

A DYNAMIC MODEL OF CUSTOMER KNOWLEDGE MANAGEMENT IN LEGACY FIRMS: A CASE FROM THE RETAIL SECTOR

Victoria Y. Ourzik

PhD Candidate, Université Paris Dauphine PSL

Place du Maréchal de Lattre de Tassigny, 75116 PARIS

victoria.ourzik@dauphine.eu

Pierre Volle

Full Professor, Université Paris Dauphine PSL

Place du Maréchal de Lattre de Tassigny, 75116 PARIS

pierre.volle@dauphine.psl.eu

Abstract

While the knowledge-based approach to strategy has greatly deepened our understanding of the bases of competitive advantage, there remains a gap in comprehending how customer knowledge transitions into a strategic resource. In this research, we construct an inductive model to explore the processes linking (1) top managers' perceptions of customer knowledge as a resource, (2) the methods executives employ to gather or seek out customer knowledge, and (3) their application of this knowledge in practice to cultivate unique customer agility as a means to gain competitive advantage. A single case study was conducted to gain detailed insights into these dynamics. Data collection was achieved through nine semi-structured interviews, which were analyzed using Gioia's methodology. The findings are particularly relevant in light of the increasing integration of emerging technologies—such as (big) data analytics—into customer knowledge management processes. These technologies not only enhance firms' ability to capture and analyze customer knowledge but also accelerate the development of customer agility, a key driver of competitive advantage in today's fast-evolving digital landscape. Understanding the relationship between customer knowledge management and customer agility, especially within the context of these technological advancements, is crucial for companies aiming to build sustainable competitive advantages and thrive in the current business landscape.

Keywords - Customer knowledge; Customer agility; Sense-and-respond; Gioia method

1 Introduction

While the collection and processing of customer knowledge are crucial for organizational success, they must be coupled with strategic action to ensure competitiveness in today's rapidly changing business environment. To stay ahead of the competition, organizations need to leverage their customer knowledge to create strategic actions that enable them to sense and respond to market changes [Haider & Kayani, 2021; Chatfield, 2018; Zhou, 2018; Huang 2021]. Without this strategic action, customer knowledge management is merely a passive activity that fails to translate into customer agility. Therefore, it is crucial to investigate the organizational mechanisms that facilitate the transformation of customer knowledge management into strategic action, to stay competitive in today's business world. In this article, we aim to explore the factors that facilitate the development of an organization's ability to sense and respond to market changes by analyzing the mechanisms that enable the transformation of customer knowledge management into customer agility. Previous studies have identified the antecedents, outcomes and moderators of customer knowledge, including its impact on organizational performance [Joshi & Sharma, 2004, Khosravi & Hussin, 2018]. However, these studies have mainly focused on the collection, processing, and dissemination of customer data, without considering how organizations can leverage this knowledge to improve firm's ability to sense and respond to customer needs, a capability known as customer agility [Sambamurthy et al., 2003, Roberts & Grover, 2012b]. To the best of our knowledge, few studies have explored the link between customer knowledge management and customer agility. However, recent research by Haider and Kayani (2021) has shown that companies that prioritize customer knowledge management are more likely to exhibit customer agility. Building on this research, we seek to explore the specific mechanisms by which customer knowledge management contributes to enhanced customer agility. This issue is particularly pressing for legacy firms—traditional “brick and mortar” companies established before the digital era [Kopalle et al., 2020, Staudt & Hoffmann, 2024]. These firms have historically relied on conventional marketing methods and may struggle to adapt to modern demands for agility. At the same time, significant gaps remain in understanding how customer knowledge (CK) and customer agility (CA) are integrated into digital transformation processes. While technologies such as artificial intelligence (AI), machine learning, and the Internet of Things (IoT) are reshaping business landscapes, their potential to enhance CK and CA within legacy firms is underexplored. These emerging technologies offer new ways for firms to leverage customer knowledge, enabling more rapid and strategic responses to changing market conditions. Therefore, an important question arises: How can legacy firms leverage customer knowledge to enable rapid strategic responses in the digital age?

To explore these issues, we conduct a qualitative single case study with in-depth interviews of senior personnel (e.g., CIOs, department heads). The data will be analyzed using Gioia's methodology [Gioia et al., 2013] to identify key factors influencing customer agility. This study contributes to the literature by clarifying how organizations can use customer knowledge to enhance agility. It provides insights for managers on the mechanisms needed to translate customer data into actionable strategies for improved market responsiveness.

2 Literature review

In today's dynamic business environment, businesses face the challenge of keeping up with changing customer needs and preferences, requiring them to build a better understanding of their customers and develop the ability to respond quickly [Day, 1994, Hajli et al., 2020, Jayachandran et al., 2004, Kalaignanam et al., 2021, Neill et al., 2007]. Two key concepts in the marketing and management literature—Customer Knowledge Management (CKM) and Customer Agility (CA)—play a pivotal role in fostering a responsive and dynamic business strategy. Customer knowledge, first introduced in 1995 by Andrew Orent, is now central to business management, encompassing an understanding of customer needs, behaviours, and trends, which are essential for maintaining a competitive advantage. CKM refers to a systematic approach to capturing, distributing, and using customer knowledge. It includes knowledge from, for, and about customers and emphasizes co-creating knowledge with them. The goal is to generate actionable insights that guide decision-making and foster a customer-centric mindset. On the other hand, CA is defined as a firm's ability to leverage customer feedback to gain market intelligence and identify competitive opportunities [Sambamurthy et al., 2003]. It is composed of two key components: customer sensing, which involves detecting shifts in customer preferences and market dynamics, and customer responding, which refers to reacting quickly and effectively to customer insights. Note that the distinction between CKM and the sensing dimension of Customer Agility lies in their focus: CKM is a structured process of capturing, sharing, and utilizing customer knowledge to inform decisions, whereas sensing refers specifically to the firm's ability to detect changes in customer preferences. The work of Roberts and Grover highlights the critical role of aligning sensing and responding capabilities, showing that this alignment significantly enhances organizational performance [Roberts & Grover, 2012a, Roberts & Grover, 2012b]. Additionally, Jayachandran emphasizes that the speed and expertise with which a firm responds are crucial for improving firm performance [Jayachandran et al., 2004]. Although CKM and CA both focus on engaging with customers, they differ in their focus: CKM is centered on acquiring and sharing customer knowledge, while CA emphasizes the ability to sense and respond to customer needs in a timely manner [Cegarra-Navarro et al., 2016]. Firms must manage both CK and CA effectively to maintain competitiveness in a rapidly evolving market [Gibbert et al., 2002, Roberts & Grover, 2012b]. The knowledge-based view of the firm and theories of organizational learning underscore the importance of knowledge in creating a sustainable competitive advantage [Kogut & Zander, 1992, Slater & Narver, 1995]. By improving customer sensing capabilities, firms can better understand and anticipate customer needs, which leads to faster, more informed decision-making and improved responsiveness [Jayachandran et al., 2004, Fiol & Lyles, 1985]. However, despite the strategic importance of CK and CA, limited research exists on how strategic leaders utilize customer knowledge to build competitive advantages. Furthermore, significant gaps remain in understanding how these concepts are integrated into digital transformation processes. Specifically, emerging technologies such as AI, machine learning, and IoT are underexplored in this context. Our study seeks to address these gaps by examining how leaders transform CK into CA and the challenges of integrating these concepts into digital strategies, ultimately aiming to generate actionable insights for strategic management in a rapidly evolving digital landscape.

3 Research context and methodology

3.1 Research Design

We chose a case study methodology to investigate a phenomenon that is both relatively unknown and distinctive. This methodological choice is considered opportune in delving deeply into the intricacies of the subject [Yin, 2003, Dumez, 2016, Alasuutari, 2010]. Case study research is well-established in the field of management sciences, recognized for its capacity to "refine a theoretical framework by identifying its gaps and beginning to address them" as asserted by Eisenhardt (1989). Yin's (1994) definition of a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and the context are not clearly evident" guides our approach. This methodology serves our research objectives by providing a means to comprehend the specificities and grasp the complexity of the studied phenomenon [Gagnon, 2012], exploring the "why and how" of events [Yin, 2003] within a particular context. Aligned with one of Hlady-Rispal's (2002) prescriptive postulates for case studies—focusing on the analysis of contextualized phenomena—our research seeks to achieve a nuanced understanding. Our decision leans towards a single case study design, emphasizing the depth and richness of data [Gibb Dyer & Wilkins, 1991]. This approach involves an in-depth exploration of a specific case—a global retail company that initiated a customer knowledge management strategy. This single case study design aligns with the exploratory nature of our research, allowing profound insights into the specific dynamics and intricacies of sensing-and-responding within the retail industry. This depth of understanding is essential for achieving our research objective of comprehending the market responsiveness of retail companies in a fast-paced environment.

3.2 Sampling

To define our sample and select participants, we conscientiously consider three parameters: (1) hierarchical categories (Executive, Director, Manager), (2) professional domains (Marketing, Information Systems, Data Analytics), and (3) geographical locations of the subjects (central headquarters, regional branches). This meticulous approach aims to capture a comprehensive understanding of the multifaceted perspectives that contribute to the phenomenon under scrutiny.

3.3 Rationale

This study focuses on W, a leading luxury retail company, due to its relevance to the research on customer knowledge management and agility. W operates in a dynamic and highly competitive market, where rapid changes in customer preferences demand organizational agility. Its customer-centric approach, prioritizing customer satisfaction and engagement, aligns with the study's goal of examining how customer knowledge management drives agility. Additionally, W's position in the luxury sector, where meeting the unique needs of discerning customers is critical, offers valuable insights into the relationship between customer knowledge and agile responses to market changes.

3.4 Interviews

Before conducting the case study, a detailed case was submitted to the company's Business Director, and ethical approval was secured, including legal review and informed consent from

participants. Nine experts from marketing, information systems, and management were interviewed, representing departments involved in customer strategy and data practices. Semi-structured interviews focused on data collection, customer knowledge development, and market responsiveness, with open-ended questions guiding the discussions. Participants shared examples of challenges and strategies in transforming customer knowledge into agility. Data was collected through interviews, observations, and supplementary materials, with triangulation ensuring reliability and validity of findings.

3.5 Analytic approach

In this study, we use the Gioia methodology, a qualitative analysis approach ideal for exploring complex organizational issues [Gioia et al., 2013]. Our process was iterative, alternating between data analysis and reviewing relevant literature to guide theme development. Each interview was independently coded using in vivo terms from informants' language. We grouped similar codes into first-order categories, continuing until no new patterns appeared. From these, we identified linkages to form second-order themes, which were more abstract but aligned with theoretical concepts. These themes were then organized into broader aggregate dimensions, forming the basis for a theoretical framework that connects key concepts.

4 Findings: the cyclical nature of customer agility

The results reveal three significant patterns by analysing the coded data points from the 1st-order concepts into the 2nd-order themes. The coding includes first-order concepts (those meaningful to the informants) and second-order themes (induced by the researchers). These elements collectively contributed to the creation of aggregate dimensions. The three significant aggregate dimensions identified are: sense, respond, and reconfigure. These dimensions reflect the organization's capacity to detect shifts in customer needs (sense), act swiftly and effectively on these insights (respond), and adapt its structures and strategies for ongoing market alignment (reconfigure). This study's findings align closely with Teece's dynamic capabilities framework, particularly in relation to the sensing, seizing, and reconfiguring capabilities [Teece, 2007]. While much of the existing research has focused on the "sensing" (identifying new opportunities) and "seizing" (capitalizing on those opportunities), our study uncovers the critical yet underexplored role of "reconfiguring"—the capability to continuously reshape and adapt organizational resources in response to changing environments.

4.1 Sense

The organization has developed a robust data collection system, combining automated and manual inputs to capture a comprehensive view of customer behaviors. While transactional data, profiles, and membership information are automatically collected, high-value customers receive an additional layer of attention. As the Clienteling Director highlighted, "Many of [our high-value customers] use a service called hands-free shopping... we know exactly where they shop, how much they spend, and we manually input that data into their profile." This manual data entry complements the automated systems, ensuring a more detailed and personalized customer profiling.

In terms of processing, the firm has enhanced its segmentation capabilities, allowing for more targeted customer communication. The Head of Strategy remarked, “We’ve improved our segmentation of email campaigns and the customer database, but it’s still a work in progress”. Efforts to balance internal and external data sources continue, with a focus on building internal expertise in data analytics.

Dissemination of customer knowledge has become more cross-functional, with real-time insights provided by dedicated teams of data analysts. As the Head of Digital notes, “We have assembled a cross-functional team of on-demand data analysts who are available at all times to provide real-time data analysis and reporting. Any manager can request a detailed analysis from them.” However, cultural barriers, especially among middle management, still challenge the broader adoption of data-driven decision-making. The organization remains committed to advancing its technological infrastructure and fostering a culture that fully embraces data insights across all levels.

4.2 Respond

The organization has shown strong adaptability in both communication and operations, particularly during the COVID-19 pandemic. By using membership data, it has personalized marketing efforts and aligned its tone with brand identity. As the head of Digital remarked, “This [membership] program enables us to gather extensive data on our guests, which we then use for targeted client segmentation.”. Operationally, the company responded swiftly by launching initiatives like virtual shopping and home delivery, maintaining customer engagement during critical times.

However, internal decision-making and execution remain challenging, with structural complexities slowing responsiveness. As the Chief Information Officer notes, “There’s a desire for agility, but decision-making can be slow due to the involvement of many people, especially for significant decisions.” Similarly, the Business Analyst 2 adds, “You can make quick changes...but the structure of the company is so complex, you need a lot of validation process for really everything.” These quotes highlight how, despite the push for agility, the intricate organizational structure imposes significant delays in implementing decisions and changes.

4.3 Reconfigure

Over the years, the organization has transitioned from instinct-based decision-making to a robust, data-driven approach under the leadership of its CEO. This cultural shift introduced performance reporting and a stronger analytical foundation across the senior leadership team. As the Chief Information Officer noted, “About 7 years ago, our CEO, introduced a culture of performance reporting... The senior leadership team acquired analytical skills over time.” The company also invests in talent development through graduate programs for business analysts and collaborates with consultancy firms for specialized analyses.

A key aspect of this reconfiguration is the continuous assessment of performance through limited but focused key metrics. As the Head of Insights explained, “Identify a very limited number of metrics that can be your key performance indicators.” These metrics, such as the percentage of total sales from members, allow for focused analysis and informed decision-making. Moreover, discrepancies between expected results and data insights prompt corrective initiatives, ensuring agility in addressing performance gaps.

The organization has embraced a culture of rapid data correction and continuous improvement. When irregularities arise, such as unusual data trends, swift action is taken to address them. “There was an unusual number appearing... so I fixed the dashboard,” a Business Analyst explained, demonstrating the proactive approach to data correction. This precision, combined with a commitment to basing decisions on data, ensures that the company continually reassesses and optimizes its strategies based on evidence-based insights.

5 Discussion

This study extends Teece’s framework of sensing, seizing, and reconfiguring [Teece, 2007] to customer agility, redefined as sensing, responding, and reconfiguring. It identifies key elements for transforming customer knowledge into a dynamic capability essential for adapting to changing customer demands.

Cross-functional data analysts

The case study highlights the importance of cross-functional data analysts who provide real-time insights across departments. Eisenhardt and Martin [Eisenhardt & Martin, 2000] argue that dynamic capabilities involve processes enabling organizations to reconfigure resources in response to changes. The integration of customer knowledge across functions facilitates a more agile approach, with analysts ensuring that insights are effectively utilized, embodying the dynamic capabilities of sensing and reconfiguring.

Data-Driven Culture

A strong data-driven culture, supported by top management including the CEO, is crucial for data-informed decision-making. According to Eisenhardt and Martin [Eisenhardt & Martin, 2000], dynamic capabilities require embedded routines and processes. The Head of Data Analysts, advising the CEO, ensures decisions are based on empirical evidence, bridging the gap between data insights and executive actions, and enhancing the firm’s responsiveness and adaptability.

Evolving Segmentation Strategy

The need for an evolving segmentation strategy is emphasized, allowing the organization to adjust customer segments according to changing goals. Zollo and Winter [Zollo & Winter, 2002] discuss how deliberate learning contributes to the evolution of dynamic capabilities. A dynamic segmentation approach ensures that customer segments are continuously updated, reflecting the capability of reconfiguring to maintain competitiveness in a rapidly evolving market.

In summary, this study integrates Teece’s framework with the insights of Eisenhardt and Martin [Eisenhardt & Martin, 2000] and Zollo and Winter [Zollo & Winter, 2002] on dynamic capabilities. Leveraging cross-functional data analysts, fostering a data-driven culture, and implementing an evolving segmentation strategy enable organizations to enhance agility and competitiveness in the digital age.

6 Conclusion and future works

In conclusion, this study has demonstrated that the adaptation of Teece’s dynamic capabilities framework to customer agility—through sensing, responding, and reconfiguring—provides valuable insights for organizations seeking to enhance their adaptability in a rapidly evolving market. The research highlights the importance of cross-functional data analysts, a data-driven

culture led by top management, and an evolving segmentation strategy as critical components for achieving customer agility. Organizations that effectively integrate these practices can better navigate changing customer demands and improve their responsiveness. Future research should aim to explore how these practices are implemented across various industries and their long-term impacts on firm performance. Developing a comprehensive understanding of how different sectors adapt these strategies will provide deeper insights into their scalability, efficiency, robustness, and effectiveness. Moreover, some challenges remain in converting customer knowledge into actionable agility, particularly due to potential cultural barriers or structural complexities within organizations. Framing these obstacles visually in future studies and exploring them in more depth could offer a valuable direction for understanding the practical limitations and enablers of customer agility in diverse organizational contexts.

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