Enhancing Supply Chain Management Performance Through E-CRM Implementation

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***Abstract*— This paper aims to explore practical ways in which Small and Medium Enterprises (SMEs), considering their limited resources and capabilities, can harness the benefits of E-Customer Relationship Management (E-CRM) to optimize and improve their Supply Chain Management (SCM) performance. An in-depth case study within a family SME demonstrates how E-CRM contributes to improving key elements of supply chain performance, including demand forecasting, inventory management, delivery routes, and returns management. The measured impact on customer satisfaction, delivery punctuality, order processing time, demand forecast accuracy, and inventory costs reaffirms the value of E-CRM in improving overall SCM performance. The contributions of the study include integrating E-CRM and SCM concepts, addressing implementation challenges, and offering valuable guidance for SMEs aiming to improve logistical performance through E-CRM.**

Keywords*—*Supply Chain Management, Logistics performance, Customer Relationship Management, Customer service, Demand visibility, Family SME, Inventory management.

I. INTRODUCTION

Small and Medium-sized Enterprises (SMEs) are widely recognized as the backbone of economies worldwide, playing a pivotal role in economic development. They are also known for fostering innovation [1], creating employment opportunities [2], and contributing to economic growth [3]. Their agility and adaptability make them key players in the economic landscape. Despite their significance, SMEs face inherent challenges, such as limited human, financial, and technological resources [4]. These limitations compel them to adopt effective strategies to ensure their survival and competitiveness in dynamic markets.

In this context, prior research has demonstrated that the sustainability and resilience of SMEs are closely tied to their ability to strategically incorporate supply chain management (SCM) practices. This integration is pivotal for providing high-quality products and services while simultaneously streamlining operations, reducing costs, and enhancing overall performance [5,6].

However, the challenge of measuring SCM performance arises from the broad spectrum it covers [7,8]. In fact, the literature in the SCM highlights efficiency and effectiveness in logistical activities as key indicators of their performance, with some authors introducing a third dimension – differentiation - emphasizing customer value resulting from logistical activities [9-11]. This shift towards differentiation aligns seamlessly with the growing importance of customer-centric strategies, where the focus extends beyond operational efficiency to creating a personalized and enriching customer experience [12]. Considering this, the integration of E-CRM into SCM practices provides an opportunity for SMEs to leverage digital technologies and data analytics in delivering a personalized and effective customer experience [13-15]. The intersection between E-CRM and SCM lies in their joint ability to enhance customer satisfaction and overall SC and business performance [16]. Therefore, the alignment of E-CRM and SCM creates a symbiotic relationship, fostering a holistic approach to customer-centric operations and ensuring sustainable business growth [17].

This article falls within this perspective and aims to explore and emphasize practical ways in which SMEs, considering their limited resources and capabilities, can harness the benefits of e-CRM to optimize and improve their SCM. To address this topic, an overview of E-CRM and SCM will be presented first, and the methodological approach will be outlined. In the empirical part, an in-depth case study within a family SME will be conducted. The findings from the principal units of analysis will then be presented and discussed. Finally, the theoretical and practical implications will be highlighted to underscore this study's contribution to both theory and practice

II. THEORETICAL BACKGROUND

A. E-CRM : An overview.

E-CRM refers to the application of digital technologies, particularly the use of the internet and electronic channels, in managing and enhancing customer relationships. It involves leveraging electronic communication tools, online platforms, and automated systems for customer interaction, behavior analysis, and personalized marketing and service efforts

[18,19]. Also, E-CRM represents customer management tailored for e-business, addressing the challenges of handling sophisticated customers and business partners through diverse media channels and contributing to the implementation of a company's CRM and marketing strategy. It emerged through the integration of traditional CRM with the e-business applications market, positioning itself at the intersection of two notable industry developments—the thriving Internet market and the growing focus on customer-centric strategies [20].

In this context, it is important to emphasize that E-CRM goes beyond being a mere technological application; it embodies a broader business philosophy [21]. Even though the convergence of Internet and CRM may seem inevitable, technology serves as a facilitator for a pre-defined CRM strategy [22].

E-CRM has become a prevalent management approach in contemporary business practices. Its primary objective is to identify, cultivate, and enhance enduring customer relationships. It aims to optimize customer interactions, enhance satisfaction, and foster long lasting relationships through the effective utilization of electronic and digital resources [23].

To achieve these objectives, E-CRM demands a synergistic blend of human, technological, and business competencies to effectively comprehend, predict, and address the needs of an organization's current and potential customers [24]. Its implementation requires substantial organizational changes [25]. These organizational changes are integral, especially when considering the three components of CRM, namely operational CRM, analytical CRM, and collaborative CRM.

Operational CRM encompasses the management of marketing channels, information flows, customer events, work rhythms, and all communication and marketing actions directed at clients, coordinating the interaction channels between a company and its customers by synchronizing information across marketing, sales, and services [26]. Its primary role lies in coordinating the front office with the middle and back office, optimizing their relationships and expanding traditional marketing activities to include sales, particularly when a company undergoes partial or complete sales force automation. Operational CRM involves data collection, transaction processing, and workflow control in sales, marketing, and service functions [27]. Key functionalities include marketing, sales force, customer service automation, and reporting.

Analytical CRM involves exploiting customer information and purchase behavior to gain a deeper understanding of clients. Analytical CRM aids decision-making processes by establishing typologies, segmentation criteria, and structuring product and service ranges. Common tools include data warehousing for storage, data mining for extraction and sorting, scoring for client evaluation based on results, and profiling for customer segmentation assistance. Analytical CRM enhances profitability, operational efficiency, ensures impeccable customer service, generates new revenue opportunities, and provides a competitive advantage [12]. Predictive techniques within Analytical CRM derive new customer insights from existing data, enhancing the effectiveness of adopted CRM strategies. This approach involves three primary categories of data analysis, namely historical data analysis for performance and past customer behavior, customer-centric data analysis for predictive insights into potential customer relationships, and market data analysis focusing on customer segments and purchasing habits [28].

Collaborative CRM focuses on integrating and synchronizing various communication channels to serve customers consistently [29]. It enables companies to share customer information collected from interactions across departments such as sales, marketing, customer service, and technical support at all touchpoints to better serve customers, consolidating processes and data for more effective customer service. The core elements of collaborative CRM include interaction management and channel management, which aim to improve interactions between the company and customers, ultimately fostering increased customer loyalty. Additionally, collaborative CRM applications empower employees by providing efficient tools for handling customer data, communication, and contacts [30].

B. SCM performance and interaction with E-CRM.

The supply chain (SC) refers to a network of entities (suppliers, factories, distributors, logistics providers, retailers, customers etc.) involved in the production and distribution of goods or services, from the acquisition of raw materials to the delivery of the final product to the consumer [18]. It typically includes procurement, manufacturing, logistics, distribution, retail, and consumption, and requires the coordination and integration of various entities, ensuring the seamless flow of materials, information, and resources throughout the entire process [31,32]. Hence the role of the Supply Chain Management (SCM), which is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model (CSCMP, 2013)[1]. Actually, a performant SCM involves optimizing processes to ensure efficiency, cost-effectiveness, and timely delivery [33,34]. This optimization requires coordination and collaboration among various stakeholders to streamline the flow of goods and information throughout the entire chain [35]. Advanced technologies, data analytics, and communication systems play a crucial role in modern SCM, enhancing visibility, reducing costs, and improving overall performance [36].

In fact, the SCM performance is intricately tied to several key elements, each playing a crucial role in optimizing overall efficiency and effectiveness [37].

[1] The Council of Supply Chain Management Professionals CSCMP (2013) p. 187. SCM Definitions and Glossary of Terms (cscmp.org)

One fundamental aspect is **information systems capability**, which acts as a linchpin in SCM. The application of information system in SCM involves the utilization of inter-organizational systems for seamless information sharing and processing [13]. Due to the complexity of SCM, companies are compelled to adopt online communication systems. For SMEs, the common approach is to build basic IT capabilities [38].

The strategic supplier relationship relationship emerges as a pivotal factor in SCM capability, particularly for SMEs striving for operational excellence. At the operational level, SMEs can derive significant benefits by nurturing close relationships with key suppliers, leading to improvements in product quality, faster delivery times, and cost reductions. Strategically, such partnerships are poised to enhance product quality, stimulate innovation, bolster competitiveness, and expand market share [39].

Additionally, **the delivery lead time** is recognized as an important aspect in evaluating the SCM performance. Essentially, it measures the efficiency and speed of the entire SC in delivering goods to their intended destinations. In fact, a shorter delivery lead time is generally indicative of a more agile and responsive SC. It implies that the SCM processes, including internal integration and logistics coordination, are well-optimized, leading to quicker transportation and distribution of products. This is significant in meeting customer demands promptly, reducing the risk of stockouts, and enhancing overall customer satisfaction [40].

The cost of customer service stands out as another key determinant in assessing the SCM performance. Academic research highlights that efficient customer service contributes to service improvement and lower costs, influencing SCM strategies, operations, and overall business performance [13]. The adoption of SCM by SMEs contributes to consolidating component requirements, improving forecasting accuracy, and managing erratic demands. Furthermore, there is an increasing emphasis on customer and end-consumer focus, facilitated by the implementation of technologies such as CRM, aimed at reducing customer service costs [41].

In summary of this literature review, it is evident that the implementation of E-CRM technologies aligns closely with the performance indicators of SCM. This integration provides a comprehensive solution for optimizing information sharing, enhancing customer and supplier relationships, and improving customer service efficiency. Consequently, this enhances the overall performance of SCM. In the following case study, we will explore a strategic application of this approach by detailing how SMEs can leverage E-CRM technologies to significantly enhance their SCM performance.

III. METHODOLOGY

A. Research strategy

In order to better understand how E-CRM could enhance SCM performance, it is essential to delve into the specific ways in which E-CRM can positively impact different aspects of SCM efficiency. Hence, the need to conduct a qualitative study aimed at providing a descriptive and conclusive analysis. Utilizing a small sample size allows for in-depth exploration, and employing a broad range of questioning facilitates the collection of rich, detailed data. The subjective interpretation of responses provides nuanced insights, enabling a comprehensive understanding of the subject matter [42].

Among qualitative methods, case studies play a particularly important role, as they represent one of the most adopted qualitative methods in organizational studies, especially, in the context of family business [43]. Since the case study approach is suitable when the form of the research question is 'how', which is clearly met in this research, and since it allows in-depth, multi-faceted explorations of complex issues in their real-life settings [44], we opted for it as a research strategy to develop a detailed understanding of the phenomenon through its intensive study [45]. It allowed us to explore the family-owned SME in detail and benefit from access to rich and varied data [46].

B. Sampling method and case selection

In the case selection process, we followed a non-statistical sampling strategy. The case selection is based on their relevance to study questions and their unique opportunities for research access [43]. Additionally, non-statistical sampling procedures are advocated in family business research due to the absence of a universally accepted definition and nationwide statistics pertaining to this organizational form.

In brief, the rationale for a single case study is well supported in this context for two reasons:

- ✓ The primary objective is to gain a comprehensive understanding of the subject under examination, and the unique case study facilitates a holistic and thorough examination of the case.
- ✓ Deep access to the organization is imperative for the researcher, as information relevant to this type of subject matter is frequently latent and sometimes confidential [45].

In our study, we employed convenience sampling. It is a type of non-probabilistic or non-random sampling where members of the target population meet certain practical criteria, such as ease of access, geographical proximity, availability at a given time, or willingness to participate [47].

"ProDesk" (anonymized) was chosen for three reasons:

- Firstly, the company meets the selection criteria. It is a family SME with a turnover of less than 75,000,000 Moroccan Dirhams, employing less than 200 people[2], wholly owned by members of the same family, with 3 members involved in management and leadership roles.
- Secondly, managers demonstrated great empathy and a willingness to cooperate.
- Thirdly, the case provides a suitable framework for study. Previous investigations indicate that the company has experienced rapid expansion in a relatively short period,

[2] Law No. 53-00 forming the charter for small and medium-sized enterprises (Dahir No. 1-02-188 of 12 Jumada I 1423 (23 July 2002), published in the Official Gazette No. 5036 on 15/09/2002).

mainly attributed to its resilience capabilities and the dynamism of the second generation in management [48-51]. These findings are crucial for identifying valuable insights and best practices to enhance SCM performance.

C. Data collection and analysis

When the research strategy is established, the next step of the process is to gather empirical data. To enhance the validity and the reliability of our study, various kinds of data have been requested. Secondary data were obtained from the internal documentation and statistics of the company. Primary data were collected through semi-structured interviews with the help of a structured interview guide [52].

This method enables us to obtain very detailed information. Moreover, additional knowledge is generated thanks to questions that arise when interviews are conducted, which is a key strength of this qualitative interview method [53].

Given the specificity of the covered topics, the choice of respondents was based on the principle that information is best gained through persons who are actively involved in the phenomenon under investigation. Therefore, informants must have a position related to supply chain and marketing activities. After preliminary interviews, we judged that the production manager (Middle son) and the marketing and sales manager (Eldest daughter) are the persons able to answer our queries.

The interview guide was established based on the study's objectives. The questions are listed and categorized by theme. The table 1 below presents a summary of the main topics discussed during the interviews.

Table 1: The main elements of the interview guide.

Theme	Related questions
Interviewees' Profile	Academic and professional background, current position in the company, main tasks and responsibilities … etc.
Company presentation	History, evolution, industry sector, customer typology and profile, competition, human and technological resources, values, succession and consecutive generations, family members involved … etc.
E-CRM within the company	Adopted technologies, motivations behind, planning, implementation process, interaction with existing supply chain management system, internal challenges … etc.
Interaction between E-CRM and supply chain	Demand visibility, inventory management decisions, personalization of logistic services, storage costs, delivery itineraries and costs, communication with customers, management of product returns …etc.
Performance measurement	- Impact of E-CRM technologies on the supply chain performance. - Impact on customer satisfaction.

Source: Authors.

The information collected is recorded and transcribed as the interviews progress. Concerning the data analysis, and since we have a unique case study, we chose to conduct a manual content analysis. It is a qualitative method designed to enhance the objectivity and reliability of interviewee statements for scientific treatment [54]. It entails a systematic and methodical review of transcribed interviews, wherein the researcher endeavors to minimize biases and ensure the objectivity of the research. To guarantee the reliability and validity of our findings, we submitted the interview transcripts to key informants for examination, discussion, and consolidation. Upon the managers' request, the company's name and some details have not been disclosed.

IV. RESULTS

A. Presentation of the company and the interviewees

ProDesk (anonymized) is a Moroccan family-owned SME that has firmly established itself as a key player in the manufacturing sector, specializing in high-quality office furniture, school equipment, and workspaces. ProDesk markets a wide range of products, catering to both local and international market, all crafted through its 100% in-house manufacturing process, and mainly engaging in business-to-business transactions.

The company has a workforce of 72 employees, and its ownership is entirely familial. Three family members are actively engaged in both production and management roles. Since its creation, no ownership transition has taken place, and there is currently no formal succession plan. However, the founder is implicitly preparing his descendants for this eventuality.

The figure 1 below illustrates the trajectory of the company's turnover in Moroccan Dirham (MAD) in the last 8 years.

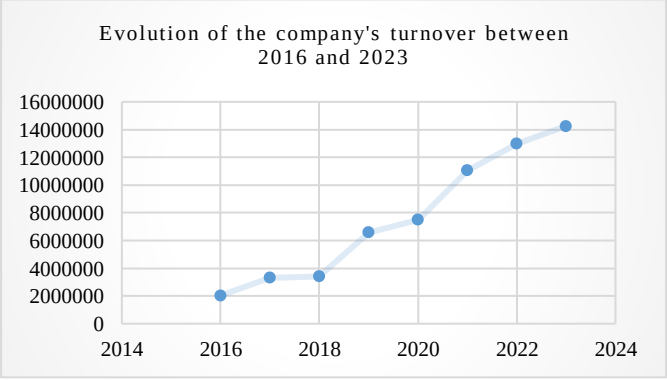

Figure 1: Evolution of the company's turnover between 2016 and 2023 in Moroccan Dirham.

Despite its continuous growth, ProDesk maintains a streamlined administrative structure. Nevertheless, the company presents itself as a dynamic family-owned SME that champions innovation, quality, and a collaborative approach to success, facilitated by the involvement of the second generation and their diverse backgrounds and training. Additionally, a collaborative decision-making process remains central to the company's strategy, involving directors and managers in shaping ProDesk's future initiatives. This family-centric approach stands out as a key success factor for the SME.

As part of our study, we interviewed the owner-manager, the production manager, and the sales and marketing manager.
Their profiles are as follows:

- ✓ The owner-manager: Before starting his own business, he worked in the field of manufacturing office furniture and equipment within a family-owned SME created by his father, where his older brother was also a part. After the father's passing and due to disagreements with his older brother, he left the family-owned SME established by his father. He worked for competitors to further develop his skills and then went on to create his own business. Thanks to his professionnal background, he has accumulated unparalleled expertise in the manufacturing field and wishes to transfer his knowledge to his descendants, ensuring they can effectively run the business and be prepared for a transition that could occur at any time.
- ✓ The sales and marketing manager: Adding a dynamic touch to the SME, the eldest daughter, holding a master's degree in digital marketing, oversees administrative tasks, drives innovative marketing strategies, and CRM initiatives. Her digital proficiency has opened new avenues for ProDesk, ensuring a strong online presence and effective customer engagement. Moreover, her responsibilities include developing and implementing the marketing strategy, managing advertising campaigns, maintaining positive customer relations, exploring new business opportunities, and coordinating social media activities. Her role aims to strengthen the brand presence, boost sales, and ensure the continuous growth of the company.
- ✓ The production/quality manager: The eldest son holds a diploma in industrial manufacturing in addition to a certification in quality management. His main responsibilities encompass the complete supervision of the production process. This includes planning and optimizing operations, maintaining high-quality standards for each product, and managing the technical teams. He is responsible for ensuring the efficiency of production lines, compliance with technical specifications, and implementing continuous improvement initiatives. His role also involves coordinating with other departments to ensure operational harmony and achieve quality and performance objectives.

In summary, ProDesk emerges as a successful and expanding family-owned SME, prioritizing quality, innovation, and collaboration, propelled by a dynamic second generation actively engaged in pivotal roles.

B. E-CRM within the company: An overview.

The second main topic of our interviews focused on the description and the study of E-CRM related issues such as the adopted technologies, the motivations behind, the planning and the implementation process, the interaction with the existing management system, and the internal challenges.
According to the managers, E-CRM adopted tools has been a key initiative to enhance relationships with customers and to improve the quality and the efficiency of operations.

The first step was a thorough assessment of needs: « *We identified key customer touchpoints, from the ordering process to delivery, and aimed to improve each stage* ». As a result, the E-CRM tools adopted serve as extensions of the information system, integrating nearly all functions within the SME. These tools include an updated order tracking system, data warehousing, and data mining to enhance understanding of customer preferences, along with a returns management system.
The motivations behind these initiatives were multifaceted: « *we wanted to offer our customers a transparent and personalized experience* ». By better understanding their needs, the company can anticipate and respond to them proactively. Additionally, E-CRM has improved operational efficiency by optimizing logistics processes and reducing order processing times.
The planning for this transition was meticulous but gradual, involving almost all employees. Training was a priority to ensure successful implementation of the new tools. To overcome the challenges of interacting with other management systems, the company collaborated closely with the technology solutions provider, ensuring a seamless and consistent integration. This allows E-CRM data to feed into the logistics system, thereby enhancing decision-making and improving inventory planning.
Regarding internal challenges, these were mainly related to slight resistance to change. The managers explains: « *through transparent communication and demonstration of the tangible benefits of E-CRM, we overcame these obstacles*. *Overall, this initiative has been a growth driver for our family-owned SME, strengthening relationships with our customers and improving our operational efficiency and productivity*».
It should be noted that all integrated solutions were acquired from a local provider. Therefore, every modification, customization, or technical issue was easy to overcome thanks to the close and cooperative relationship with this provider.
In conclusion, ProDesk's strategy in implementing E-CRM technologies demonstrates a thoughtful and strategic approach, effectively addressing customer-centric needs, overcoming internal challenges, and leveraging a close relationship with a local solutions provider to achieve growth and operational improvements

C. Interaction between E-CRM and SCM.

The implementation of E-CRM tools had a significant impact on several key aspects of the business. The illustrating data has been collected and organized in the following table 2.
Table 2: E-CRM impact on logistics operations within the company.

Element	Example of E-CRM influence
Visibility on demand	E-CRM tools provide crucial data on customer purchasing behavior, purchasing preferences, and market trends. Integrating this information into SCM enhances demand forecasting. This allowed the company to anticipate demand, predict activity peaks and adjust logistics operations accordingly. The

Element	Example of E-CRM influence
	statement from the production manager illustrates this: "*Now we have a more precise vision of demand. The customer data collected allows us to anticipate fluctuations in demand adjust our stocks accordingly and optimize our production to effectively meet market needs*." He adds: « *For example, if we observe an increase in orders for a specific product, we can adjust our inventory levels and optimize our supply chain to meet this growing demand*. In brief, improved comprehension of customer needs facilitates more accurate production and stock planning, ultimately leading to increased efficiency in supply chain management.
Inventory management and storage costs	The integration of E-CRM into supply chain operations has impacted inventory management. By better understanding customer preferences and anticipating seasonal variations, the company reduces excess inventory levels while maintaining adequate supply. Another point is real-time order tracking via E-CRM. This makes it possible to provide precise information to customers on the status of their deliveries. At the same time, this data is used by the logistics department to efficiently coordinate the preparation, packaging and shipping of orders. Additionally, improved inventory management had a direct impact on storage costs. The production manager explains: "*By optimizing our stock levels, we have managed to reduce the costs associated with excess storage and maximize the efficient use of our warehouses*."
Delivery routes and costs	E-CRM enabled more meticulous planning of delivery routes. This has not only reduced delivery costs but also improved on-time delivery, thereby improving customer satisfaction. Managers explain: "*By leveraging customer data, we can now strategically organize and optimize our delivery schedules*." The impact is twofold: a) A notable reduction in delivery costs has been achieved through streamlined and efficient route planning. b) Implementing this precise planning has significantly improved on-time delivery. As a result, customers receive their orders faster, leading to an overall improvement in customer satisfaction with the company.
Product returns management	Another crucial aspect is the management of returns. The data collected by E-CRM helps the company to understand the reasons for returns, enabling to adjust the supply chain processes and improve the quality of products. In this context, the manager gives a concrete example: « *we identified a significant trend in returns linked to insufficient product descriptions on our website. By analyzing this data, we tried to improve the clarity of product descriptions either on the website or in catalogs by providing more detailed information, additional images, and user guides. Thanks to this change, the number of returns due to unmet expectations has decreased significantly* ». Consequently, expenses related to returns, such as fees for reverse shipping and the restocking of returned items, have seen a reduction.

Source: Authors.

D. Performance measurement.

Measuring the impact of adopting E-CRM technologies on the supply chain performance of the studied company is a crucial step in its evaluation. To achieve this goal, managers track various indicators:

- ✓ Customer satisfaction which is evaluated through direct customer feedbacks and satisfaction surveys. The customer satisfaction is influenced by 2 other underlying indicators, namely:
- ✓ Punctuality of delivery: which is expected to improve with the contribution of E-CRM in delivery management (e.g. route planning).
- ✓ Order processing time: This indicator evaluates the processing time of orders, from receipt to delivery. E-CRM helps to increase efficiency and should therefore reduce order processing time.
- ✓ Demand forecast accuracy is assessed by analyzing how well demand forecasts match actual sales, thereby assessing the ability of E-CRM to anticipate market needs.
- ✓ Costs associated with inventory management, including storage costs, are measured by assessing how optimal inventory levels are maintained through the contribution of E-CRM, thereby avoiding unnecessary surpluses.
- ✓ Return rate is a crucial indicator, and thanks to E-CRM, understanding the reasons for returns allows logistics processes to be adjusted to minimize returns and associated costs.

V. DISCUSSION

Increased visibility on demand

The integration of E-CRM tools into the SC operations has enabled the company to gain a comprehensive understanding of customer purchasing behavior, preferences, and market trends. This aligns with previous research in SCM that emphasizes the importance of having visibility into demand dynamics to enhance operational efficiency [55]. Also, the company's ability to anticipate fluctuations in demand and adjust logistics operations accordingly reflects a proactive approach, contributing to more precise production and stock planning.

Improved inventory management and reduced storage costs

E-CRM's impact on inventory management is consistent with established principles highlighting the role of technology in optimizing stock levels [55]. Real-time order tracking via E-CRM allows the company to provide accurate information to customers about their deliveries and enables the logistics department to coordinate order preparation, packaging, and shipping more efficiently. The reduction in excess inventory levels and associated storage costs showcases the practical application of E-CRM in maintaining a balance between supply and demand.

Optimization of delivery routes and costs

The optimization of delivery routes through E-CRM reflects the recognized benefit of technology in logistics planning and cost reduction. The use of customer data for strategic organization and optimization of delivery schedules aligns with research that emphasizes the importance of data-driven decision-making in supply chain management [56].

Additionally, the twofold impact of cost reduction and improved on-time delivery underscores the positive effects of E-CRM on customer satisfaction and overall logistics efficiency.

Enhancing the management of product returns

E-CRM's contribution to product returns management is in line with the acknowledged importance of reverse logistics in supply chain operations. The identification of trends in returns through E-CRM data allows the company to adjust its supply chain processes, demonstrating a proactive response to customer feedback. Moreover, the reduction in expenses related to returns, such as reverse shipping fees and restocking costs, underscores the financial benefits of using E-CRM insights to enhance product quality and meet customer expectations.

In conclusion, the company's experience with the integration of E-CRM into SCM operations aligns with the principles established by the literature on SCM and the role of CRM tools [15,16, 56]. The improvements in demand visibility, inventory management, delivery optimization, and returns management collectively contribute to a more efficient and customer-centric logistics operation. The successful integration of E-CRM tools demonstrates the practical value of leveraging technology to enhance various facets of SCM.

Performance measurement

The evaluation of E-CRM technologies' impact on the SCM performance of the studied company involves assessing various indicators to gain insights into operational efficiency and customer satisfaction. Customer satisfaction is measured through direct feedback and surveys, with punctuality of delivery and order processing time serving as key underlying indicators.

The demand forecast accuracy is assessed by comparing forecasts to actual sales, indicating E-CRM's effectiveness in anticipating market needs.

The measurement of costs related to inventory management involves assessing E-CRM's role in maintaining optimal inventory levels. Understanding return reasons through E-CRM allows adjustments to minimize returns and associated costs.

Overall, the evaluation strategy reflects a holistic approach, considering both traditional business metrics and customer-centric indicators, showcasing the comprehensive impact of E-CRM on SCM performance and customer satisfaction.

VI. CONCLUSION

In conclusion, this case study illustrates the positive impact of E-CRM implementation on SCM performance within SMEs. Integrating digital technologies enhances customer relationships and optimizes various supply chain operations. The findings underscore the importance of aligning E-CRM and SCM strategies to achieve a customer-centric, efficient, and cost-effective supply chain. Moreover, the study highlights the significance of a strategic and phased approach to E-CRM implementation that engages all levels of the organization. Overcoming resistance to change through transparent communication, training, and emphasizing tangible benefits emerges as crucial to successful implementation

Furthermore, this case study provides practical insights into how E-CRM enhances key elements of supply chain performance, including demand forecasting, inventory management, delivery routes, and returns management. The measured impact on customer satisfaction, delivery punctuality, order processing time, demand forecast accuracy, and inventory costs reaffirms the value of E-CRM in improving overall SCM performance.

Theoretical contributions of this study include integrating E-CRM and SCM concepts, practical applications in the context of SMEs, comprehensive exploration of SCM performance indicators, and addressing implementation challenges. Overall, the study highlights the symbiotic relationship between E-CRM and SCM, offering valuable insights for academics and practitioners aiming to enhance supply chain performance within the dynamic landscape of SMEs, considering their limited resources and capabilities. Business leaders can leverage these findings as a guide to make informed decisions about implementing E-CRM technologies and understanding their positive impact on logistical performance.

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