
How to evolve towards Organizational Ambidexterity: Lessons from Basque Small and Medium Enterprises in Customer-based Innovation Contexts

Customer-based innovation (CBI) contexts can facilitate the journey from exploitation to exploration in SMEs in order to evolve towards organizational ambidexterity. However, the transition towards ambidexterity is not an easy journey and managers deal with different tensions regarding the balance between explorative and exploitative processes. The paper presents an inductive research, based on the in-depth analysis of four Basque innovative SMEs that have been able to develop an organizational ambidexterity strategy in CBI contexts. In this attempt, first, we contribute to the theory identifying the specific risks associated with the transition towards ambidexterity in SMEs. Second, we provide a qualitative study to understand how exploitation transit through ambidexterity can be done successfully and finally, we propose some lessons to help SMEs in this transition period.

Los contextos de innovación basada en el cliente (CBI) pueden facilitar el viaje de la explotación a la exploración en las pymes para evolucionar hacia la ambidestreza organizativa. Sin embargo, la transición hacia la ambidestreza no es un viaje fácil y los directivos gestionan las tensiones derivadas del equilibrio entre los procesos de exploración y explotación. El artículo presenta una investigación inductiva, basada en el análisis en profundidad de cuatro pymes innovadoras vascas que han sido capaces de desarrollar una estrategia de ambidestreza organizacional en contextos CBI. En este intento, en primer lugar, contribuimos a la teoría que identifica los riesgos específicos asociados con la transición hacia la ambidestreza en las pymes. En segundo lugar, proporcionamos un estudio cualitativo para comprender cómo el tránsito de explotación a través de la ambidestreza se puede realizar con éxito y, finalmente, proponemos algunas lecciones para ayudar a las pymes en este período de transición.

Bezeraoan oinarritutako berrikuntza-testuinguruek (CBI) erraztu egin dezakete ETEen ustiapenetik esploraziorako bidaia, antolaketa-ambidestrezarantz eboluzionatzeko. Hala ere, ambidestrezarako trantsizioa ez da bidaia erraza, eta kudeatzaileek tentsio desberdinei egin behar diete aurre esplorazio- eta ustiapen-prozesuen arteko orekari dagokionez. Artikuluak indukziozko ikerketa bat aurkezten du, CBI testuinguruetan antolaketa-ambidestrezako estrategia bat garatzeko gai izan diren lau euskal ETE berritzaileen azterketa sakonean oinarrituta. Ahalegin horretan, lehenik eta behin, ETEetan ambidestrezarako trantsizioarekin lotutako arrisku espezifikokoak identifikatzen dituen teoriari laguntzen diogu. Bigarrenik, azterketa kualitatibo bat eskaintzen dugu, ambidestrezaren bidezko ustiapen-igarotzea arrakastaz nola egin daitekeen ulertzeko, eta, azkenik, ETEei trantsizio-aldi horretan laguntzeko ikasgai batzuk proposatzen ditugu.

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Keywords: organizational learning ambidexterity, customer-based innovation, small and medium-sized firms, CEO.

Palabras clave: aprendizaje organizativo ambidiestro, innovación basada en el cliente, pequeñas y medianas empresas, director/a general.

JEL Codes: O36, M14, O32

Entry data: 2023/11/17

Acceptance data: 2024/01/11

1. INTRODUCTION

Ambidexterity refers to the capacity to exploit and align current business operations while simultaneously enabling the organization and its employees to adapt to changes in the environment (Gibson & Birkinshaw, 2004). Organizational learning ambidexterity (OLA) is defined as the firms' ability to engage in both exploitative and exploratory learning simultaneously (O'Reilly & Tushman, 2008; Chang *et al.*,

2011). Firms need to be able to promptly identify gaps to capture new niche market segments, which requires the development of both exploitation and exploration organizational learning strategies (Kafetzopoulos, 2020). However, achieving the optimum ambidextrous balance involves important tensions that underpin the effectiveness of exploratory and exploitative learning (Wang & Rafiq, 2009).

The implementation of these divergent learning approaches poses specific challenges for small and medium-sized enterprises (SMEs) due to a common lack of resources and a prevalence of informal structures (Lubatkin *et al.*, 2006). Following Cegarra-Navarro *et al.* (2011), SMEs more often engage in exploitative rather than exploratory learning, which can lead to a reduction in the performance. Collaborations are important sources of innovation and help reduce risks and lead times of product development while enhancing flexibility, product quality, and market adaptability (Tether, 2002; Chung *et al.*, 2003). Specifically, customer collaborations allow SMEs to exploit their original innovation in the short-term and consolidate their innovation path in related business (Alcalde & Guerrero, 2016). In this process, the role of managers in encouraging and influencing the alignment of knowledge exploitation and exploration within an organization to avoid organizational inertia is critical (Hannan & Freeman, 1984; Milliken & Lant, 1991). Given that the study of OLA in SMEs (Doern *et al.*, 2019; Morgan *et al.*, 2020) remains a pending and unsettled issue, this paper endeavours to contribute to the debate, giving voice to the CEOs as they are considered significant drivers of ambidextrous strategies (Zuraik & Kelly, 2019).

This inductive research, based on the in-depth analysis of four case studies, seeks to further our understanding of how CEOs have been able to develop an OLA strategy in SMEs operating in customer-based innovation (CBI) contexts. In this attempt, first, we contribute to revisit the Wang and Rafiq (2009) framework, theoretically identifying the specific risks that may emerge in SMEs following a CBI strategy, during their transition towards ambidexterity. Second, in response to Costanzo (2019) call, we provide a qualitative study to understand how exploitation transit through ambidexterity and propose a set of lessons that allow SMEs to lead this transition. In this sense, we enrich Rincon *et al.* (2022) study as we show how cooperation with external sources of knowledge (customers) can promote the development of innovation. Finally, the paper contributes to the debate regarding the usefulness of the deliberate strategy perspective (Mintzberg & Waters, 1985; Zhou *et al.*, 2021) in the promotion and achievement of OLA.

The remainder of this paper is structured into six sections. Section 2 and 3 provide the theoretical background to identify the specific risks that SMEs following a CBI strategy face during the transition to ambidextrous strategy. Section 4 describes the data and methodology. Section 5 focuses on the key findings of the four case studies, and section 6 includes the discussion of the findings. Finally, section 7 embodies the contributions, limitations, and future lines of research.

2. AMBIDEXTERITY AND CUSTOMER COLLABORATION IN SMES

Following Tian *et al.* (2021), ‘firms seeking to protect their operational competence are likely to engage in exploitative learning capabilities’ (p. 430). Nonetheless, in addition to responding to existing conditions through the refinement of current technologies for existing customers, the promotion of innovation to meet as yet unknown needs and conditions—in other words, explorative activities—is required to enhance organizational competitiveness (Lubatkin *et al.*, 2006). Indeed, adopting both exploitative and explorative learning strategies gives SMEs greater advantage, compared to the adoption of just one strategy (Tian *et al.*, 2021). Such ambidexterity also demands managing and engaging exploitation and exploration paradoxical behaviours (Koryak *et al.*, 2018). Top management are challenged to balance both forms of learning. Moreover, understanding how this process of maintaining existing streams of business while generating new innovations that help the business thrive is essential for gaining strategic insight (Zhou *et al.*, 2021).

According to previous literature (Zimmermann *et al.*, 2015; Alcalde-Heras *et al.*, 2019), cooperation strategies with external agents seems to be a key factor for successfully implementing ambidexterity in SMEs. This inter-firm cooperation could be based on either exploitation or exploration strategies (Zimmermann *et al.*, 2015), include stocks of abundant resources, and strongly support practitioners in managing exploitation-exploration tensions and thereby facilitate the attainment of ambidexterity (Cao *et al.*, 2009; Chang *et al.*, 2011; Alcalde & Guerrero, 2016).

In this sense, literature stresses the role of customer cooperation on firm ability to engage in explorative strategies. Thus, customer interactions are expected to be more directly related to problem-solving and will help firms to exploit better their current knowledge pool and search for new product solutions (Tether, 2002; Belderbos *et al.*, 2006). Additionally, collaboration with clients is especially keen on getting market information and, in some cases, products are custom designed to a particular customer’s specific needs that lead to more successful innovations (Amara & Landry, 2005; Faems *et al.*, 2005; De Massis *et al.*, 2018). Statsenko and Zubielqui (2020) found that customer cooperation involve trust, information exchange and joint-problem solving, which encourage a firm’s ability to scan and use information and knowledge from diverse sources and develop ‘cocreation capabilities’. These cocreation capabilities work as dynamic capabilities and enable a firm to sense, shape and seize opportunities, and recombine external and existing resources (Teece, 2007) to broaden their product range and expand to other industry markets.

The usefulness of CBI has been evidenced at both observable and more latent levels (Anning-Dorson, 2018; Chang *et al.*, 2022). Customers’ feedback and insights can lead to ideas for new innovative and useful services and expands the understanding of users’ values (Kujala, 2008). However, such benefits depend on how that engagement is managed (Kristensson *et al.*, 2008). Kristensson *et al.* (2008) devel-

oped a conceptual framework involving the key strategies for large firms to successfully engage customers in the co-creation of new technology-based services. Given the scarce resources and idiosyncrasy of SMEs, successfully managing the innovation process relies on deep collaboration with key agents to develop sustainable shared innovation dynamics (Iturrioz-Landart *et al.*, 2015) and to establish SMEs' innovation autonomy over time (Iturrioz-Landart *et al.*, 2021).

However, as posited by Ahn *et al.* (2015), SMEs face different barriers when developing successful collaboration strategies. SMEs capacity to engage in effective collaborations mainly depends on the level of accumulated prior knowledge (Cohen & Levinthal, 1990). SMEs with less intensive R&D capacity may not be able to exploit external knowledge efficiently (Rosenberg & Steinmueller, 1988). Difficulties in recruiting highly skilled workers, in changing organizational cultures, and in finding and interacting with external partners may hinder collaboration (Lee *et al.*, 2012). Further, the limited ability to barter technology assets make it difficult for SMEs to establish symmetric relationships with large established firms (Minshall *et al.*, 2010; Narula, 2004). Finally, SMEs may find it hard to ignore customers' requests for joint innovation, particularly from customers who are important for the SMEs' survival (Nijssen *et al.*, 2012). Confronted with demands from dominant customers, SMEs may feel forced to comply, due to reasons other than explorative learning, which reduces the strategic and long-term effectiveness of the collaboration.

Thus, engaging explorative in addition to exploitative learning can be facilitated by cooperation with customers, but at the same time, SMEs operating in those contexts face contradictions and trade-offs associated with engaging explorative additionally to exploitative innovations (Andriopoulos & Lewis, 2009).

Indeed, the transition towards ambidexterity is not an easy journey and managers deal with different tensions regarding the balance of explorative and exploitative learning processes. Indeed, exploitative learning primarily encompasses adaptive, organization-based learning, often in a convergent process, whereas exploratory learning largely entails generative, individual-based learning, often in a divergent process (Wang & Rafiq, 2009). Following these authors, three organizational learning tensions can occur in the pursuit of ambidexterity. The first tension focuses on the extent of newness of the knowledge involved in the learning process and is represented by a generative-adaptative learning dilemma. The second is related to an organization's ability to expand current thinking frames, stressing both divergent and convergent learning tension. The final tension emphasizes the need for a learning integration process, presenting strain between individual and organizational learning dynamics.

However, there is a need to understand how these tensions operate in SMEs that are following a CBI strategy and which could be the specific risks that emerge

when these SMEs try to achieve ambidexterity. Thus, in the next section, we aim to theoretically identify the specific risks that may emerge in SMEs that follow a CBI strategy, during their transition towards ambidexterity.

3. THE TRANSITION TOWARDS AMBIDEXTERITY IN SMES: REVISITING THE ORGANIZATIONAL LEARNING TENSIONS IN CUSTOMER-BASED INNOVATION CONTEXTS

Based on Wang and Rafiq (2009), the first tension deals with complementing adaptative with generative processes. This combination requires understanding the fundamental underlying cause–effect relationship between the firm and its environment (Slater & Narver, 1995). Generative learning requires an organization to question its fundamental strategic assumptions, encompassing knowledge creation that represents a departure from the organization’s existing knowledge base. In our case, CBI supports SMEs’ ability to access new knowledge sources, and implies a process based on the identification, development, and calibration of opportunities with external customer needs and organizational strategic challenges (Teece, 2020). Customer collaborations involve partners that share common practical problems and experiences (Fitjar & Rodriguez-Pose, 2013), and thus they are expected to be more directly related to problem-solving to help firms to exploit their current knowledge pool and search for new process and product solutions. As long as these collaborations require specific contextual knowledge and know-how, SMEs can suffer from an excessive cognitive proximity. Innovation requires complementary but dissimilar bodies of knowledge, thus homogeneous collaborations of specific knowledge would lead to competence traps, lack of novel sources (Boschma, 2005), and over-specialization lock-ins. The risk of myopia can arise, by restricting SMEs’ innovation output to current technological combinations, which deter further innovation (Fitjar & Rodriguez-Pose, 2013; Alcalde-Heras *et al.*, 2023).

Second, adding divergence to existing convergent processes means diversification and reconfiguration of organizational skills and competencies, with creativity as a primary objective. In cases where SMEs collaborate with different customers to innovate, unleashing this creative energy could lead to a fragmented organization that lacks the synergy needed to take advantage of opportunities (Wang & Rafiq, 2009). Individuals’ intuition and information processing may differ from SMEs’ advantage-seeking priorities, and without organizational routines, collective decisions cannot be made to concentrate organizational resources on fully developing certain opportunities. The risk of fragmentation can affect SMEs that transit through ambidexterity if CBI lacks the required strategic orientation and focus (Zhou *et al.*, 2021).

Finally, the tension between individual and organizational learning must be overcome to establish ambidextrous innovation. Following Wang and Rafiq

(2009), individuals' active engagement in processing and evaluating environmental information is the source of firms' innovation opportunities, but this exploration process necessitates a greater level of individual-based, intuitive learning. Conversely, opportunity exploitation requires uniform organizational learning and collective efforts to align individuals' opportunity-seeking behaviour with the firm's advantage-seeking action (Hitt *et al.*, 2001). Therefore, in SMEs following a CBI strategy, the 'individual–opportunity nexus' (Shane, 2003) is even more critical and must be managed to efficiently integrate individual learning of the staff who is in direct contact with the customer exploring new opportunities with the organizational learning scheme that exploits the firm's efficiency. Otherwise, the risk of polarization can arise (Cuevas, 2018) missing innovation opportunities in SMEs.

Little has been said about how to prevent or manage the mentioned risks. Some proposals such as creating a synergistic network based on heterogeneous partners focused on customer problem solving (Boschma, 2005; Parrilli & Alcalde, 2016); enhancing knowledge sharing to fill out the SMEs' initial resources and skill endowments (Heider *et al.*, 2021); or promoting a climate that supports innovation (Zuraik & Kelly, 2019) have been put forth; but, more efforts are needed to help CEOs avoid the specific risks identified in CBI contexts in the transit through AOL in exploitation-oriented SMEs.

4. METHOD

Our research design is a set of four case studies to explore how to succeed in the ambidexterity transition in the context of CBI led by SMEs. Case study method provides rich, detailed data to better understand 'a contemporary phenomenon within its real-life context' (Yin, 2003, p. 13) with the purpose of generating or complementing theories on complex social phenomena (Eisenhardt, 1989).

The cases analysed are located in Araba, a region characterized by a dynamic business fabric, located in Spain. Following Araba Foru Aldundia (2016), this region outstands by a high specialization in manufacturing (manufacturing contributes 32% to the regional's GDP, above the 17% of Spain, or the 19% of the EU-28) and presents a relevant export rate (more than 50% of what is produced in this region is exported). Departing from a set of very innovative SMEs identified by the regional government, we select a set of SMEs' case studies that follow a CBI strategy and have attained a successful transition towards ambidexterity.

4.1. Data collection

Our data collection was conducted following two distinct methodological steps for data collection building on Yin (2009) and Eisenhardt (1989) and Ailon-Souday and Kunda (2003).

First, we gathered general and specific material about the empirical context to understand the background of the research setting. This initial work allowed us to select the case studies that would better illustrate the research question. From an initial set of 42 business cases (Araba Foru Aldundia, 2016), 13 innovation success cases were identified. Information captured from webpages and press releases regarding their innovation trajectories along with one co-authors' experience with, and knowledge of the firms helped to enrich the innovation outcomes of the initial set of business cases in order to select the thirteen success case studies of innovation.

A survey capturing specific company data about their dimension, longevity, business group composition, level of export and import, economic and financial performance, and ad-hoc questions to categorize the evolution of the OLA level of each of the cases studies (such as the propensity to feel comfortable in uncertain environments, the innovation strategy, orientation to opening up new markets/industries, organizational competencies and orientation toward entrepreneurship, type of leadership, organizational culture, organizational structure, and performance and rewards criteria used in the firm) provided valuable information about these 13 companies.

Based on the data captured in the mentioned survey, we finally selected a set of four case studies based on the three following criteria. First, we selected the SMEs that presented a high balance between opposing behaviours (exploratory vs exploitative) which indicate their ambidextrous organizational learning strategy. Second, the SMEs that confirmed a transition, that is, SMEs who have attained an explorative trajectory over time. Third, the SMEs Hd that follow a CBI strategy, that is, the ones that declare to focus their innovation strategy to fulfil their customer interests. As previously mentioned, only four case studies fulfilled these three criteria and were finally selected for the present study (Table 1). All of them corresponded to SMEs (European Commission, 2009) operating in different industries. It is important to underline that there are four companies, with innovation trajectories recognised as success stories in different fields that have allowed them to achieve important awards and certifications both nationally and internationally (i.e. International QIA Quality Innovation Award, European Award for the Environment in the Product; Stanley Black & Decker Supplier Award for superior performance in Quality, CE Certifications, Innovative SME Recognition- Spanish Government Ministry of Science; European Eco-Label; AENOR certifications...)

Indeed, we followed a purposeful sampling technique (Merriam, 1998), selecting four cases based on the significant information regarding the phenomenon under investigation. This case selection method allows analysis in a natural context.

Table 1. CASE STUDIES SELECTED

	CaseA	CaseB	CaseC	CaseD
Employees	>200	>200	10-50	50-200
Industry	Chemicals	Metal	Software	Equipment
Foundation year	> 20 years	>50 years	>10 years	>20 years
Exploitative (%100)	7	27,5	28	33
Explorative (%100)	93	72,5	72	67
Trajectory toward exploration	Yes	Yes	Yes	Yes
Main achievements, Awards & Public Recognitions	Evolution toward clean technologies, green chemistry, biotechnology to develop low environmental impact products. International QIA (Quality Innovation Awards) for the Eco-solvent product. European Award for the Environment in the Product Category. Several years. European Business Award for the Environment, European Section for SMEs & micro-SMEs. Several years. European Business Award for a Sustainable Development, Basque & Spanish Section.	Internationalized company with subsidiaries abroad. Stanley Black & Decker Supplier Award for superior performance in Quality.	Is a top digital communication agency at national level. Magento Partner Salesforce Partner	Internationalized company through exports with presence in more than 50 countries. ISO 13485 ISO 14001 CE Certification CE0318, CE Certification CE2792 Innovative SME Recognition-Spanish Government Ministry of Science. Member of ECO-EMBES Recognition of Agencia Española del Medicamento y Productos Sanitarios.
Quality, Innovation & other Certifications	Member Organization of the Euskadi 2030 Gunea. Eco-Design certification under the Standard: UNE 150301 (current ISO 14006). European Eco-Label. AENOR Quality Management ISO 9001 AENOR Environmental Management ISO 14001 AENOR R&D+i Management ISO 16002 AENOR Eco-Design Management ISO 14006	AENOR 14001		

Source: Own elaboration

The second step of data collection was based on interviews with informants based on a semi-structured interview guide. The interviews were conducted by case study with the CEO. During each session, interviewees were free to delve deeper into or focus on the most relevant aspects of their experience. Specifically, the topics addressed the following four areas:

- Why is your company considered an innovative organization and how would you describe the key elements of its innovative nature?
- How did the company attain its innovation performance? How would you define its innovation model?
- From a temporal perspective, how has the innovation strategy of the company evolved over time?
- How has this innovative culture been led and systematized from the organizational perspective?
- Other factors considered relevant to their innovation performance.

The semi-structured interviews with the CEOs were conducted from October 2019 to November 2019 (Table 2). The formal interviews lasted between 90 and 120 minutes. The participants in the study provided rich testimonies that resulted in audio recordings. All the interviews were face to face. All of them are in Spanish and the authors have translated to English the quotes, with the assistance of an expert in translation.

Table 2. SOURCES OF INFORMATION

	CaseA	CaseB	CaseC	CaseD
Characteristics of the Interviews and the Respondents' Profiles				
Date	19-11-2019	8-10-2019	10-10-2019	8-10-2019
Duration	2 h	1 h 30 m	2 h	2 h
Place	Basque Country	Basque Country	Basque Country	Basque Country
Respondent position	CEO	CEO	CEO	CEO
Document support	Computer Writing notes	Computer Writing notes	Registered interview transcription	Registered interview transcription

Source: Own elaboration

4.2. Data analysis

The study uses content analysis of interviews with the CEO participants to identify the organizational behaviours supporting their transitions towards an ambidextrous innovation strategy. The interviews constitute the main data collection for the data analysis, with background documents useful for triangulation, that together with the previously mentioned elements of the research design, is a relevant tactic to assess the constructive validity of the results of the study (Villarreal & Landeta, 2010; Villarreal, 2017).

Additionally, following the same authors, we apply different tactics regarding the internal validity assessment. First, we coded the empirical categories identifying specific actions led by the CEO to overcome the risks involved in the process of reaching ambidexterity in collaboration with customers. Each category was marked and the verbatims related were classified in different groups. Second, we examined this material to gather specific actions into more complex behaviours, and we sorted the quotes from the interview material. Indeed, we also followed Ailon-Souday and Kunda's (2003) procedural advice of 'making sense' of data for analysis of the interviews in relation to our conceptual framework.

Finally, in developing the data analysis, we have moved back and forth between the empirical material and the relevant literature to relate our findings to extant literature and try to extract lessons from it. As a result of these processes, and regarding the external validity (Villarreal & Landeta, 2010; Villarreal, 2017), among the findings, we have identified a set of checkpoints to guide in the transitions towards an ambidextrous strategy.

5. FINDINGS

5.1. The case studies

CaseA

CaseA is a SME in the chemical industry focused on developing products that are responsive to environmental issues. This specialisation has opened up the environmentally conscious and less cost-oriented North European market. Its work has been recognised through the awarding of various prizes (i.e. Quality Innovation Awards for the Eco-solvent product, European Environment Award in the Product category - Basque Country Section, European Business Award for the Environment, European SME and micro-SME Section).

This meant a decisive change in the path of this SME that implied exploring new avenues not only regarding their product but also in the essence of their processes, people, and management style. The strategic decision of producing only

green products, was supported by the firm ownership since it implied new resources to invest in R&D activities, new hiring practices and lots of renouncements in the short term, as long as they had to actively renounce many proposals that they received.

«We have given up part of the market that we already had. This is really tough, but we are committed to giving up everything that does not fit with this strategy, and we have had to say no many times. This is not easy».

Additionally, to this new exploratory approach, CaseA focused their efforts on generating their own methodology not only to develop new opportunities but also to maintain their focus on efficiency.

«We not only think about efficiency during the use of the product, but also taking into account the entire life cycle: kilometre zero suppliers and product disposal phases. We were the first company to have this eco-design distinction. This gave us new opportunities as well as it allows us to maintain our efficiency».

The CaseA innovation methodology is very patterned, but also it gives much freedom to generate new products, being very close to the customers' challenges and fostering the internal creativity. CaseA is proud about being very close to their customers, and work generating new products with them. Indeed, customer collaboration methodologies were adapted to their own capabilities and strategies as an SME.

CaseB

In CaseB they manufacture the pieces their customers ask for. However, in recent times CaseB has evolved and are recognized as heavy innovators, having received several prizes for it (i.e. Stanley Black & Decker Supplier Award for superior performance in Quality, AENOR certifications...)

«Before we had no external contacts. We didn't look outside. We managed ourselves. There has been an internal reluctance to open the doors and to change the way we worked. But now, working with third parties has generated fruits, inter-cooperation, and networks are very important. Now we see it clearly; we have wasted time in the past not doing it».

They have changed from manufacturing parts according to their customers' designs to manufacture their own generated solutions for their clients. They decided they do not like to be in the hands of third parties and they wanted to have their own voice and offer their own solutions to their clients.

In order to do so, they heavily offer support service to the client working together with the engineering departments in the clients' home. Nowadays, their

clients ask for solutions they have not yet developed, and they are eager to generate these new solutions for them.

«Even if our innovation capabilities rely on our technical knowledge, we still have to be very operative, lean and efficient. Our customers ask for it, and this implies terrible changes and tensions, we have to be really efficient. We work in completely autonomous teams with the client; each team and each project has to be efficient and rentable. This implies a decentralized and horizontal structure which entails a complete change in the culture and in the people».

CaseC

CaseC is a service company that is specialized in software development oriented to very sophisticated customers. Their declared mission is to generate a satisfying work experience for their people, based on three pillars: excellence, purpose and honesty.

For a medium sized company in this industry segment, people are the most valuable resource, the unique resource, and in order to retain the best professionals, the company has to provide a work environment that is enjoyable.

«To maintain our people happy is more relevant than anything else.

This company only works with clients that our people are happy working to. We grow, we need to grow, to respond to an increasing demand, but we do not want to grow anyhow, the company needs to maintain their principles and culture».

They are known by their innovation capabilities, that are based on their people. However, the company cares for procedures, structure and control of the projects which are relevant for the CEO.

«...is not the control of the people, it is the control of the project that is relevant to be able to help the project and be successful. We have a method to follow the project thoroughly in order to assure its success, that is our people's success. We want to help our people to excel, and we try to give them what they need to improve overtime».

CaseD

CaseD has gone through a complete change in their business model. This company started as a commercial firm, and nowadays it manufactured high-tech products personalized to the needs of specific clients. This evolution has allowed them to achieve such an important distinction as the Innovative SME Recognition- Spanish Government Ministry of Science.

«A completely new unit of R&D was set to organize the efforts of design and development of new products. This unit works on the challenges of our client who aims to solve specific and highly complex technical problems. [...] we are flexible, we adapt ourselves to the needs of the client. We have a method to select where to enter, we select the projects when we can be successful at all terms, and we say no to the rest of the proposals».

The CEO is concerned by the need of complementing internal with external knowledge in order to respond to clients' requirements. This complementarity requires new routines.

«We mainly do technological innovation organized by R&D projects, ranging from incremental to more disruptive innovations, [...] we have developed new routines, in which for example, diffusion is incorporated».

5.2. Cross-cases analysis

In the four cases analysed, the CEOs' narratives demonstrate their commitment to managing the transition to an explorative learning strategy in a CBI context. In all the cases, the CEO declared their own responsibility in leading the process, the toughness of the change accomplished and the relevance of the organizational and cultural evolution during the transition process.

Table 3 shows how, despite the particularities of each case, three main lessons emerge. First, the relevance of constantly revising their own strategic options. In the four cases, the focus on a specific strategic option is clear, all of them made choices and most of all, renounced, that need the support not only of the top management team, but of the owners of these SMEs. Additionally, their strategy is not static, all four cases adopt their innovation approach as a trademark that helps these businesses to be flexible and evolve, constantly revisiting their strategy, in order to avoid the risk of myopia and furthering innovation. Moreover, some of them enlarge their collaboration scope creating a synergistic network where heterogeneous partners interact to solve a customer problem.

Second, the four CEOs build and formalize CBI, based on their own innovation model and routines across their organizations. In doing so, the emergent strategy is integrated in the collective decision model, reaching congruence as the target customers are put in the centre of the innovation model, avoiding the risk of fragmentation. Finally, in all cases an internal ambidextrous culture is fostered. The need for transparency is recognized in order to lead the unity during the transition process and engage the people into the new conception of the firm, preventing polarization risk. Additionally, the caring of the people becomes critical. People are the unique resource for these SMEs to achieve success, the four cases recognized the relevance of fostering people's autonomy without losing track of the collective orientation and organizational learning.

Table 3. RECURRING THEMES, SECOND AND FIRST ORDER CODES AND VERBATIMS

Recurring themes	Second order codes	First order codes	Verbatims
Revising constantly their own strategic options	Focusing on a Forthright Strategic Option	Defining our focus	<p>CaseA: Since 2001, we have marked what kind of products we want to make, and above all, which ones we don't want to make.</p> <p>CaseB: The differentiating element is our customer support, we locate ourselves at the customer's home, in the customer's own engineering.</p> <p>CaseD: We are still small, but we are able to listen to our customers and respond to their specific problems, and for large multinationals, it is more difficult to listen and attend to them. We leverage on that.</p> <p>CaseC: We are truly groundbreaking. The mission of the company is not so much the business itself, but to be able to generate a work model in which it is cool to work.</p>
	Focusing on an unsettled internal structure, we need a culture that is a strong foundation for the strategy.	Making renounces	<p>Case D: Now, we are focused, and we no longer say yes to everything or everyone, we make our own choices.</p> <p>Case C: ...and we could grow more, but we do not. The mission conditions the business. We give up projects for consistency with that mission.</p> <p>CaseA: We have given up part of the market that we already had. This is really tough, but we are committed to giving up everything that does not fit with this strategy, and we have had to say no many times. This is not easy.</p>
Revising constantly their own strategic options	Focusing on an unsettled internal structure, we need a culture that is a strong foundation for the strategy.	Overcoming the transition thanks to the top-management commitment	<p>CaseA: This has required great transformation, it has required a lot of research and investment, and above all, many renouncements.</p> <p>CaseC: And we are consistent with our strategy. For us, a developer leaving is much more serious than for a client to leave. It is very challenging for us and requires time to have the people you need... we can only integrate two or three people every six months, it is a process.</p> <p>CaseB: Sweat and tears accompany internal changes. (...) This is very expensive internally but necessary. Since we were generating growth on an unsettled internal structure, we need a culture that is a strong foundation for the strategy.</p>
	Innovation approach for constantly revisiting the strategy	Adopting innovation as a trademark	<p>Case B: Innovation is not fashion for us, it is our day-to-day business.</p> <p>CaseA: This is how we launch one or two innovation projects a year in collaboration. It is vital to be in networks at an international level, where legislation, new components are being cooked... the journey would be short if I only collaborated with those close to me.</p> <p>CaseC: We are aware that the market is evolving towards very strong levels of specialization, although we try to mitigate them through the promotion of more general capacities to innovate and to ensure the global vision of the company in the long-term.</p>
Innovation approach for constantly revisiting the strategy	Innovation approach for constantly revisiting the strategy	Being flexible, and able to adapt your strategic options	<p>CaseB: There are changes day by day, high uncertainty, but we continue contributing, improving our customer service constantly is our way out.</p> <p>Case B: In the last two years, everything changes every day, forecasts change. It's not that we like it, but it is what it is, and it is continuous business and internal challenge.</p>
	Innovation approach for constantly revisiting the strategy		<p>CaseA: The Basque network of centers, with universities...and we work in innovation projects with different companies, sometimes complementarily, although they could even be with competitors, and we change our relationships with them.</p> <p>CaseD: We now operate better in competitive environments of high uncertainty, mainly driven by regulatory and technological change, and we prioritize the medium / long term in the company's innovation strategy, continuously seeking new markets and improving the competitiveness of current industries.</p>

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Recurring themes	Second order codes	First order codes	Verbatims
Building and Formalizing customer-based innovation	Generating their own innovation model & routines	Formalizing their own innovation model	<p>CaseA: We implemented an eco-design methodology, all the way throughout our value chain, we call it from cradle to grave, and this allows us to be different.</p> <p>CaseA: The model is very methodological, very patterned, but also with a lot of freedom. (...) without knowing what things were called...</p> <p>CaseC: We use agile models in replicated teams; but we do not follow anything to the letter.</p>
	Adapting their innovation method	Adapting constantly their innovation method	<p>CaseA: ... we have been incorporating things that we have seen, in our own innovation model.</p> <p>CaseC: We adapt it, we take what we like. One of our values is people's flexibility, so we can reinvent ourselves. (...) The innovation strategy has evolved over time.</p> <p>CaseD: We have developed new routines, in which for example, patenting and disclosure, diffusion is incorporated in the innovation process.</p>
	Collaboration with customers	Customers, the center of the innovation	<p>CaseA: We are very close to the market, working in a network, working with the client, working on internal creativity...</p> <p>CaseB: We make parts; the parts that the client need. We do not have our own product, but we have managed to continuously provide new solutions to that client; solutions that they do not have. The client knows the problem or improvement they want to achieve, and we bring all of our knowledge to the client.</p> <p>CaseC: Our own work is very innovative ... It forces you to be up-to-date and be a client partner for everything. We get together with clients who are spearheads, we develop routines to train them.</p> <p>CaseD: We mainly do technological innovation organized by R&D projects, ranging from incremental to more disruptive innovations, providing specific solutions to specific problems of our client.</p>
	Organizational design to innovate	Integrated teams with customers	<p>CaseA: We have established a codesign methodology with customers. We are very close to the end customers, those who consume the product, and you ask them, if not... codesigning with them, prototyping, advancing with them. This allows us to explore and advance continuously.</p> <p>CaseB: ...and we do it in the client's own home, in the client's own engineering offices. We completely integrate with them.</p> <p>CaseC: we have teams integrated with the client, we train the clients' teams, we assemble a structure remotely with the clients, and they work within all the companies, shared teams. On the internet, innovations are driving you, you are constantly competing, the client asks us constantly, we don't have so many people inside, so we train the clients' people.</p> <p>CaseD: Each project has a leader, and that leader has a multidisciplinary, transversal team where each one contributes his or her own for the development of a new product and we include external collaborations, not only clients but also technology centers.</p>

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Recurring themes	Second order codes	First order codes	Verbatims
Fostering an ambidextrous culture	Understanding ambidexterity	Transparency for unity	<p>CaseA: We all know in the workforce what the strategy is, because of the type of products the company is committed to: we all row in the same direction, we all know what we are looking for.</p> <p>CaseB: To protect the business project, you have to make tough decisions. (...) We have to be understandable, and clear; we are working on culture.</p> <p>CaseD: In technological innovation we are much more transparent than before, now we patent, we disseminate our advances, we collaborate and present our advances in scientific congresses, it is not left behind closed doors.</p>
	Understanding ambidexterity	Engaging people during transition	<p>CaseB: Participatory leadership, yes, but everything cannot be decided in assembly. If you go from a fully hierarchical company, it is difficult to do it quickly, but we tend towards it, but we have limits. There are teams that ask me for hierarchy, 'I do what you tell me'.. We have to change little by little, intergenerationally you have to work at it. There is a certain generational clash.</p> <p>CaseC: When we were few, internal management was easy. When we are more, more crises arise (...) That is why the partners meet in person every week with a different person, and we agree with her on which aspects she can improve.</p> <p>CaseC: We are truly groundbreaking. The mission of the company is not so much the business itself, but to be able to generate a work model in which it is cool to work, based on three pillars: honesty, excellence, and purpose. If we achieve this, we will have the best working conditions; employees are happy, motivated, and this will in turn lead to happy customers.</p>
	Looking after the value of individualities within collective orientation	Caring for our people	<p>CaseC: The strategic options have evolved over time, and we believe that putting our people at the center has made it possible to be successful and continue satisfying customers.</p> <p>CaseB: That internal innovation that requires changes generates tensions, and we are making different attempts to solve it.</p> <p>CaseC: We have told clients, 'We are not going to work with you, because my team is not comfortable.' I would rather lose a client than not work at ease.</p>
	Looking after the value of individualities within collective orientation	People autonomy, but without losing efficiency	<p>CaseB: We attempt to form autonomous people, able to work in teams, we need to be more efficient.</p>

Source: Own elaboration

6. LESSONS LEARNED

The analysis of 4 cases of companies considered as success stories in the field of innovation allows for deepening into the specific risks that SMEs face to achieve OLA in the context of CBI and identifies the lessons that helped coping with them: the need for constantly re-orienting their own strategic choices of SMEs, the formalization of CBI, and the relevance of fostering an ambidextrous culture.

6.1. Revising constantly their own strategic options

In all cases, we see that learning is ongoing. Ambidextrous learning is not an end in itself but a means to being successful in a continuously changing environment. Changes in factors of competition, demand, policies, society, resources, and technology require organizational adaptation and adjustment, and ambidextrous learning may also make it possible for SMEs to respond to environmental dynamics (Teece, 2007).

The four SMEs analysed focused their strategic efforts on a specific strategic option, allowing them to evolve from adaptive to generative learning. Moreover, the innovation derived from this generative learning is oriented to the SME's specific strategic option, and, at the same time, following this own strategic option prevents the SME falling in the myopia risk.

All cases demonstrate the relevance of relying on a strategic focus to both orient SMEs innovation process (CaseA) and evaluate the innovations that emerge internally or outside of the organization (CaseD). Due to innovation in SMEs following a path-dependence perspective, to consolidate the emergent understanding in its traditional settings, the CEO must watch over the integration of the strategic focus in the company's existing business model (CaseA, CaseC), review periodically and involve short-termed actions (CaseC, CaseD). CEOs must boost a formalized approach based on the development of short-term actions to facilitate the identification of the new strategic focus and consolidate it into the daily business. Thus, additional stakeholders are included; for instance, with certain suppliers to increase capabilities, with technology centres, or with other knowledge agents to obtain specialized knowledge and talent (CaseA, CaseB, CaseD).

Three of the CEOs (CaseA, CaseB, CaseC) invoke the relevance of the top managerial role and even SMEs' ownership for establishing and supporting routines to consolidate explorative understandings into the strategic framework (Bontis, 2001). This is in line with Baškarada *et al.* (2016), who found that leadership commitment is essential in the transition of exploitative-oriented firms to exploration. Given the organizational opposition associated with this challenge, without this support, the managerial impetus will fade, defeated by organizational inertia (Jafari *et al.*, 2019). This involves assuming a certain level of risk and leadership that consistently demonstrates risk comfort (Baškarada *et al.*, 2016).

Regarding how, in the different cases, it stands out that focus on a strategic option implies important renounces. The new strategic focus implies critical decisions that affect the entire organization, its activities, and its results. Thus, the CEO exerts an essential role in explaining and sharing strategic commitment across the organization, as well as confirming the focus in critical moments, despite its costs. Additionally, the role of the CEO is critical in supporting the renounces that selecting a strategic option implies, as well as leading organizational dynamics that revisit their strategic focus on a continuous basis. The cases analysed show certain heterogeneity in the management and organizational routines that allow such revisiting. Some of the cases present a business strategic reconfiguration through established management innovation routines (CaseB) or through fostering agile managerial models that focus on people's satisfaction and commitment (CaseC).

6.2. Building and Formalizing customer-based innovation

Working in integrated teams with clients (CaseA, CaseC, CaseD), and even developing their activities in an integrated value chain inside the client premises (CaseB) allows to enable knowledge absorption, supporting the transmission of knowledge. CEOs showed their concern about this transmission and stressed the importance of formalizing such collaboration. All the cases show that external collaboration plays an important role in OLA, allowing SMEs to evolve from convergent to divergent learning.

Indeed, SMEs prefer collaboration with customers as this type of collaborations allows SMEs to exploit their original innovation in the short-term and consolidate their innovation path in related business. This alignment can be based on the integration of the value chain of SMEs and their customers (CaseA, CaseB, CaseC) in which the SME is hosted in the client's home and codesigns and cocreates products or services to answer to specific client needs, but this is not always the case. Most of the time it is based on a close relationship and a deep understanding of customers' needs (CaseD). In both cases, focusing innovation inspired by clients' critical needs is the strategic purpose of these collaborations (Parrilli & Alcalde, 2016) and helps their innovation development (Rincon *et al.*, 2022). Therefore, formal collaboration through the development of specific methodologies and routines (CaseA, CaseB, CaseC) allows SMEs to identify, develop, and calibrate opportunities that limit choices and prioritize ideas according to their strategic importance to the organization (Teece, 2020).

Additionally, due to cognitive proximity, customer collaboration seems to perform as the first SME attempt to engage in an open innovation approach (CaseA, CaseD), which support SMEs' experimentation through further collaborations. CEOs agreed on stressing the importance of deep collaborations that are continuous over time and aligned to the chosen strategic option, but getting additional strategic

resources stands out as a clear purpose of these collaboration dynamics. In these cases, SMEs' emergent and deliberate strategies are combined (Mintzberg & Waters, 1985), emphasizing to avoid innovation-related dispersion and inefficiencies (Zhou *et al.*, 2021), in other words, preventing from fragmentation risk.

6.3. Fostering an ambidextrous culture

The ambidextrous culture facilitates creativity and upholds discipline in the organization (Khan & Mir, 2019) and is based on shared vision and organizational diversity (Wang & Rafiq, 2014). In this sense, this lesson focuses on boosting individual contributions and integrating them thanks to open participatory models, in which transparency and openness enhance individual integration in the organizational setting. Some cases stress the importance of an organizational structure that facilitates the emergence of an internal participatory climate. However, some acknowledged difficulties associated with a high internal participatory climate emerged during the interviews. In this sense, internal costs (i.e., training costs), requiring a balance of flexibility and formalization, coordination costs, and intergenerational clashes present challenging barriers.

In all cases, a participatory internal climate based on transparency and openness emerges as a key driver to aligning innovation and integrating the focus on the individual creativity and value in the organizational setting, avoiding polarization risk. We found evidence of CEOs' efforts to develop a highly participatory climate (CaseA, CaseC, CaseD) and internal organizational routines (CaseB, CaseC, CaseD). Moving toward a human relations model (Linnenluecke & Griffiths, 2010) focused on building moral cohesion, participative decision-making, and training and development is a challenge engaged in a twofold perspective: individual and organizational.

From the individual perspective, increasing creativity (CaseA), and personalized management (CaseC) are enhanced to support the development of explorative innovation. Due to the high opposition that organizational change provokes, refusal to participate in a horizontal organization (CaseB) or the difficulties associated with employees' growth (CaseC) are evidenced, indicating that sometimes collective decision-making must be restricted to a limited number of employees (CaseB). From the organizational perspective, and following the previous argument, enhancing team orientation is a critical task of CEOs to support exploration in SMEs (CaseB, CaseC). This requires reinforcing flexibility and participative decision-making and encouraging trust-based and distributed leadership (Alcalde *et al.*, 2019). Team orientation allows support of individual innovation and a supra-individual perspective that leads to a more systemic perspective of innovation. From this insight, a larger strategic vision allows management of the synergies between exploitation and exploration inside the team and permanently integrates the necessity of capabilities for chosen innovation strategies.

7. CONCLUSIONS

This paper revisits the Wang and Rafiq (2009) framework and identifies the specific risks faced by SMEs that transit from exploitation to ambidexterity in CBI contexts.

Our findings not only contribute to the confirmation of the CBI as an adequate strategic option to the SMEs that transition from an exploitative towards an ambidextrous strategy, but also identify the specific risks (myopia, fragmentation and polarization) associated to SMEs aiming to balance the different learning approaches in CBI contexts. Additionally, we provide three main lessons to activate a more explorative learning orientation in exploitation-oriented SMEs. First, the need for constantly re-orienting SMEs' strategic choices; second, the formalization of CBI; and third, the relevance of fostering an ambidextrous culture.

Regarding the practical implications, first, we confirm the fundamental role of the CEO, in the transition from an exploitative towards an ambidextrous strategy. Focusing on CBI contexts, we identify the specific risks derived to the ambidextrous strategy, myopia, fragmentation, and polarization, that must be avoided. Moreover, we provide a set of useful tool kit that help to overcome the previous risks and make the success of this transition more probable. Finally, we propose a checklist that the CEOs could use to verify the readiness of the organization to face this process (Table 4).

Table 4. CHECKLIST TO VERIFY IN A TRANSITION TOWARDS AN AMBIDEXTROUS STRATEGY BASED ON CUSTOMER COLLABORATION

THEMES		CHECKPOINTS
Revising constantly their own strategic options	Focusing on a Forthright strategic option	Has the organization a purposeful strategic option? Is it clearly defined? Is the organization able to renounce opportunities that do not fit with the strategic option of the firm? Is the CEO committed to persist in the ambidextrous strategy even if he/she is confronted to resistance from the organization? Can he/she foresee these resistances?
	Innovation approach for constantly revisiting the strategy	Is innovation considered as a value-driver? Is it considered as a trademark by the CEO? Is the CEO able to adapt the strategic option in order to integrate new and synergistic strategic options?
Building and Formalizing customer-based innovation	Generation their own innovation model & routines	Does the organization have an innovation model? Is it proper to or is it assumed by the organization? Is this innovation model reviewed and adapted regularly?
	Organizational design to innovate in collaboration with customers	Before launching an innovation, is it verified that it is customer centered? Are the workers ready to be integrated in teams with customers? Is the organizational dimension adequate to locate the SMEs workers in the customer premises? Is it foreseen the risks of this integration?

THEMES		CHECKPOINTS
Fostering an ambidextrous culture	Understanding ambidexterity	Has the SME a communication/transparency policy regarding their partners? their workers? How is unity preserved among the SMEs members? Is the workers loyalty towards the SME verified, preserved, enhanced?
	Looking after the value of individualities within collective orientation	Are workers happy to be part of the SME? How is the workers autonomy preserved/boosted? How is the worker's efficiency measured? Preserved/boosted?

Source: Own elaboration

Our research relies on four case studies that allow a contextually rich and deep analysis of the process of transition from exploitative to ambidextrous strategy based on customer collaboration (Yin, 2013). Even if we comply with Eisenhardt's (1989) suggestions regarding the number of cases, additional and heterogeneous cases or stakeholders could enhance the robustness and external validity of our findings (Villarreal, 2107; Villarreal & Landeta, 2010). Specifically, the inclusion of cases that fail in this transition process would enrich the findings. Another potential avenue involves exploring how this process is perceived from the customer perspective, the implications in their relationship and their strategies and performance. The inclusion of other actors such as clients, or employees would improve the triangulation and constructive validity of the research (Villarreal, 2107; Villarreal & Landeta, 2010). Moreover, following Kourti (2021), looking deeper into how to deal with the complex identity coming up from the interorganizational collaborations could help managers to manage the paradoxical identities involved in CBI ambidexterity. Finally, of the four interviewees, only one was a woman. Increasing the number of female-CEO could provide new insights regarding these strategies and therefore complement the current masculine dominant perspective in the managerial literature.

Acknowledgments

The authors gratefully acknowledge financial support from the Basque Government Department of Education (IT1429-22). We would also like to thank all the CEOs, who accepted to be interviewed. Finally the authors would like to express their gratitude to the Provincial Council of Alava and the Araba Lehiakorra project for their invaluable support and funding, without which the case studies analysed in this article would not have been possible.

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