

-RESEARCH ARTICLE-

A STRATEGIC FRAMEWORK FOR DESIGNING KNOWLEDGE-BASED CUSTOMER-CENTRIC ORGANIZATIONS

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—Abstract—

Business firms are witnessing accelerating environmental change and uncertainty rates, a shift towards a reactive change mode, and knowledge-based products or services. The basic notion of the paper holds that organizations respond to environmental changes through organizational activities that seek to diffuse existing pressures, exploit existing opportunities, or create new opportunities. The study adopts an exploratory approach based on a review of related works. It proposes a synergistic and hierarchical knowledge-based customer-centric organization (KCO) strategic framework to leverage distinctive core competencies (DCCs) and achieve sustainable competitive advantage (SCA). The KCO framework comprises four elements: business process re-engineering (BPR), knowledge management (KM), customer relationship management (CRM), and competitiveness strategies. Business process re-engineering (BPR) is understood in its broader context and includes three major components, i.e., reorganizing people, retooling information and communication technologies (ICTs), and redesigning processes.

Keywords: Business process re-engineering, customer relationship management, and knowledge management

1. INTRODUCTION

Knowledge is vital for SCA and the renewal of contemporary organizations (Degbey et al., 2021). Businesses organizations can no longer be effectively facing rising competition using their traditional structure. A KCO strategy enabled by a systemic and synchronized combination of people, processes, and technology is essential in meeting the challenges of today's changing business environment by creating DCCs. In terms of

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people-based structural changes, the evolution of the global economy from an industrial-based to a knowledge-based one enabled the trend to shift from functional to process organizational structure using ICT (Al-Shammari, 2009; Čepelová et al., 2020). Knowledge development is a process-based activity that requires organizational transformation from function-based and hierarchical to process-based networked organizations. In networked organizations, teams are made up of small team-minded specialists who come from different functional units of the firm and do the work. People may float from one group to another as necessitated by their abilities and task requirements. Virtual teams may span functional boundaries and represent relationships with remote collaborators such as contractors, partners, suppliers, and customers (Al-Mulla et al., 2019).

As business strategies aim to build SCA, the focus should be on 'difficult-to-imitate' resource-based DCCs, i.e., Knowledge (Windmueller et al., 2020). The competitive advantage of imitable resources may soon be rapidly imitated by a capable competitor or made obsolete by the innovation of a rival. The increasing dominance of knowledge has triggered many companies to find new ways of utilizing knowledge through people, processes, and technology (Al-Shammari, 2005; Čepelová et al., 2020; Kutol et al., 2016). The primary purpose of this study is to present a comprehensive framework to contain a multi-dimensional socio-technical perspective of the transformation towards KCO. This paper presents a holistic, one-total strategic change business framework for building long-term profitable and loyal customer relationships with a view to face highly competitive and dynamic business environments. Building KCO has been the subject of several academic works in organizational studies, KM, and strategic management for a long time. However, researchers have mostly focused on some aspects, such as human resources, knowledge-creation processes, organizational culture, structure, ICT infrastructure, and corporate strategies supporting or improving organizational knowledge (Neagu, 2008).

The importance of this study comes from its intent to add to the KCO body of knowledge from a theoretical perspective by improving understanding of KCO dimensions related to SCA. The paper seeks to support the analysis of the body of knowledge of KCO by designing a model based on the pillars of KM, CRM, BPR, and competitiveness strategies. There is a need to formulate a holistic approach to leverage cross-functional DCCs, add value to customers, and create an SCA in dynamic business environments. The study provides a framework that integrates BPR, or business process orientation (BPO), as an inevitable enabler for inter-departmental cross-functional activities and transformation to a KCO. The study might also help business organizations gain SCA by designing KCO to leverage DCCs in e-commerce and non-e-commerce contexts. As customers are not alike in their preferences and profitability, the development of KCO based strategy becomes the cornerstone of leveraging DCC for achieving SCA. Therefore, finding methods to differentiate a company's products and services from

those of its competitors can help to increase a company's market worth. After a literature review of the relevant models, the paper continues with the proposed model's presentation and discussion. It concludes with the theoretical contributions, implications, limitations, future trends, and concluding remarks.

2. LITERATURE REVIEW

2.1 Sustainable Competitive Advantage

According to [Haseeb et al. \(2019\)](#), a firm gains a competitive advantage in the marketplace when its rate of economic profit is higher than the typical rate of profit experienced by its competitors. According to [Jones et al. \(2018\)](#), competitive advantage is defined as the ability of a firm to generate a greater amount of economic worth than the economic worth of its competitors. As [Mahdi et al. \(2019\)](#) explains, competitive advantage is defined as a company's ability to successfully use its resources to meet the demands of its customers in comparison to its competitors. During periods of slow growth and intense competition, strategic senior managers devote the majority of their attention to gaining a competitive advantage. This describes a large number of modern-day businesses, and for the past 20 years, the primary concern of practitioners and academics has been the factors that contribute to competitive advantage ([Barham, 2017](#)). Most organisations are well-aware that achieving competitive advantages across industries will be a particularly challenging task in the twenty-first century, and this is widely acknowledged by the business community.

Global competition has risen to unprecedented levels, putting greater emphasis on achieving and maintaining sustainable competitive advantage (SCA). When an organization begins implementing a strategy that will generate value for them but is not being used by any of their competitors, [Jones et al. \(2018\)](#) recognizes that they have established a competitive advantage. When other organisations are unable to duplicate the benefits of a SCA, it can be determined that the organization is employing the strategy. A competitive advantage, according to [Mahdi et al. \(2019\)](#), can be divided into two categories. These types are both long-term and temporary in nature. They asserted that high profits are typically the result of a competitive advantage in the marketplace. However, because of the high profits, competition is heightened, and this competition will shorten the period of time during which the competition advantage will last. As a result, for the majority of organisations, competitive advantage is only temporary. Although it is possible to maintain a competitive advantage if the foundation of the advantage cannot be replicated by competitors, it is not recommended.

In addition, [Barham \(2017\)](#) referred to SCA as developing "walls" that make it difficult to replicate a firm's past success. In Porter's words, "competitive advantage is at the heart of a firm's performance," which means that a company should protect themselves from being tainted by incorporating new technologies, core competencies, and skills into their

organization. As discovered by [Mahdi et al. \(2019\)](#), SCA is not as reliant on capital and physical assets as it was previously thought to be. It is now more effective to concentrate on intellectual capital rather than physical capital. The review of existing literature reveals a wide variety of SCA definitions. For example, [Jones et al. \(2018\)](#) considered superior resources and skills to be potential sources of competitive advantage. When analyzing methods for achieving SCA, it is important to consider the perspectives of both customers and competitors. Furthermore, core competencies are what determine the outcomes of SCA, and as a result, businesses must pool their skills and resources to develop capabilities that will allow them to respond quickly to opportunities that arise. According to [Kuncoro et al. \(2018\)](#), there are four indicators that indicate whether a firm's resources have the potential to generate SCA. VRIN stands for value (V), rarity (R), inability (I) to be duplicated, and non-substitutable (N), and these are the indicators to look for.

2.2 Knowledge-Based Customer-Centric Organizations

Knowledge is regarded as a competitive advantage because it is an intangible asset. Human interactions always serve to stimulate the process of knowledge creation and sharing in knowledge-based organisations (KBOs) ([Ikujiro Nonaka et al., 2014](#)). Consequently, the importance of organizational culture in the success of such an endeavor cannot be overstated, and it is strongly associated with a firm's ability to compete as well ([Su et al., 2018](#)). According to [Su et al. \(2018\)](#), organizational culture has a significant impact on the knowledge creation and sharing processes. Some scholars ([Al-Mulla et al., 2019](#); [Arvanitis et al., 2015](#)) consider the culture of a particular organization to be a potential barrier to knowledge sharing and development, whereas many others discuss the ideal role of culture when it comes to valuing and managing knowledge ([Bahar et al., 2017](#)). Culture plays an important role in the creation and sharing of knowledge. The knowledge culture, the sharing culture, the knowledge-centered culture, and the knowledge-friendly culture are all important themes that demonstrate the significant role of culture. Knowledge-based organisations (KBOs) must be successful in developing and managing explicit knowledge, just as they must be successful in creating and sharing knowledge ([Čepelová et al., 2020](#)).

Recorded information contains a number of potential hazards that, if not managed properly, could cause harm to both human actors and organisations. In order to deal with such dangers and emergencies, KBOs must have a clearly defined plan and solution in place. For example, an info-famine can have a significant negative impact on knowledge sharing in an organization because knowledge is power in such situations and is treated as if it were a valuable trophy. If a KBO is suffering from infobesity, it will require a knowledge diet, which means that it will need to understand how much information it requires for a project and how to use that information, just as a body needs to understand how many calories it requires for a healthy daily diet. An increasing number of people are referring to a condition known as infobesity, which refers to a state of personal

information overload, particularly when caused by a diet of information (Čepelová et al., 2020).

Every procedure carries the risk that some of the information and knowledge being exchanged will be unrelated to the responsibilities of the employees participating in the procedure. When a person possesses an excessive amount of knowledge, it becomes difficult to manage it all properly. Employees may experience nervousness and anxiety as a result of this situation, which may even result in mental health issues. Based on findings from a study by M. S. Dave et al. (2020), some of the most significant consequences of information overload are as follows: decreased work efficiency; distraction; diminished concentration; procrastination; inability to make good decisions; irritation; agitation; annoyance; anger; stress; difficulty sleeping; tiredness; depression. All of these are extremely serious issues that can have a significant impact on one's professional as well as personal life.

The same situation can be applied to people who are anxious about information. A condition of stress caused by the inability to access, comprehend, or make use of necessary information has been described by Eklof (2013). The source of this stress could be either an overload of information or a scarcity of information. The amount of data and information that we are exposed to over a period of time has the potential to have negative effects on our mental and physical health. Information fatigue syndrome is a serious disease that frequently manifests itself in knowledge-intensive workplaces, according to the American Psychological Association. The paralysis of analysis and deterioration in the quality of decision maker performance are two of the most significant consequences of information overload that have remained consistent over the course of time (Xiang et al., 2021). Several scholars have introduced models to determine the features of knowledge-based organizations. Čepelová et al. (2020) presented a model which defines a knowledge-based organization as an entity that realizes the importance of its knowledge, internal and external to the organization, and applies techniques to maximize the use of this knowledge to its employees, shareholders, and customers."

2.3 Review of Previous Related Models

Ikujiro Nonaka (1994) defined the knowledge-creating company as an organization that consistently creates new knowledge, widely disseminates it throughout, and quickly embodies it in new technologies and products. Argyris et al. (1997) and Senge (2006) introduced the learning organization, wherein members act as learning agents, responding to internal and external changes in the environments by detecting and correcting errors. When people continually expand their capacity to create the results they desire, where new patterns of thinking are nurtured, collective aspiration is set free, and where people are continually learning to learn. Wiig (1999) presented the concept of an intelligent organization that acts effectively in the present and can deal effectively

with future challenges. It meets its objectives by implementing visions and strategies through its systems, policies, and organizational structure.

[Ikujiro Nonaka \(1994\)](#) introduced the idea of hypertext organization. The core feature of the hypertext organization is the ability to switch between the various contexts of knowledge creation to accommodate internal and external changes in the environmental requirements of organizations. [Neagu \(2008\)](#) identified several features of an organization to be considered as being knowledge-based. The elements to be analyzed are human resources, knowledge creation, organizational culture, structure, management, and the ICT infrastructure. [Ikujiro Nonaka et al. \(2007\)](#) introduced a new paradigm for dynamic fractal organizations for promoting knowledge-based transformation. The paradigm builds and utilizes a triad relationship of knowledge that integrates and synthesizes tacit and explicit knowledge and creates a third type of knowledge, phronesis. This triad relationship is an upward spiraling process that converts implicit and explicit knowledge and drives sustainable transformation across functional boundaries, organizations, and environments.

Many researchers have looked at the importance of customer knowledge (CK) as a DCC for achieving SCA ([Gibbert et al., 2002](#); [Srivastava et al., 2019](#)). The emphasis on CK for building long-term and profitable CRM strategies has dominated the literature on customer-centric organizations. CRM is a customer relationship based on marketing strategies, target marketing, and customer relationship marketing ([Kutol et al., 2016](#)). [Gibbert et al. \(2002\)](#) defined CRM as a corporate strategy to enable customers to move from passive information sources and recipients of products and services to empowered knowledge partners. Many CRM advocates argue that collecting large amounts of data about customers and their transactions helps companies improve customer retention and satisfaction by providing customer-tailored services ([Sivolella, 2019](#)).

The customer knowledge management (CKM) model has been frequently used in the literature to use KM instruments and techniques to support the exchange of knowledge between an enterprise and its customers ([Rowley, 2002](#)). Some scholars argued that CKM is the external perspective of KM ([Rollins et al., 2005](#)). [Gebert et al. \(2003\)](#) classified knowledge flows in CRM processes into three categories: First, Knowledge about customers that is accumulated to understand customers' motivations and address them in a personalized way. Second, knowledge for customers that is required in CRM processes to satisfy the knowledge needs of customers. Third, knowledge from customers, which is knowledge about products, suppliers, and markets. They also derived a CRM process framework by deconstructing the marketing, sales, and service functions into relevant business processes which could be cross-functional.

[Bueren et al. \(2005\)](#) introduced a CKM model that integrates the two concepts of CRM and KM. They focused on the application of KM within the area of CRM cases in which the performance of CRM improved by applying the CKM process framework. [Garrido-](#)

Moreno et al. (2010) proposed an integrated model of KM for the success of CRM implementation, taking into account factors such as organizational factors, technology, knowledge management, and customer orientation. Zanjani et al. (2008) defined CK as a kind of knowledge in the area of CRM, which has a direct or indirect effect on our organizational performance. They proposed two conceptual models: one for describing CK formation and another for CK classification.

3. METHOD

The paper adopts an exploratory approach to developing the KCO framework based on a review of the relevant scholarly literature of related works and doesn't seek to apply the framework to one particular organization. Exploratory research is undertaken when a researcher intends to explore something new or clarify ambiguous problems in a specific situation or when a particular issue of interest exists and has not been clearly defined. The fundamental insights to new inquiries could be from secondary data previously collected or existing data in available literature (Bell et al., 2018). Usually, exploratory research sets the groundwork for further investigation as it is conducted with the expectation that additional research will be needed to provide more conclusive evidence (Hair et al., 2019).

To collect, organize, and synthesize existing knowledge-based customer-centric organisations and their products and services, a detailed online search is conducted to locate appropriate publications. The papers that were identified cover a wide range of disciplines that are interconnected, including marketing, management, operations management, management science, and supply chain management. A significant amount of time and effort is spent sorting academic journals by reviewing their titles, abstracts, and manuscripts in both traditional and electronic library systems, due to a lack of precise key words that define the subject matter. Typically, this step can be completed by submitting articles to prestigious journals and conferences. This is not the case for KCO, as this is a relatively new phenomenon that only emerged a few years ago, and the associated publication channels are still scattered throughout the country. The use of search queries in online databases has become the dominant method of identifying the most relevant papers in today's world of information. The use of online databases rather than reviewing library collections for a literature review on KCO is more practical and appropriate in terms of time and resources. The following major online databases were targeted for the past six years: Scopus from Elsevier, Web of Science from Thomson Reuter's, ProQuest (ABI/INFORM), and ScienceDirect from ScienceDirect (Elsevier). According to the results of this search, the concept of KCO is still in its early stages of research and development among academics, even though it is widely recognized and discussed among practitioners. To gain insight into KCO, we reviewed and classified relevant studies, which we then used to create this study. Figure 1 depicts a diagrammatic representation of the overall review methodology for KCO papers.

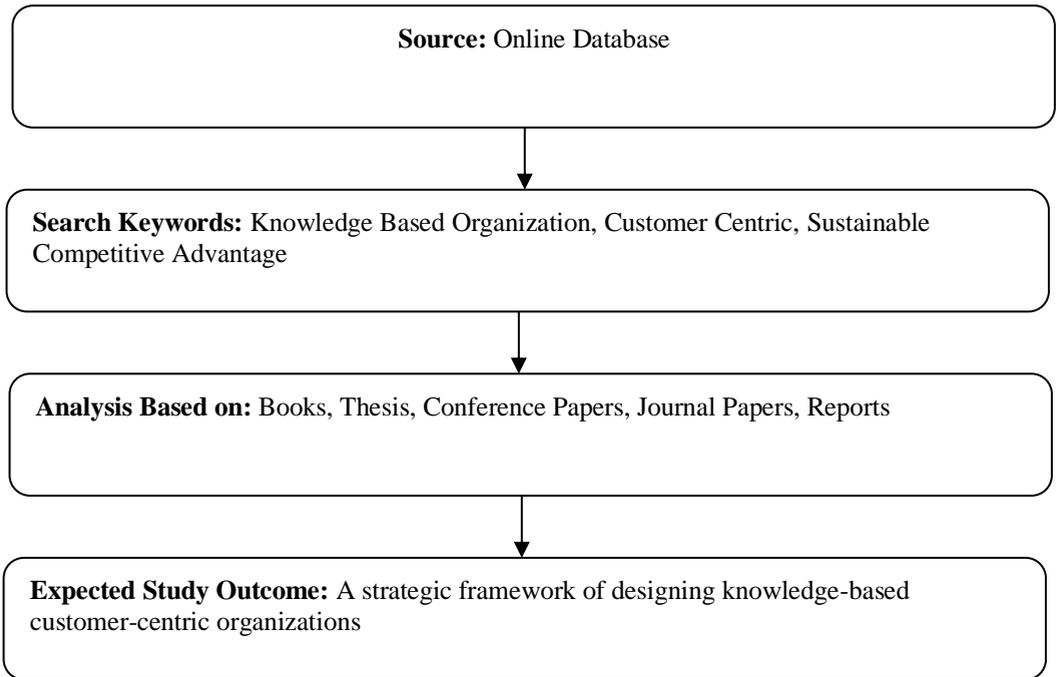


Figure 1: Review Methodology

4. RESULTS AND DISCUSSION

The KCO framework relates to hierarchical strategic decisions regarding competitiveness, KM, BPR, and CRM strategies. KCO is a holistic business strategy that seeks to re-engineer organizations through people, processes, and technology. In addition, utilizing the embedded knowledge to create value enables firms to acquire, retain, and expand relationships with customers and ultimately attain a sustainable customer intimacy-based competitive advantage. The difference between the revenue generated from value-adding business processes and costs of resources used in the creation process is a firm's profit margin, represented by the arrowhead at the end of the KCO value chain.

4.1 Building Blocks of The Research Framework

The KCO change strategy requires high organizational requirements as well as high level of involvement from people. BPR enables work that requires knowledge-based systemic cooperation and coordination of several departments, which is often a trouble for firms in their dealings with their customers. In implementing the KCO change strategy, organizational components must be re-engineered, i.e., people, processes, and technology. Besides, corporate pillars interact among themselves and need to 'fit' systemically to affect change outcomes ultimately.

As firms migrate to a customer-centric business strategy, it is almost inevitable to undergo significant changes in their structure and people, processes, and ICTs. Teamwork is an essential part of KCO. It provides substantial benefits to customers, employees, and organizations through effective leadership, empowerment, information sharing, continuous learning, and coordination and cooperation between members who previously operated within autonomous departments (Al-Shammari, 2005).

The following are the components of the hierarchical KCO framework (Figure 2):

4.2 Reorganized People

In KCOs, decision-making is vested in the hands of employees, unlike traditional structures, wherein authority remains in the hands of managers. Empowerment of employees involves self-directed teams and individuals in charge of their career destinies, as they meet and exceed company and personal goals through a shared company's vision. Employees are permitted to develop and utilize the full potential of their skills and knowledge to the benefit of their organization and themselves (Yonce et al., 2017).

4.3 Retooled ICTs

ICT enables a systematic capture, storage, indexing, retrieval, distribution, and reuse of knowledge after it has been extracted, made independent of the person, and reused. In retooling ICTs infrastructure, detailed business requirements are derived from each business goal and functional objective. Then, business requirements are translated into a more detailed view of the systems requirements, standards, and processes that shape ICTs architecture (Pearlson et al., 2019). Moreover, organizations need to understand the role of their existing ICT infrastructure, understand the limitations of implemented ICTs, and identify gaps in the existing ICTs infrastructure when it is linked to the adopted customer-centric business strategy.

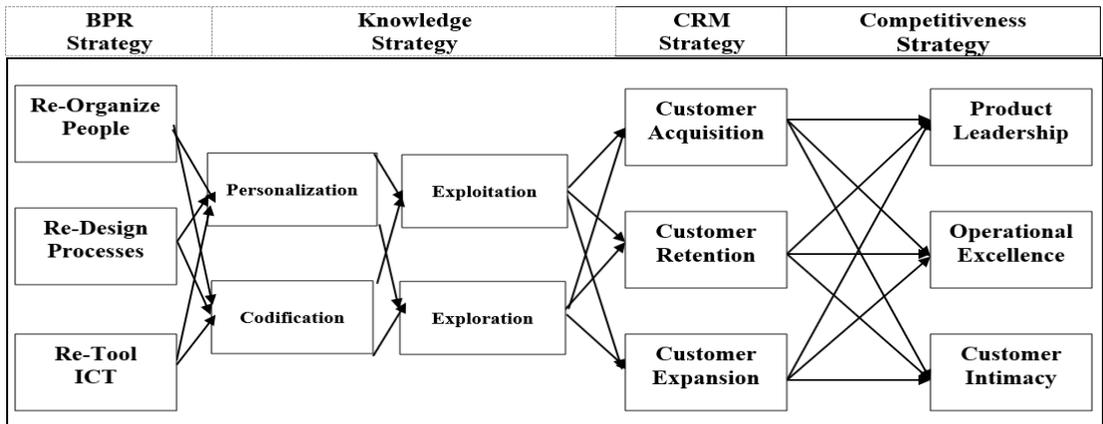


Figure 2: An Integrated KCO Framework: Linking BPR, Knowledge, KM, CRM, and Competitiveness Strategy

4.4 Redesigned Processes

BPO seeks to promote collaboration and knowledge sharing among team members and enables companies to operate efficiently and satisfy customers at a lower cost and higher speed. BPO requires changes in organizational structure, people's tasks, and type of ICTs in moving from functional to the process view of the organization. However, it has been estimated that no more than 10 per cent of large companies have made a profound and successful effort to move away from functions towards a process-based organization (Steiber et al., 2016). A structural enabler for BPO is to adopt a systematic approach to establishing a single contact 'case manager' point for customers. Another, even better, alternative to the case manager is a process generalist who may be trained to perform the work of cross-functional specialists and eliminate the need for them. Given the safeguard against fraud, an integrated process may seem to be the ultimate solution for efficient integration rather than coordination of cross-functional activities (B. Dave et al., 2015).

4.5 Knowledge Strategy

There are two types of KM strategies: personalization versus codification and exploitation versus exploration strategies. A process-oriented KM approach bridges the gap between human- and technology-oriented KM. Examples are knowledge maps, lessons learned, and best practices (Bahar et al., 2017; Darwin, 2017; M. S. Dave et al., 2020; Demchig, 2020). The personalization approach is deeply rooted in organizational behavior (OB) to determine how much knowledge passes between individuals. This method focuses on connecting knowledge workers through networks. It is better suited to companies facing one-off and unique problems that depend more on tacit knowledge and expertise than codified knowledge.

Exploitative knowledge strategy generation involves improving existing components and building on the technological route, whereas exploratory innovation shifts to a different technical path. Exploration-oriented firms have a more excellent knowledge absorptive capacity, are technologically more diverse, and are strongly exposed to intensive non-price competition compared with exploitation-oriented firms (Arvanitis et al., 2015). Knowledge exploration rather than exploitation is beneficial for achieving breakthrough innovations, but the equal emphasis on knowledge exploration and exploitation is ineffective (Li et al., 2018).

4.6 CRM Strategy

CRM refers to the customer-centric business strategy aimed at increasing the long-term market value of a business using the relationship between the company and its customers. It recognizes the needs and preferences of customers and creates customer profiles. It is easier to invest in specific customers and customize marketing activities to a particular segment. In specific, CRM seeks to satisfy customer needs, to improve

customer acquisition, customer retention, customer loyalty, and customer profitability by improving the process of meaningful communications with a) the *right* customer, b) providing the *right* offer (product or service), c) at the *right* price, d) at the *right* time, and e) through the *right* channel (Rossidis et al., 2019).

4.7 Competitiveness Strategy

The bases of competition available for organizations are as follows (Heizer, 2006):

- Product Leadership/Differentiation Strategy: focuses on the uniqueness of leading-edge products or new applications of existing products that the customer perceives as adding value, i.e., product customization, the convenience of store location, quality, product or service features, and after-sale services.
- Operational Excellence: concentrates on reducing manufacturing and other charges or delivering a value for money that no one else can match in the market.
- Customer Intimacy/Focus: seeks to limit its scope to a narrow segment of the market or customers through cost focus and differentiation.

5. CONCLUSIONS

An organization's knowledge has become a vital DCC to achieve SCA. The focus of KCO initiatives needs to be on the competitive priorities, the nature of their product or services, e.g., standardized/customized or mature/innovative, and the type of knowledge used, i.e., exploitation vs. exploration knowledge to solve problems or invent new opportunities. Setting the stage for transformation to KCO is a strategic change that requires re-engineering of the internal setup. BPR as a concept and approach has become essential mainly due to its alignment with contemporary trends in corporate strategy, technology, structure, and human resources, rather than from inherent attractions. Empowerment of cross-functional team members is becoming inevitable in KCOs as most people nowadays do knowledge work brought about by the evolution of the world's large economies from an industrial-based to a knowledge-based economy. In KCOs, the intellectual context of the position increases to the extent where the subordinate may have more expertise than their "hierarchical" supervisor. Therefore, managers have no choice but to empower their employees.

6. RESEARCH CONTRIBUTION

The analysis of previous literature sources demonstrated no shortage in the number of contributions devoted to exploring the conceptual foundations of KM, CRM, BPR, and competitive business strategies. However, there was no integrated conceptual framework to guide companies as to their successful implementation. Although the concept of BPR has been covered extensively in previous studies, there appears to be a scarcity of studies on designing an integrated framework for KCOs. The paper introduced a new theoretical

framework that synergizes the transformation of KCOs based on the main fields: BPR, KM, CRM, and business strategies. The KCO strategy refers to a knowledge-enabled transformational approach to building enduring and profitable customer relationships in dynamic and fast-paced environments. The proposed CKO strategic framework seeks to leverage distinctive core competencies (DCCs) and achieve sustainable competitive advantage (SCA). In facing shrinking business cycles, organizations could apply the KCO framework to leverage people, processes, and technology-based knowledge faster and better and by doing so, maximize their profitability by having product leadership through shorter time to market. Therefore, KCO needs to continue delivering changeable knowledge-based product and service capabilities and features.

7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Some limitations have to be stated. The proposed KCO framework presented is exploratory. The framework's conceptual variables have not been operationalized, nor have the validity and reliability of the research instrument been tested. It is suggested for future research to conduct an empirical study to examine the framework parameters. Areas of future work include validating the existing KCO industry practices using pilot studies, connecting planning and execution more clearly, and exploring how business strategy is enabled or constrained by the BPR, KM, and CRM strategic elements.

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