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Customer relationship management: digital transformation and sustainable business model innovation

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ABSTRACT

The point of departure for this study is the understanding of customer relationship management (CRM) as a set of technological solutions key for efficient business management, the benefits of which, highlighted by previous works, are presented and defined here as crucial for entrepreneurial success. Of particular interest for this purpose are the existing studies on sustainability, which provide a viable research model to assess and validate the potential effect of each CRM component (sales, marketing, and services) on the three dimensions of sustainability (economic, environmental, and social). Upon confirmation of our hypotheses, the subsequent validation of such model should bring a better understanding of the way in which CRM-related benefits may increase the positive impact of its components on each dimension of sustainability. CRM can hence be considered a sort of Green IT, oriented toward digital transformation and sustainable business model innovation. Indeed, this research model may be the basis for a more specific methodology to measure the impact and benefits of applying CRM, understood, as we will contend, both in terms of sustainable business models and innovation.

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Customer relationship management; sustainability; green IT; common goods; customer knowledge management; innovation

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Introduction

This paper proposes a research model to analyse how customer relationship management (CRM) brings small and medium enterprises (SMEs) a dual benefit, in terms of both customer knowledge management (CKM) and innovation. This confluence of interests and benefits is a key point to consider CRM a critical tool for **business model innovation**, driving SME efforts toward **economic, social and environmental sustainability**. Traditionally, SMEs have been the cornerstone of the European economy, comprising over 99% of all European companies, and two thirds of the private-

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sector jobs (European Commission, 2013). Thus the impact of CRM on SMEs is of special interest given the social and economic relevance of this sector.

Customer knowledge management and innovation are the two key modern-firm drivers for a set of successful survival, growth, and development strategies, enhancing business efficiency, performance, and sustainable competitive advantage (Pil & Holwelg, 2003). Indeed, knowledge has been defined as the most important strategic resource for (Eisenhardt & Martin, 2000), and even the core element of (Lusch, Vargo, & O'Brien, 2007), sustainable competitive advantage. Nonaka and Takeuchi (1995) argue that both innovation and competitiveness require knowledge. As result, Prahalad and Ramaswamy (2004) further state that knowledge and innovation are inalienable and inseparable. In this sense, operating Customer Knowledge Management through collaborative innovation shows an efficient path for knowledge-sharing, and therefore, successful innovation practices (Alegre, Kishor, & Lapiedra, 2013). Indeed, Prahalad and Ramaswamy (2004) understand customer collaboration as a modern anchor of customer knowledge management and innovation, as well as a system enabling successful organisations to learn from their customers' needs how to meet their demands and improve performance. This call to consolidating and integrating customer collaboration and customer-need knowledge is what CRM seeks to respond to as both a strategic tool and business philosophy for leading firms.

CRM emerged in the 1970s (Buttle, 2004) as a new tool for managing and optimising sales-force automation within companies. Eversince, it has become one of the most popular tools for enterprise information management, not only for sales and marketing purposes, but also for more effective Customer Interaction (King & Burgess, 2007) and customer knowledge management, as well as for the understanding of organisational behaviour. Chen and Popovich (2003) define customer relationship management as an integration of processes, human capital and technology seeking for the best possible understanding of a company's customers. Besides, if we place our focus particularly on customer retention and relationship management, CRM is the most recent integrational approach available for relationship management.

A firm willing to survive and improve its position in the market needs to excel both in its exploitative and exploratory innovation (Tushman & O'Reilly, 1997), despite the organisational tensions resulting from both trends (March, 1991). Such mix of current exploitation and prospective exploration is the principle for **sustainable business models** as the core of modern and dynamic businesses. In this light, the interest of the current study is clear: it intends to prove CRM an efficient technological solution to help companies in the current exploitation of their resources, as well as to explore and innovate in all areas leading to sustainable economic and financial growth.

The results of this research model, applied to any specific company, will show the impact of deploying and using customer relationship management, both in terms of customer knowledge management and innovation. The structure of this paper begins with a literature review revolving around the concept of CRM and its benefits. It is through these initial readings, dwelling on the modern concept of CRM and its impact on dynamic firms, translated both as technological and organisational change,

that we have understood the need to conduct further research on the two main variables of ambidextrous organisations: customer knowledge management (as the exploitation process), and innovation (the exploration process). Both areas will accordingly be studied and reviewed not only as isolated features, but also in their specific relationship to CRM.

Materials and methods

The initial part of our literature review pinpoints both the concept and acknowledged benefits of CRM, hence laying the foundations for future research seeking to measure the impact of CRM on key business indicators.

The second part of such review is then centred on two crucial variables of ambidextrous organisations, the first one being customer knowledge management, a core aspect of the exploitation process. Here, the relationship between customer knowledge management and CRM should also be considered since it could determine the actual benefits of implementing CRM in companies.

The second main variable involved in our review is innovation, analysed in combination with CRM as a skill with direct and valuable impact on the latter. Innovation has proven the most relevant dimension when working with CRM as key tool to attain sustainable business models, critical as it may be to ensure the prospective sustainability and increase of its up-to-date related benefits.

CRM: concept and benefits

Customer relationship management comprises a set of software tools specially devised to command the three axes of firm-customer relations (Chen & Popovich, 2003): sales, marketing, and services.

In fact, Scullin, Allora, Lloyd, and Fjermestad (2002) state that electronic CRM has become the latest paradigm in the world of customer relationship management, as modern companies have understood the need to evolve in an environment-sensitive manner to succeed with their marketing strategies. Since its emergence, CRM has had the globally accepted, primary goal of both attracting and retaining economically valuable customers, while leaving the less profitable ones aside (Romano, 2000). Considering the linearly growing interest in CRM since the 1970s, Romano and Fjermestad (2002) have considered it one of the most important areas of study for applied sciences in the near future. In today's world, with online market trade constantly growing, it's become critical to gather, analyse and process all customer data that SMEs may be able to collect in order to turn first-time online purchasers into loyal customers. Such challenge is underscored by a study from the Boston Consulting Group, indicating that 65% of online customers making a first-time purchase on a given website will never purchase again from it. On his part, Sims (2000) has shown that CRM is a very valuable tool for web-enabled companies to fill the service gap discouraging users from purchasing anew on the same online outlet after a first time.

CRM enhances a company's capability to coordinate marketing and service strategies in the means of reaching and retaining long-term partnerships (Sin, Tse, & Yim, 2005). Since the basic strategic goals of each organisation include long-term growth and sustainability (Pohludka, Stverkova, & Ślusarczyk, 2018), the need to meet customer needs and demands, as well as to improve customer satisfaction is considered the main CRM target (Aggarwal, 1997; Claycomb, Droge, & Germain, 1999). In this sense, Joo (2007) has stated that a customer-centered focus is key for business success in the modern market world, its underlying principle being that a good CRM strategy can be reached by enhancing customer loyalty (Huang & Lin, 2005).

The implementation and use of CRM in SMEs brings direct benefits in terms of both financial performance and daily business activity. In other words, improvements in the overall customer experience lead to greater customer satisfaction, which in turn has a positive effect on the company's profitability (Scullin et al., 2002), with the following particular gains: increased customer loyalty; a more effective marketing strategy; improved customer service and support; greater efficiency; and cost reduction.

Regarding Customer Loyalty, CRM allows companies to centralise and integrate both their transaction records and customer data, making this information accessible and manageable to all key stakeholders in order to identify the loyalest customers (Epiphany.com, 2001) and the most effective marketing activities. Waltner (2001) considers personalisation software tools as one of the key elements for increased customer loyalty. Most definitely, in today's highly competitive market ecosystem there is a growingly critical need for SMEs to diversify the risk of losing major customers (Arsić, Banjević, Nastasić, Rošulj, & Arsić, 2018).

Marketing becomes more effective when firms deploy CRM due to the highly detailed customer information gathered through interaction. This information allows customer decision-making prediction, which translates into more effective and personalised marketing campaigns for successful companies, with a higher impact on their sales and profitability (Greenberg, 2001). In fact, Rong, Wang, and Liao (2001) have argued that customer information can facilitate customer segmentation and thus make marketing efforts more effective, because grouping customers according to their market needs allows companies to reach target groups through segment-tailored marketing efforts.

Customer Service and Support is another market feature subject to enhancement through CRM, encouraging a thorough understanding of consumer needs, and hence leading to better ways of meeting them (Fruhling & Siau, 2007). Actually, CRM can simplify a company's remote processes of order reception, update, and placement. On the other hand, CRM allows it to keep an ongoing register of project investment, comprising materials, expenses, and time consumption. Finally, it gives access to a customer service agreement database. All of these enhanced capabilities are integrated to keep customers exactly where they belong: at the centre of the company's strategy (Scullin et al., 2002).

CRM is part of a broader, data-mining set of management software tools and solutions. Therefore, it facilitates data analysis in order to find detailed, market-relevant

information for more successful decision-making processes (Whatis.com, 2001). Besides, integrating all information in a single database allows all of the company's stakeholders to discard misleading data, as well as to have a consistent and unified source of information, a key feature to improve efficiency, reduce any costs related to data access, analysis, and exploitation, and hence reach better marketing decisions (Fruhling & Siau, 2007). CRM comprises not only software or technology, but also strategic knowledge, which makes it a global solution for more accurate data analysis and better business decisions (Krizanova, Gajanova, & Nadanyiova, 2018).

CRM and customer knowledge management

Managing customer knowledge, essential as it is for SMEs, relies on two specific strategic resources: customer knowledge management (CKM hereafter) and customer orientation (CO) (Fidel, Schlesinger, & Esposito, 2018). Fidel et al. (2018) argue that Innovation Orientation (IO) usually operates as an essential, highly effective mediator between CO and CKM. Both customer collaboration and innovation orientation have a clear impact on CKM and on the firm's marketing results, which leads us to consider them key factors to improve business performance through the perfection of customer knowledge (Fidel, Schlesinger, & Cervera, 2015). CKM is also an important strategic resource with a considerably positive influence on marketing operations (Huang & Shih, 2009), even outstripping that of Innovation Orientation (Fidel et al., 2015). In our view, this shows the importance of implementing coordinated strategies to increase accumulated customer knowledge.

CKM is therefore a combination of organisational tools, practices, and soft skills focussed on how to create, accumulate and transfer customer-related knowledge (Alegre et al., 2013). Because the SMEs' usual lack of human capital restrains their internal drive of knowledge (Gibbert, Leibold, & Probst, 2002; Robson & Bennett, 2000), CKM becomes a strategic resource in order to create customer value. Chua and Banerjee (2013) consider the accumulation of both general knowledge and CKM one of the basic factors improving competitive advantage in this type of firms. Thus, the relationship between CKM and innovation has outlined quite a new area of study (López-Nicolás & Molina-Castillo, 2008), offering a great opportunity to develop and elaborate these concepts and their impact, both on business excellence (Rollins & Halinen, 2005), and more notably on the increase of SME competitive advantage (Chua & Banerjee, 2013). Some studies have been conducted regarding the impact of CKM on business and projects (Chua & Banerjee, 2013; Fruhling & Siau, 2007; Gorry & Westbrook, 2013; July-Abid & Ali, 2014; Lin, Che, & Ting, 2012; Sofianti, Suryadi, Govindaraju, & Prihartono, 2013). More recently, Fidel et al. (2018) have studied its influence on business innovation capabilities.

The current globalisation trends demand that leading companies take up new competitive challenges, underscoring the need to focus on managing customer relationships, and especially on customer satisfaction as the main way to survive and maximise revenues (Constantinos, Christos, & Stafyla, 2003). These modern challenges have encouraged leading firms to adopt a new, customer-centered orientation (Bose, 2002), at the heart of the so-called relationship marketing, which implies an

evolution from the transactional orientation of traditional marketing to the modern discipline's focus on a relational one. Relational marketing centres marketing efforts on developing and reinforcing long-term relations with customers through a continuous improvement of customer service, carrying a high impact on customer satisfaction (Garbarino & Johnson, 1999). Leading organisations rely on CRM software systems to track and analyse customer-related information since their relations with customers can be greatly improved by using Information Technology (IT) (Karimi, Somers, & Gupta, 2001). Customisation is the essence of a customer-centered orientation of marketing strategy, and it can be reached by deploying and adapting CRM to customer needs and particularities (Dewhurst, Martinez-Lorente, & Dale, 1999). CRM seeks to expand customer-related knowledge, as well as it encourages its effective use to supervise consumers' purchase experiences, revenue growth and profitability. CRM is also considered a privileged management approach aimed at the identification, attraction, further development and retainment of successful customer relations, ultimately devoted to increasing profitable-customer loyalty (Bradshaw & Brash, 2001; Massey, Montoya-Weiss, & Holcom, 2001). Successful firms have discovered how to efficiently drive their marketing efforts by prioritising customers generating high revenues instead of inactive or irrelevant ones, which makes customer-tailored strategies indispensable. CRM enables companies to deploy such strategies by managing individual customer relations with the support of customer databases and interactive, mass customisation technologies (Verhoef & Donkers, 2001). Given that a sufficient and continually updated customer knowledge is critical for an effective CRM system, (Constantinos et al., 2003) CRM has definitely developed strong ties with the discipline of customer knowledge management (Massey et al., 2001; Romano, 2000)

CRM and innovation

Innovation is defined as a set of ideas, practices, or objects perceived as groundbreaking by either an individual or a group of people (Fruhling & Siau, 2007; Hsu, 2006). Innovation capabilities refer to an organisation's application of technology in the means of developing pioneering systems, policies, software, products, processes, devices, or services (Chang & Lee, 2008; Damanpour & Evan, 1984). Such capabilities also integrate a company's ability to assimilate and utilise external data to obtain success-oriented knowledge and business information (Cohen & Levinthal, 1990).

SMEs can improve their CKM through two main variables: customer orientation (CO hereafter) and innovation orientation (IO hereafter) (Fidel et al., 2018). An integrated and balanced approach to CKM and CO practices is absolutely critical for a successful CRM deployment (Gholami et al., 2018), both variables being essential resources for the company (Cantner, Joel, & Schmidt, 2009). When consistently integrated and treated as a global strategy, these three resources (CKM, CO and IO) may definitely improve the SMEs' capabilities, such as their innovation skills, as well as improve their results, e.g. in marketing terms, while retaining their competitive advantages (Grawe, Chen, & Daugherty, 2009; Lin et al., 2012; Pil & Holwelg, 2003; Rao & Drazin, 2002; Soliman, 2011; Zhu & Nakata, 2007).

Menguc and Auh (2006) consider IO to be an organisational resource, equally contributing to increasing and maintaining competitive advantage (Hult & Ketchen, 2001). On their part, Hult, Hurley, and Knight (2004) consider IO as a key factor to achieve successful companies (Pil & Holwelg, 2003). Finally, Pil and Holwelg (2003) underscore its leading role in SME success as innovation-centered performance allows companies to improve their competitiveness through an orientation shift.

Innovation processes are the most important element for an innovative system (Fidel et al., 2018). Innovation helps companies to improve their performance by encouraging them to create, assess and develop novel and useful products, services and practices, hence creating and retaining value for internal and external stakeholders, and generating new sources of income (Dervitsiotis, 2010).

Organisational innovation is particularly critical for SMEs, and especially for small firms (Gallego, Rubalcaba, & Hipp, 2013). In order to exploit the existing market opportunities, the latter need to stay in line with the constantly evolving customer needs, and this requires certain innovation capabilities (Ngo & O'Cass, 2012). Additionally, Díaz, Aguiar, and Saá-Pérez (2006) consider this a key element to achieve competitive advantage.

In an era of continuous change, where products, processes and services are constantly evolving to adapt market value to customer needs and market demands, manufacturers and service providers need to enhance their innovation capabilities to sustain competitive advantage (Panayides, 2006). Indeed, today's highly unpredictable, changing customer needs can only be met by successful companies through product and service innovation (Shane & Ulrich, 2004). Hence, CRM facilitates a firm's gathering, analysis, and exploitation of knowledge related to customer needs and preferences, enjoying as it does wide recognition for boosting innovation and ensuring long-term competitive advantage (Ramani & Kumar, 2008; Sahay & Ranjan, 2008).

Ru-Jen, Chen, and Chiu (2010) have pinpointed the effects of several CRM dimensions on innovation capabilities. For this purpose, CRM is described as comprising five different dimensions (information sharing, customer involvement, long-term partnership, joint problem-solving, and technology-based CRM), and their related innovation capabilities: product innovation, process innovation, administrative innovation, marketing innovation, and service innovation. Product innovation is defined by Liao, Fei, and Chen (2007) as the development and launch, either of new products as a whole, or of groundbreaking functions, quality, consistency or appearance for existing products. Process innovation refers to any shifts in production processes pioneering more productive systems for good manufacturing or service provision (Damanpour, 1996). Marketing innovation comprehends all strategies enabling more efficient customer-targeting operations (market research, segmentation, and information systems; price-setting strategy; advertising campaigns), as defined by Vorhies and Harker (2000) and Weerawardena (2003). On their part, Gopalakrishnan and Damanpour (1997) descibe service innovation as the modern manufacturers' growing engagement with improved customer satisfaction, after-sales services, guarantee policies, maintenance routines, and order placement systems. Administrative innovation is understood as a set of activities involving changes in organisational structures or administrative processes, such as human resource policies for recruitment and allocation, task assignation and reward

policies (Gopalakrishnan & Damanpour, 1997). Innovation in production and IT processes favours an ambidextrous performance, whereas changes in logistics systems, despite being positive, are less relevant (Arsić et al., 2018).

Each company shows contrasting degrees of CRM development and command, which leads us to predict a differential, CRM-related impact on each innovation capability (Ru-Jen et al., 2010). The clearest CRM influence, with positive effects in all five types of innovation, comes from technology-based initiatives. However, it may consequently be argued that not all CRM activities contribute to innovation programmes positively. Thus, there is a strong need to supplement CRM with other elements, such as supplier information.

Results

After an exhaustive literature review, we may conclude that most existing studies have successfully described the benefits of CRM implementation on firm performance. Nevertheless, a consolidated approach to the aforementioned, exploitation-exploration duality of present and future CRM benefits remains undertheorized. Taking these bifold benefits as a starting point, the present paper intends to present a research method aimed at determining whether CRM is indeed a technological solution within the scope of sustainability and sustainable business models.

Benefit maps of CRM in the present and the future

To summarise our concluding remarks from the previous theoretical discussion, the following map (Figure 1) represents the benefits expected of CRM implementation,

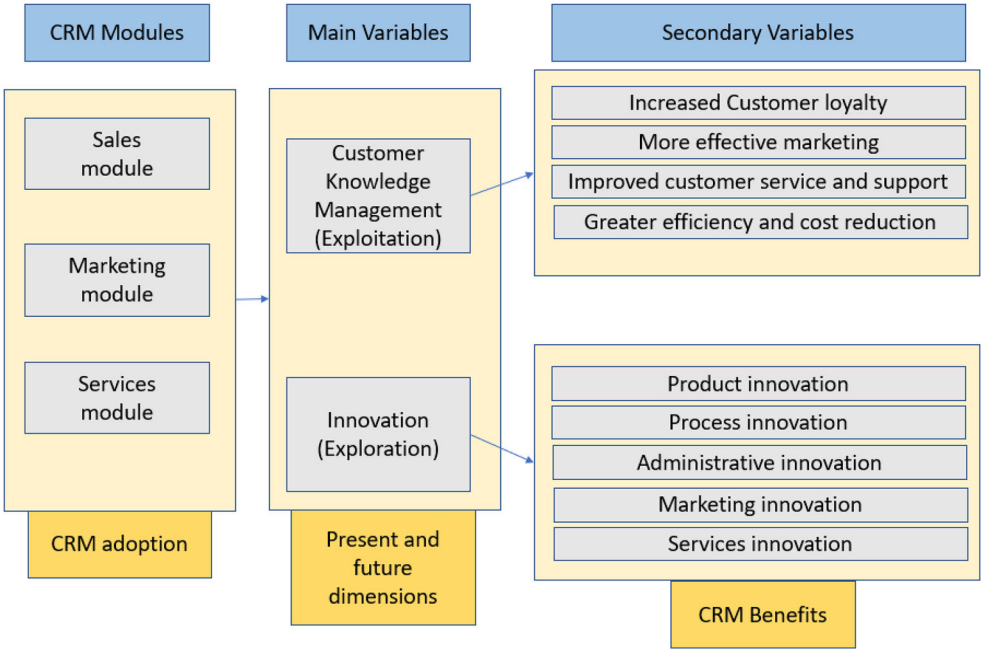

Figure 1. CRM benefit map.

both in terms of current exploitation (customer knowledge management), and prospective exploration (innovation):

From a compositional perspective, CRM comprises three different aspects: sales, marketing, and services (Buttle, 2004). Operated jointly, these three tools pursuit the main objective of devising an effective CRM strategy, encouraging customer loyalty enhancement (Huang & Lin, 2005).

CKM (customer knowledge management) refers to organisational performance, and, more specifically, to the currently observable, CRM-related set of benefits, whereas innovation makes reference to the prospective, advantages expected as a result of investing on process improvement.

In this sense, our literature review has also shed light on the absence of perspectives directly relating CRM to sustainability, as well as on the lack of interest regarding the exploitation-exploration blend as a bifold trend for sustainable development.

Research model

The previous research gaps clearly underscore the need for a set of methodological principles allowing us to draw connections between all CRM-related benefits, current and future, and a sustainable business model guaranteeing its long-term economic, social, and environmental efficiency.

While departing from the acknowledged benefits of CRM for SMEs, this paper also intends to demonstrate whether CRM could be considered an anchor of sustainability among the different technological solutions available for enterprise management. In the following sections, we will present readers with several hypotheses upon the impact of CRM implementation on the three main dimensions comprised by average sustainable business models. The research model proposed in this paper may be used at any time, in any sector or given company, to determine how CRM deployment can encourage a sustainable business model.

Sustainability and CRM

The World Commission on Environment and Development (1987) defines sustainability as the 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Its three main dimensions, also known as the 'triple bottom line', are the following: economic, environmental, and social. Economic sustainability takes place when a balance has been reached between the pursuit of economic performance and its sustainable development (Abson et al., 2017). Environmental sustainability relates to the influence of an organisation's business processes, activities, and operations on its natural environment, this influence being either positive or negative (Mishra, Akman, & Mishra, 2014). Finally, social sustainability encourages a solid partnership between business and society for a sustainable development. In other words, a win-win situation is sought with this last dimension.

Proposed model

The current section presents our general research model, aimed at determining how the benefits of CRM deployment may contribute to boost different sustainability variables, as illustrated in Figure 2.

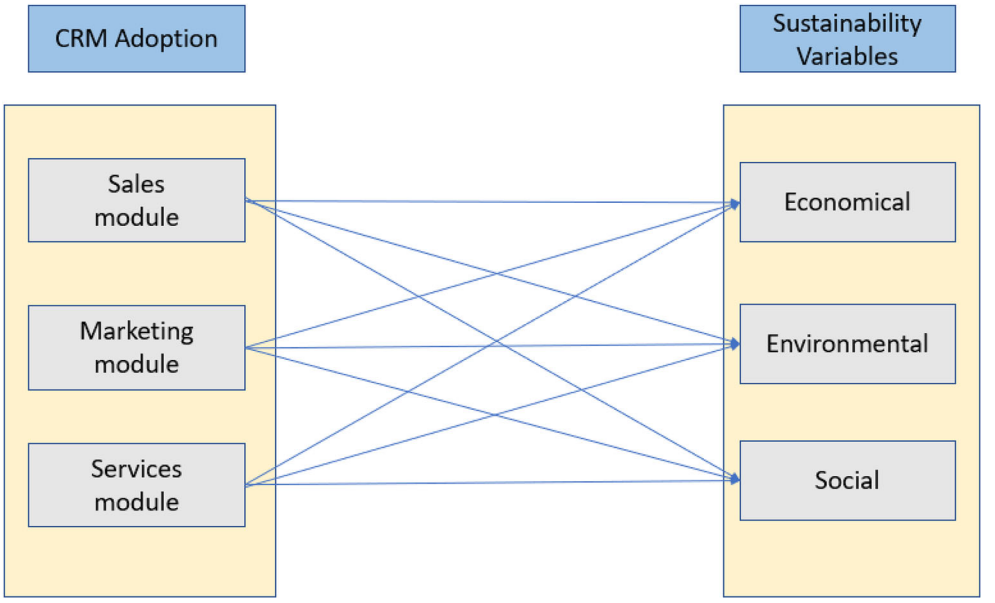

Figure 2. Proposed research model.

Our departing hypotheses refer to the impact that the implementation and use of the three CRM modules (sales, marketing, and services) may bear on the three sustainability focuses: economic, environmental, and social. After a consistent, CRM-themed literature review, and given the absence of direct references linking CRM with Sustainability, we have concluded that a potential research interest may lie behind such absence. According to our view, the total amount of connections to be drawn from the three major CRM components (sales, marketing, and services) translates into nine different hypotheses dealing with core aspects of business sustainability.

Model hypotheses

Below are the aforementioned nine hypotheses of our research model, which, if confirmed, would enable us to conclude the acceptance of CRM as a sustainable technological solution in the three areas: economic, social and environmental.

Hypothesis 1. The effective use of the CRM sales module affects the company's level of economic sustainability.

Regarding economic sustainability, CRM could be considered a key tool and a profitable solution for more sustainable business models. Morvay (2008) has acknowledged the ability to achieve consumer loyalty through a heavy investment in customer relationship management systems (CRM). This is accomplished by investing in Research and Development (R&D), as well as by innovating in disruptive technologies and Management Information Systems (MIS). It thus seems evident that the use of CRM can positively advance the implementation of sustainability within an organization (Christofi, Leonidou, & Vrontis, 2015), but not a single piece of literature so far has been devoted to providing direct demonstrations thereof. From our perspective, a deeper sort of analysis may outline that the CRM sales module should not only shed

light on the actual level of survival of a company's financials, but also set the foundations for a future, sustainable growth of economic profitability.

Hypothesis 2. The effective use of the CRM sales module affects a company's level of environmental sustainability.

In environmental terms, Molla and Abaresh (2011) define Green IT as a set of practices oriented towards environmental sustainability under different forms (including pollution prevention, product stewardship, and sustainable development in IT management). There is growing awareness among researchers and practitioners of the organisations' ecological responsibilities (Chen, Boudreau, & Watson, 2008). In this light, CRM appears to be a key solution to reduce the environmental impact of management decisions given its decisiveness on, for instance, paper-saving processes (McKenzie & Liersch, 2011). Nevertheless, we've been unable to find any scholarly works considering CRM a relevant set of Green IT solutions. Hence, the first goal of this study is to advocate for the reduction of paper-based management processes. In second place, it is also aimed at expanding the narrow-sighted connections between CRM and Green IT. Thirdly, it intends to underscore the crucial role of CRM on the reduction of the environmental impact caused by a company's regular activity.

Hypothesis 3. The effective use of the CRM sales module affects a company's level of social sustainability.

Finally, in social terms, the understanding of CRM as a management solution, allowing the centralisation of customer data on a single database with unified access, could also be a key point for common-good management theories, due to the subsequent achievement of more efficient inter-company processes in the context of customer-vendor relations (Meyer & Schwager, 2007). Again, no literature can be found on the social dimension of the relationship between CRM and sustainability. Hence, our research model should verify whether an effective connection exists between the use of CRM and the social common good resulting from an accessible, unified set of sales data from all related stakeholders (customers, vendors, and the company itself).

Hypothesis 4. The effective use of the CRM marketing module affects the company's level of economic sustainability.

CRM systems contribute to actively develop and steadily increase customer loyalty (Morvay, 2008), indeed a crucial requisite for a sustainable business model (Christofi et al., 2015). Once again, no scholarly works so far have considered a potential direct link between the application of the CRM marketing module and firm economic sustainability. This hypothesis should allow us to verify whether the use of the CRM marketing component may bear a real effect on a sustainable business model. This appears to be a sensible prospection since processing and systematically storing all customer and marketing-related data on a unified database may fructify the company's marketing efforts toward target customers, while increasing customer loyalty, and consequently economic sustainability.

Hypothesis 5. The effective use of the CRM Marketing module affects a company's level of environmental sustainability.

Environmental sustainability implies the implementation of effective solutions carrying a positive impact on a business' ecological dimension. As mentioned before, Green IT is defined by Molla and Abaresh (2011) as a set of practices oriented

towards environmental sustainability, among which we may include pollution prevention, product stewardship, and sustainable development in IT management. However unprecedented understanding CRM as a Green IT solution may be, this paper is proposing the layout of a model where the use of a consolidated marketing-action database shows the path toward a drastic reduction of paper-based processes (McKenzie & Liersch, 2011), as well as the extensive use of time-saving procedures. Understandably, such savings may be essential for a truly sustainable business model.

Hypothesis 6. The effective use of the CRM Marketing module affects the company's level of social sustainability.

Meyer and Schwager (2007) show the potential improvement that an efficient management of both vendor and customer-related information may bring to any given commercial relations. A specific tailoring of both marketing campaigns and actions to reach target customers involves a huge amount of information, which may be considered common good and the key aspect to a company's sustainable and social management model.

Hypothesis 7. The effective use of the CRM services module affects a company's level of economic sustainability.

Quite evidently, customer service excellence appears to be the backbone of customer loyalty, since a truly trustworthy company in terms of customer needs, expectations, and requirements must be able to ensure a great customer experience, which may in its turn enhance the aforementioned customer allegiance. CRM is a customer-service-oriented tool, placing the customer's voice at the centre of the company's efforts, thus clarifying the positive connection between CRM and consumer loyalty (Morvay, 2008) through a powerful services module. In other words, customer loyalty is at the very core of economic sustainability, which leads us to a new hypothesis, drawing a connection between the CRM services module and financial sustainability.

Hypothesis 8. The effective use of the CRM services module affects a company's level of environmental sustainability.

Molla and Abaresh (2011) have successfully linked Green IT with environmental sustainability, which is one of the main benefits that CRM implementation may bring to a firm. The introduction of CRM should save time, effort, paper, and all kind of resources with which an environmentally sustainable business activity should dispense. In line with this, a final hypothesis may relate and show the effect of CRM implementation on the ecological side of the entrepreneurial results.

Hypothesis 9. The effective use of the CRM services module affects a company's level of social sustainability.

Considering the impact of CRM-related efficiency on managerial processes, it's quite intuitive to conceive CRM as an important solution in the pursuit of common-good relations between customers and vendors (Meyer & Schwager, 2007). The impact of applying the CRM Services module for social sustainability purposes could hence be measured by quantifying the correlation between customer service improvement, the increase of customer-vendor trust, and the efficiency of service-process management.

Conclusions

This study has conceived and devised a research model to empirically validate the effects of the three CRM components (sales, marketing, and services) on customer

knowledge management and innovation, as well as on the companies' efforts toward digital transformation and sustainable business model innovation. For this purpose, we've taken as a starting point the CRM-benefit map illustrated above, comprising two different paths: a set of current-exploitation patterns for organisational performance, plus an explorative one for prospective innovation, leading the way to a sustainable business model for the future. Our research model has been built up in accordance with each potential combination between the three CRM modules and the three sustainability dimensions (economic, environmental, and social).

Companies, and particularly small- and medium-size ones (SME), are willing to enhance their data-processing potential through the adoption of efficiency- and success-oriented technologies and solutions. CRM is one of the modern information systems (IS) available in the means of providing business decision-makers (BDM) with valuable business data, especially concerning the three CRM-related areas: sales, marketing, and services. Thus, the goal of this paper's research model is to set up a structure and a series of plausible hypotheses applicable to a future empirical study for validating the effects of CRM-component influence on the three sustainability dimensions.

Upon confirmation of such hypotheses, the subsequent validation of this model may contribute to our understanding of the process whereby CRM-related benefits enable a positive, enhancing correlation between each CRM component and each sustainability dimension. In this light, CRM must be considered a specific typology of Green IT for digital transformation and sustainable business model innovation.

Regarding the CRM-benefit map, and the first main variable, customer knowledge management, four other variables must be acknowledged as bearing a relevant impact on business results, the measurement of which must be addressed in a more specific research model. Considering the influence of such variables on business indicators, and the way CRM allows their fulfilment as desirable goals, our research model may empirically demonstrate how CRM helps firms to succeed through a consistent and well-structured customer knowledge management strategy. A first, positive outcome is the increase of customer loyalty, the effectiveness of which portrays a customer-centered, and therefore successful firm on the grounds of relational marketing principles. A second beneficial effect lies on the enhancement of marketing-strategy effectiveness, since CRM may provide internal marketing stakeholders with key information in order to plan out and opt for the most effective campaigns and marketing actions for customer targeting. An improved customer service and support is the third CRM-related benefit, directly connected to the services area, and a crucial factor to ensure a company's retaining of its best customers through an efficient, target-retention strategy based on an enhanced post-sales customer experience. Lastly, a fourth related advantage lies in the development of efficiency-boosting and cost-reductive capabilities, given the need for a surviving company to adapt its sales, marketing and service efforts to certain goals and specific customer features, hence modulating its offer on the grounds of a realistic perception of market demand, and achieving efficiency and success

In regard with the second path of our benefit map, revolving around the innovation variable, five core axes have been considered: product, process, administrative, marketing, and services. All five describe how companies drive their efforts toward an

effective investment on the enhancement of both internal and external business processes. In this sense, an empirical validation of our proposed research model may allow researchers to quantify the impact of each axis on the development and implementation of pioneering and efficient sales, marketing, and service policies.

Despite the overall academic and business contributions of this study, some limitations must also be acknowledged. First, the research model laid out in these pages is a general, basic one, to be supplemented with certain assessment indicators, allowing model validation within specific sectors and business environments. Second, whereas this study understands CRM as the combination of three main components (sales, marketing, and services), it has not considered some second-level, potentially adjacent or accessory elements. Third, each CRM component has been dealt with in a standardised, and thus comparable depth, hence leaving aside the differences between each CRM provider and/or manufacturer.

Finally, in terms of future research lines, this model could be elaborated into a more specific methodology, fit for any given sector and/or enterprise standards, in order to validate and empirically assess the effect of each CRM strategy on a company's general business results.

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