learning and their applications.

Current Business Practice: Machine Learning

As technological innovations are profoundly affecting the off- and on-line customer experience, the deployment of machine learning and artificial intelligence (AI) has taken center stage. Emerging business practice indicates that machine learning has the potential to further shape the service-sales interface. Fueled by access to Big Data, and across a wide range of industries (e.g., financial services, healthcare), digital platforms (e.g., Amazon, eBay) and in-home assistive voice technologies (e.g., Alexa), AI applications are creating a more personal shopping and service experience for customers. Ahead of the AI-curve (and perhaps avant-la-lettre), Köhler et al. (2011) explored how an AI-powered chatbot can

function as an ambidextrous virtual frontline agent. Yvette, depicted as a Warhol pop-art character, not only reacts to service requests, but also proactively identifies opportunities for cross- and up-selling on the website of a large financial services provider. The results of the study, conducted among novice financial customers, show that both interaction style (i.e., reactive vs. proactive) and content (e.g., functional vs. social) of the online agent significantly influence both sales and service performance. Nowadays, machine learning is powering many similar examples of financial coaching and advisory services. In addition, the service-sales interface is influenced by three additional developments.

Firstly, and following from our analysis of learning behavior as a basis for developing ambidexterity and ultimately performance, machine learning routines enable an increase of the scale and scope of predicting the ROI of employee or re-seller training. This allows for automated and real-time monitoring and the development of service-sales performance KPIs (replacing the manual integration and clean- up of various types of data, as used in our empirical example). That is, performance measures that are based on recognizing service and sales components of solution selling. Furthermore, using AI as an analytical facilitator of the service-sales interface opens up the possibility of running sensitivity analyses with regards to the content and format of employee training. More informed predictions of channel partners' ability to combine service provision with selling will ultimately result in an increased willingness to implement solution selling as a marketing strategy with their customers.

Secondly, AI can fulfil a central role in a firm's acquisition strategy. A case in point is Australian online retailer RedBalloon who leveraged 'Albert', an AI-based digital platform that analyses social and paid media channels (Sutton 2018). Its algorithms combine this with an assessment of internally available data on transaction and interaction history and develop more effective marketing campaigns. This enabled the company to not only decrease the cost of acquisition substantially but also identify and serve 'hidden' (micro) segments among the

company's customer base with hyper-tailored offerings, resulting in increased customer satisfaction levels. Consistent with the focus on training, Albert leverages what he (it) learns and continues to optimize the ROI of the company's marketing strategy. Importantly, the platform's focus is primarily on providing an engaging service experience and the relevance of the brand to the relationship and lead nurturing, rather than on transactions and channeling customers through the sales funnel. Predictive analytics allows Albert to speak to individual customers differently. As a result, a first-time visitor may see information about a range of services available to them and, with optimal timing, questions will be posed to further optimize an engaging service experience. Ultimately, a dual focus on service and sales results in unprecedented conversion rates in, for instance, Facebook campaigns (Sutton 2018).

Thirdly, and within the context of the day-to-day operations of the organizational frontline, AI is deployed to further optimize conversational content, an aspect that is vital on the cross-section of service delivery and sales (e.g., Salesforce Einstein). Whether it is during real time interaction between customers and a chatbot or as a tool to support customer-employee interactions, AI can identify sales opportunities as service solutions based on conversational patterns and the general direction that an interaction is taking and can review contact history, incorporate customer profile information, suggest questions, the timing of providing certain information and personalized costings and offerings. An AI algorithm can advise what an optimal discount rate is for a particular offering, or suggest the propensity score for a particular customer to accept an offer, taking into account specific aspects of past deals with similar customers. As such, an AI-powered service-sales interface can be scaled to a large volume of customer contact across omni-channel touchpoints.

Future research opportunities

Based on our review of the service-sales ambidexterity knowledge base and its current and emerging practices we identify a number of pertinent opportunities for future research.

A first avenue for future research would be to consolidate conceptual development by empirically investigating whether differences exist between service-sales and sales-service ambidexterity or whether flipping the reference point is inconsequential with regards to the impact on key performance variables. In our empirical case on solution selling, we assessed whether the exploration of service capabilities could effectively be added to the sales capabilities of the reseller network. Future research needs to corroborate whether this works as effectively for solution selling by the service frontline (e.g., in financial services) and whether there are differences in factors that drive ambidexterity. In this way scholars, as well as practitioners, may be better informed about strategic choices and, for instance, the deployment of human and or machine learning platforms.

A second theme that warrants further research is the notion of ambidexterity within the broader context of a service interface strategy. For instance, Rapp et al. (2017) argue that the key distinction between (service-sales) ambidexterity and the sales-service interface is that the dynamic capability of (service-sales) ambidexterity, at individual and group levels, is nested within the sales-service interface of an organization. At the same time, ambidexterity has also been studied at the organizational level (He and Wong, 2004; Raisch and Birkinshaw 2008). Moreover, there is very little research that has extended the notion of service-sales ambidexterity as a dynamic capability of the distribution channel.

Thirdly, with regards to levels of operational measurement, many studies have adopted a multiple level lens to the study of ambidexterity with regards to service delivery and selling. However, the majority has adopted a top-down approach to assess the impact of the organizational context on ambidexterity. More work is needed that evaluates bottom-up

effects, i.e., assesses how lower level factors such as individual attitudes and behaviors may trigger the development of (service-sales) ambidexterity at the higher level of workgroup, business unit and firm (Hitt et al. 2007). Study of the upward influences within different contextual configurations (i.e., teams, units, firms, and channels) may enrich the understanding of the complex dynamics of ambidexterity on the organizational bottom-line.

Fourthly, and departing from the assumption that ambidexterity is a capability, we need to further explore how (human) learning that is scaffolded by technological platforms builds service-sales alignment effectively. In our empirical case study, we illustrate how an empirical assessment of learning behavior impacts solution selling performance by channel partners. Our results reveal that there are several learning routes that lead to effective solution selling. More research is needed to explore productive pathways of learning to revenue (or other outcomes) and compare deviant versus innovative learning practices in reference to their effect on ambidexterity. These insights need to be complemented by an analysis of learning attitudes and the identification of boundary conditions that foster or hinder effective ambidextrous capacity building. Furthermore, there is a need for more in-depth insight into the role of learning technologies and platforms in providing effective (rather than limiting) scaffolding for ambidexterity.

Fifthly, with regards to machine learning platforms, there is a pertinent need to start a body of research that examines how AI can support the service-sales ambidexterity. This could be in reference to employee learning, for instance, by offering guidance on learning uptake by providing individual and dynamic learning roadmaps. Such an AI-powered recommender system could be flanked by a community platform on which users review their learning experience and the impact it has had on their performance. AI could be deployed to support such a platform through an incentive system (Keeling et al. 2013). In this way, valuable feedback could be obtained or ineffective learning trajectories could be flagged.

Finally, another direction for scholarship would be to explore the degree to which smart technologies may substitute human agents and with regards to what capabilities. In this way employees could be freed up to handle more rewarding tasks. Alternatively, future research could identify the ways in which AI can complement or assist employees in being more ambidextrous. For instance, by identifying the timing of optimal conversion points and/or incorporating customer contact history in the conversation to scale up personalized content. Future research should also be cognizant of employee resistance and so-called algorithm aversion in determining desired, rather than optimal, levels of human control. The deployment of intelligent technology on the organizational frontline is often dynamic and needs to be assessed from a longitudinal point of view, using multiple measurements and reciprocal associations to obtain a valid picture of its ROI and its impact on the service-sales interface.

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	Business Analytics					
	Service Certificates			Sales Certificates		
	No Certs	*Basic*	*Advanced*	*No Certs*	*Basic*	*Advanced*
Below Target	1574	356	101	1650	305	76
On Target	456	358	456	535	415	320
Above Target	293	226	1113	364	386	882
	Cloud Computing					
	Service Certificates			Sales Certificates		
	No Certs	*Basic*	*Advanced*	*No Certs*	*Basic*	*Advanced*
Below Target	1829	143	59	1905	119	7
On Target	710	257	303	906	275	89
Above Target	501	175	956	735	381	516
	Collaboration Platforms					
	Service Certificates			Sales Certificates		
	No Certs	*Basic*	*Advanced*	*No Certs*	*Basic*	*Advanced*
Below Target	1895	113	23	1881	133	17
On Target	880	163	227	990	174	106
Above Target	745	208	679	886	272	474

Table 1: Number of resellers achieving certificates in key areas

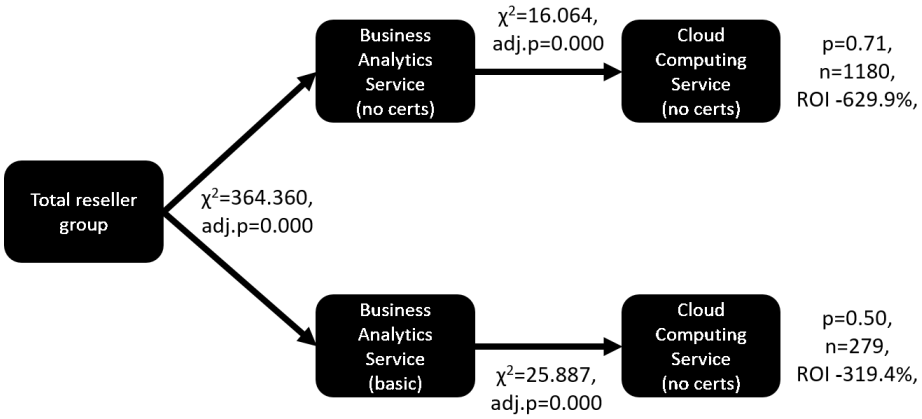

Figure 1: Pathways of the ‘below target’ group of resellers

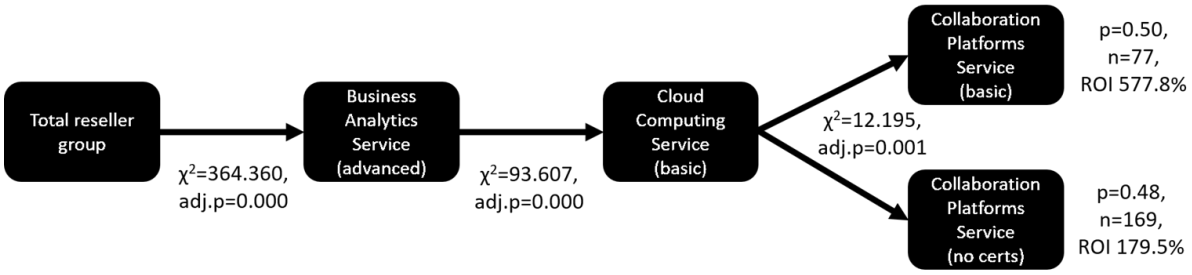

Figure 2: Pathways of the ‘on target’ group of resellers

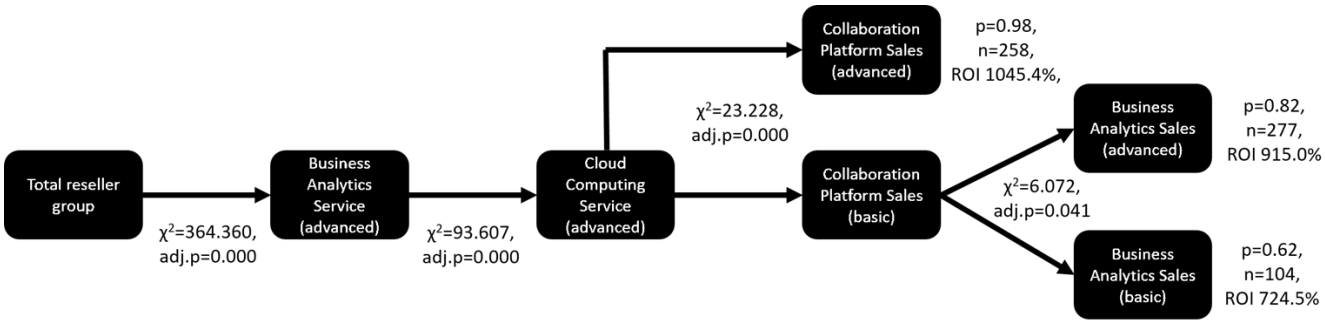

Figure 3: Pathways of the ‘above target’ group of resellers