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BUSINESS GROWTH WITH A SUSTAINABLE OPERATIONS STRATEGY AT AN INDIAN MULTINATIONAL COMPANY

Dr. Amol Gore* & Mukta Khapre**

* Professor (Operations Management), University of Mumbai (Institute of Management Studies and Research), Mumbai, Maharashtra

** University of Mumbai (Institute of Management Studies and Research), Mumbai, Maharashtra

Abstract:

The competitive, regulatory and societal pressures have brought to fore the significance of sustainability performance. However, companies are still in the process of aligning the sustainable operations strategy and designing a definitive framework. The purpose of this paper is to provide insights from the existing literature and also present the case of an Indian Multinational Company that is making an attempt to effectively implement a mature model along the sustainability dimensions. The central issues are: How competitive advantage can be achieved with a sustainable operations strategy? How sustainability orientation in the operations strategy impacts the financial performance? The paper is based on a rigorous study of a single case and utilizes both primary and secondary data. Also, a discussion on implications for managers and directions for future research has been included.

Index Terms: Indian Multinational Company, Sustainable Operations Strategy, Case Study, Performance & Competitive Advantage

1. Introduction:

In this decade (2010 onwards), the deliberations on sustainability have accelerated significantly due to growing demands from all stakeholders to demonstrate substantial progress in environmental, social and economic dimensions. There is also a steady rise in the standards related to sustainable operations and an evolution of sustainability regulatory framework that can be implemented effectively. Moreover, companies are taking greater efforts toward managing sustainability by organizing their sustainability capabilities into more mature models. Indeed the field of sustainable operations has come a long way from Brundtland's report (1987) and Global Report Initiative (1997) to the consideration of entire operations network covering multiple supply chains (Winter and Knemeyer, 2013). However, there is a conspicuous absence of a unifying framework still and the theoretical models of operations strategy do not capture sustainability in entirety. Consequently, companies are experimenting their own way, many times grappling to produce acceptable outcomes, while the academia is attempting to merge the theme of sustainable operations strategy with mainstream operations management research (Kleindorfer, 2005) with the hope of providing better insights, explanations, and solutions. Furthermore, business organizations have to evaluate the success of their operations strategy along with sustainability metrics (Kiron, 2014) and certainly desire to know the financial impact on a year-on-year basis or otherwise. There are several, although scattered, collections of sustainability metrics or indicators (see e.g. Azapagic and Perdan, 2000; Golini et al., 2014) with little empirical evidence to insinuate the phenomenon. Concurrently, the active agenda is to develop integrated systems that pursue a cohesive approach to sustainability. According to Park and Pavlovsky (2010), the goal should be to embed sustainability considerations into a company's strategy and operations in such a way as to enhance business value and derive a competitive advantage. Therefore, the central research questions are:

- How competitive advantage can be achieved with a sustainable operations strategy?
- How sustainability orientation in the operations strategy impacts the financial performance?

In today's global economy, there is an increasing realization by managers that it is essential to establish mechanisms for sustainability goals in coordination with other entities of their supply chain in an economically viable manner. Hence, the work of developing sustainable operations strategies or in effect sustainable supply network strategies would have profound societal impact in a way that cuts across the geographical boundaries.

This paper intends to examine the contemporary work in the field so as to delineate, comprehend and operationalize the key parameters. Then, a specific case of an Indian Multinational Company has been presented to ultimately discuss the above research questions in the light of the case.

2. Literature Review:

The research on sustainable operations strategy has largely evolved from the broad operations strategy frameworks and the sustainability dimension has been just an appendage, or at best, an element whose impact on operations strategy expanses needs to be gauged (see Figure 1). For instance, Gavronski (2012) has subjected sustainable operations strategy to five points identified for operations strategy viz. competitiveness, strategic decisions, activities of operations value chain, organizational learning and external context. The traditional outline of operations strategy that enables a business unit to achieve a desired manufacturing structure, infrastructure and capabilities is utilized. Operations strategy is regarded as the set of decisions related to goals, resources and operational capabilities of an organization (Hayes, 2005). Recent work of Hill and Hill (2012) has further indicated that defining the problem and implementing the solution are tasks of high difficulty level and the subjectivity embedded in identifying and classifying order-winners and qualifiers is one of high complexity in the current times of hyper competition. Manufacturing capabilities are indeed a source of competitive advantage and manufacturing strategy is expected to build these capabilities. Although acknowledging the significance of operations strategy as point of departure for researchers, there is a scope to generate an independent model that enables organizations to achieve competitive advantage in the market with specific, planned, integrated sustainability initiatives in operations. Some companies have evolved to include sustainability as part of a balanced approach to strategy and allied work has then relied on the triple bottom line schema to create a balance or an integrated vision (Van Bommel, 2011; Mori and Christodoulou, 2012; Lima et al., 2013). Sustainable operations strategy is then better defined as a deliberate plan, primarily focused at the long term, aiming to respond to environmental and social pressures on production systems when creating socio-economic value. It is intended to position the company better against competitors under the view of sustainable development by considering the availability of resources, its impact on the environment, and social ethics for both products and transformation processes (Nunes et al., 2013). Today, firms have realized that their competitiveness is not just determined by what they do but also by what their upstream and downstream entities are doing and hence the sustainability issues have extended to managing global supply chains.

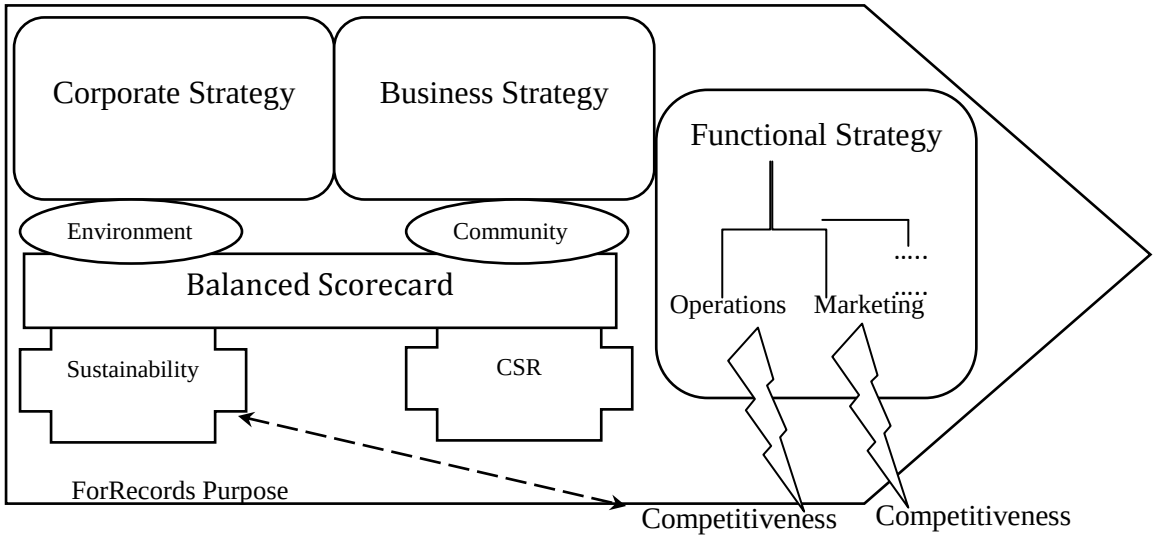

Figure 1: Evolution of Sustainable Operations Strategy

The established supply chain strategies have to be reassessed for their viability in face of the sustainability perspective. At the same time, the proposals and innovation in legislation such as WEEE directive 2002/96/EC on waste electrical and electronic equipment together with the RoHS Directive 2002/95/EC in Europe, applying the waste hierarchy, employing the 3Rs viz. reduce, reuse and recycle, have forced both manufacturers and researchers to explore options on how to improve the sustainability of operations across the entire supply chain. Obviously, extending to include issues such as remanufacturing, recycling and refurbishing, add complexity to supply chain design. According to Lima et al. (2014), five maturity levels can define the sustainable operations maturity model namely, compliance, internal neutrality, process management, operations network management and strategic integration. A firm can maintain edge over rivals in a particular industry setting over time, in other words, gain competitive advantage, when it crafts and implements a sustainable operations strategy and other firms are unable to duplicate the benefits of this strategy. Porter (1980, 2006) has argued that competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it while Shannassy (2008) has emphasized that a firm may create economic value by pursuing a strategy not being executed by rival firm or firms. Companies that consider sustainability-related strategies outperform their counterparts in terms of both stock market as well as accounting criteria such as return on assets and return on equity. Eccles et al. (2012) have shown that 'high sustainability' companies had an abnormal stock market performance, almost 4.8% higher than other companies. Koehler and Hespenheide (2013) observe that environmental, social and governance (ESG) issues can impact companies' financial performance directly from its operations or products, or indirectly through stakeholder actions along the entire value chain, in terms of direct operations risk (accidents/equipment failure, carbon emissions, water pollution, employee strikes, and health and safety), supply chain risk (child labour, natural resources use, weather catastrophes), product risk (toxic chemicals, genetically modified organisms recalls). In order to capture real value from ESG, business leaders have to demonstrate to their investors how they are prepared to deal with ESG risks and thereby suggest some change, in operations strategy or the business model itself.

The extant literature on sustainable operations and supply chain management focuses on green purchasing, remanufacturing, purchasing ethics, safety management,

supplier certification, carbon footprint and reverse logistics. Nunes et al. (2013) have collated sustainable operations practices under the lenses of manufacturing strategy and enlisted eco-design, sustainable production, sustainable supply chains, green buildings, corporate social responsibility and innovative models. Many organizations measure sustainability of their business and associated strategies with goals like transparency and communication to stakeholders, improvement of their operations and strategy alignment, and several metrics have been proposed such as Global Reporting Initiative (2013), the Carbon Disclosure Project CDP (2013), responsive business scorecards and sustainability assessment models (Villarreal, 2012; Taticchi et al., 2013). The observation suggests skew toward environmental aspects and is bolstered by research evidence, for example, Seuring and Muller (2008) classified some literature between 1994 and 2007 and showed that a number of published research papers on environmental related issues is still dominant within sustainability research community and more research is required on inter and intra organizational activities of best practices. Apparently, the sustainable operations strategy research is in the formative stage and contribution of cases and other data would aid the process of theory building.

3. Methodology:

The case methodology has been utilized in this paper and the focus is on a single case of an Indian multinational company. According to Dyer and Wilkins (1991), a single case can guide researchers to see new theoretical insights and question old ones. Moreover, a single, rigorous case study is usually more vivid and enlightening (Yin, 2008). As such case research has consistently been one of the most powerful research methods in operations management particularly in development of new theory (Voss et al., 2002). Actually, the case research enriches not only theory but also the researchers themselves. Through conducting research in the field and being exposed to real problems, the creative insights of people at all levels of the organization, an individual researcher personally benefits from the process of conducting the research. The specific phenomenon can be studied in its natural setting and meaningful, relevant theory generated from the understanding gained through observing actual practice. In this paper, the case data has been collected through review of company reports, meeting minutes, archival sources, structured and unstructured interviews, as well as direct observation. All data were cross-checked to examine whether each approach was supported by adequate evidence.

4. Case Findings:

The case company has been called as 'BCB' in this paper in order to protect the identity of the company and maintain the confidentiality in accordance with the prior agreement. Consistent with the analysis of the data the existing literature was compared with the case findings and presented as below.

4.1 The BCB:

The BCB Company is one of the largest manufacturers of high quality carbon black additives globally and part of a multi-billion dollar GBA group. As an Indian Multinational Group, the GBA has gained reputation world over with operations spanning over 36 countries and expanding rapidly. The BCB has carbon black manufacturing facilities in more than ten countries that include key markets of Asia, Europe and the Americas. The annual revenue of BCB is more than US$ 1.5 billion (2013-2014) and its technology centre in Maharashtra, India is highly acclaimed.

Carbon black is a material produced by the incomplete combustion of heavy petroleum products such as tar. It is virtually pure elemental carbon in the form of colloidal particles that are produced by incomplete combustion or thermal decomposition of

gaseous or liquid hydrocarbons under controlled conditions and its physical appearance is that of a black, finely divided pellet or powder. The major application of carbon black is as reinforcement to rubber products, mainly automobile tyres. Carbon black also finds a role as a black pigment to impart jetness in inks and coatings as well as UV protection in plastics. BCB produces carbon black in a high temperature reactor through a tightly controlled flame-synthesis process that uses oil as feedstock. The adjustment to reactor conditions such as temperature, reaction time, and so on enables the production of wide variety of carbon blacks to meet the needs of customers. BCB Company has stringent controls for important properties such as particle size and physical form to produce high quality ASTM grades.

4.2 Sustainable Operations at BCB:

The business vision of BCB Company is about ensuring sustainable operations globally in the carbon black business. The company is committed to long-term growth and intends to deploy the most sustainable technology and processes. In fact, from 2013-2014 onwards, BCB is viewing sustainable operations strategy as a key to the growth strategy at overall business level and is promoting Sustainable Operational Excellence (SOEx) in business. The Plant Head commented, "SOEx enables efficient manufacturing of carbon black and minimizes negative impacts on the environment. We have a target of reducing our direct CO_2 emission intensity by at least 20% by 2017. SOEx lays stress on process, product and people; we encourage a culture of responsible operations and wellbeing of our employees."

At BCB, the sustainable operations strategy is indeed carefully focused on issues deemed important by stakeholders. The priority areas are product responsibility, environment, safety performance, compliance and ethics. The sustainable operations strategy is aligned not only to the business strategy but also amalgamated with the parent GBA group's values thus differentiating from the competitors. Typical literature that suggests sustainability being used as just another accessory finds a variance at BCB where sustainable operations strategy is formulated and implemented effectively with SOEx at the heart of the business. Furthermore, SOEx is supported by two pillars viz. enterprise risk management and best practices management wherein risks are monitored and sharing of ideas are encouraged for business excellence. The intention is to go beyond the relevant laws and regulations and identify areas that can have a material impact on the future competitiveness of the business. For example based on the analysis of social issues, BCB decided to supply energy to businesses and homes around the sites apart from fulfilling the internal needs. It is known that carbon black manufacturing process produces large quantities of reactor tail gases that can be utilized to make steam and electricity however, the strategy of providing a valuable resource to neighbouring communities and reducing greenhouse gas emissions creates a kind of competitive advantage that Shannassy (2008) mentions as unrivalled. The directive is then toward sustainability through upcycling, an initiative typical for creating the Industry 4.0 environment. According to Jacobs et al. (2014), there is a need to identify such transformation potential against the backdrop of social challenges. The Deloitte report of Schlaepfer and Koch (2014) suggests that Industry 4.0 based on cyber-physical production systems, merging real and virtual worlds, would uphold cross-disciplinary through-engineering across the entire value chain and across full life cycle of both products and customers. The cognizance of supply chain and taking the sustainable operations strategy issues across the corporate boundaries has been appreciated by BCB already and hence a specific criteria has been developed for procurement process to ensure quality of the supply chain. The Head of Specialty

Business asserted, "We expect our suppliers to share our own high standards so that our strategy succeeds. We make sustainability integral in our global supply chain and address the environmental, safety and health challenges together and this is something that our competitors cannot match since it is emanates from the core." Nevertheless, a consistent approach for supplier management is yet to be perfected and BCB is attempting to frame the necessary policies. For instance, the feedstock oil in BCB's manufacturing process is often transported long distances and it is necessary to work closely with suppliers to reduce the carbon footprint. The literature findings indicating skew toward environment as part of sustainable operations strategy is reflected in practice as well with BCB's special environmental programme that goes beyond the requirements of ISO 14001 Environmental Management Systems. There are specific efforts to cut emissions, minimize waste and conserve natural resources. In fact, BCB has invested over USD 20 million since 2013 to initiate improvements related to energy efficiency and emission reduction. Furthermore, BCB generates a tri-monthly report to share the implemented best practices for sustainable operations and is considering feedstock from renewable sources. BCB is moving toward ISO 50001 energy management models recognized as EnMS. The targets set by BCB such as zero environmental releases, zero recordable injuries, over 50% reduction in waste generation intensity, and so on, are not only ambitious but also linked to the regular nodes of business strategy and the two pillars of BCB. The plant executive at Maharashtra facility remarked, "We have zero reportable releases last year. Besides, we have taken significant steps for water recycling, reusing process water and rainwater harvesting."

Since BCB helps customers meet their own sustainability goals and demonstrates supply chain sustainability when delivering products to customers, BCB is highly preferred. Also, BCB is committed to engaging with local people who are affected by BCB's operations and every year specific activities are charted, economic or otherwise. Consequently, BCB receives support from local communities that is way beyond the competitors. The sustainable supply chain framework proposed by Kuik et al. (2011) that comprises of three main components viz. manufacturing management, collaborative management and sustainable management, seems close to BCB strategies, however, the same at BCB is denoted by an umbrella term 'GBA World Class.'

4.3 Sustainable Operations Strategy Conceptual Road Map of BCB:

The sustainable operations strategy is formulated systematically at BCB and a specific committee designated as 'sustainability steering' plays a crucial role. The committee comprises of functional representatives, operations, supply chain management, along with Global Director of Sustainability, legal chief, as well as risk officer. The committee also monitors progress against key targets and reports to the Chief Operating Officer. The initiation of sustainability efforts and metrics is prompted by the leadership of the CEO and then the COO drives the process, integrates sustainability considerations into business decisions and budgets, weaves the operations strategy, and sets the stage for long-term growth. Figure 2 depicts the conceptual map at the BCB Company. The sustainable operational excellence is well aligned with the business strategy and deeply embedded in the core values of the group, driven by the vision, for a long-term growth. The established model entails several elements that ensure a competitive advantage in the carbon black business space. The key is sustainability at the heart of BCB and the thrust on innovations in product and processes to enhance performance in specific dimensions of supply chain sustainability. Since the carbon black business depends on limited natural resources such as oil, gas

and water, there is a responsibility to utilize these resources judiciously. The implementation of the latest technologies that enable achieving the sustainability targets is a perennial challenge as such. In the fiscal year 2015-2016, BCB is planning an exercise to assess the maturity level and substantial efforts are already underway. Financial indicators after a wholesome sustainable operations strategy shed some light on the success of the implementation as seen in the Figure 3. The sales have almost doubled over a six-year period and return on equity (ROE) is steadily rising over 17%.Thecompany is acquiring new customers at an attractive rate as well as retaining the existing customers. Also, the shareholders view the company positively and the image has strengthened significantly. During the same period the competitors have experienced erosion of their market share, rapid decline in profit margins, increase in customer complaints and disharmony. It seems that the competitors have indulged in the traditional resource-based view and are rather externally neutral entities with sustainability as window dressing or temporary fix and focus on making operations better by imitating known practices in the market.

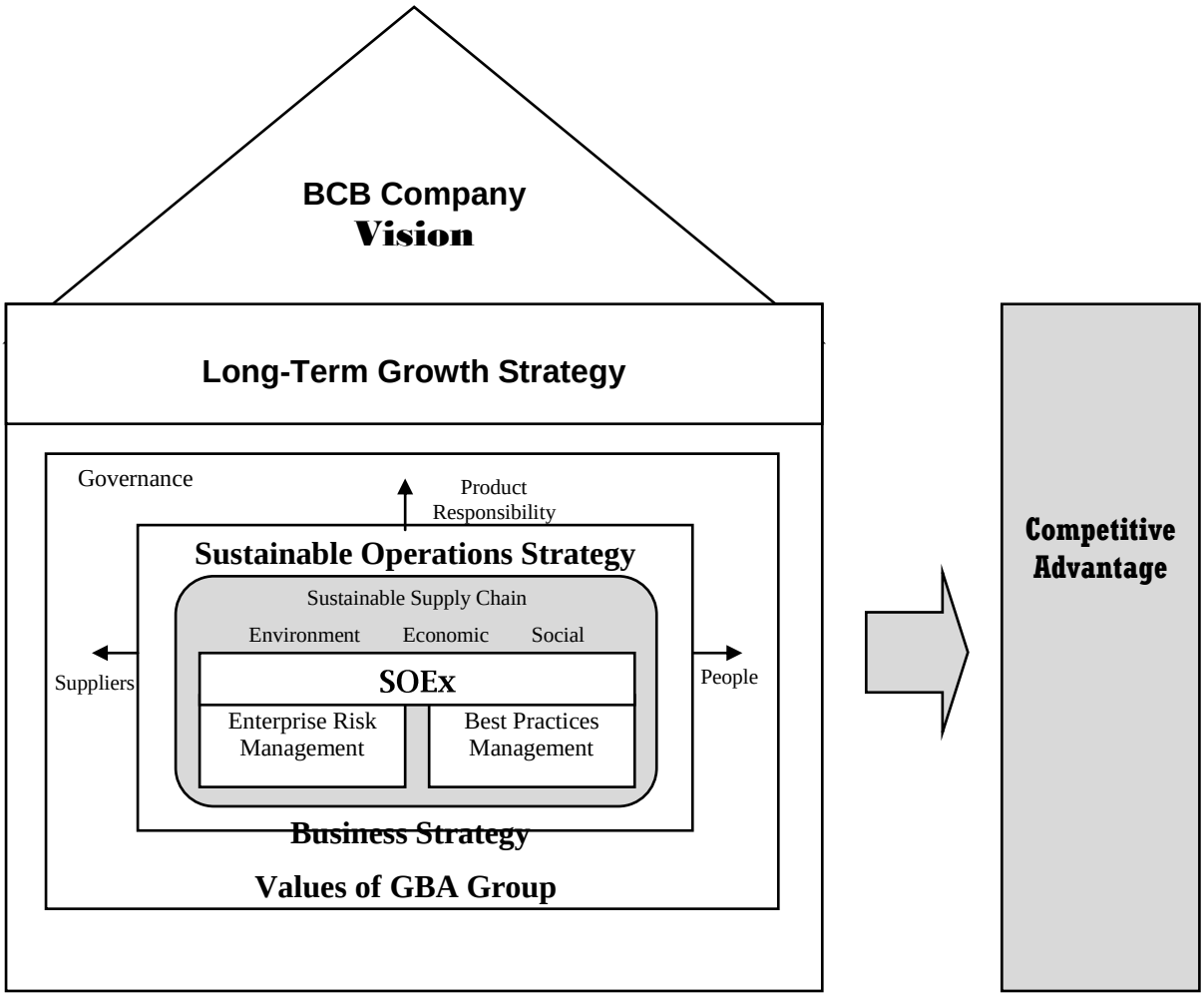

Figure 2: Conceptual Sustainable Operations Strategy Map at BCB Company

5. Discussion:

Companies inherently concentrate on business sustainability or more precisely the economic aspects, however, such terms have taken a wider perspective in this decade. Today, business sustainability is the increase in productivity and/or reduction of consumed resources without compromising product or service quality,

competitiveness, or profitability while helping to save the environment (Thomas et al., 2012). Further, sustainable operations strategy is not just about maintaining current operational levels it is also about penetrating new markets on a continuous basis in order to replace lost ones and ensuring that the company remains in business well into the future. Thus, it is clear that competitive advantage can be achieved only by integrating the traditional operations strategies with business strategies along with technology foresight, product development, resilient manufacturing processes and social sensitivity. The BCB Company has evolved a solution that stems from the values of the parent GBA Group and maintains cohesiveness for sustainable operations that stimulate the business growth. The idea is to build sustainability into all areas of operations and establish targets for GHG emissions, water, solid wastes, environmental releases, safety, and community engagement, similar to or in parallel with the typical financial objectives. The sustainable operations strategy at BCB takes the balanced scorecard approach to a different plane by establishing an integrated, embedded system that goes beyond just combining strategic and financial factors.

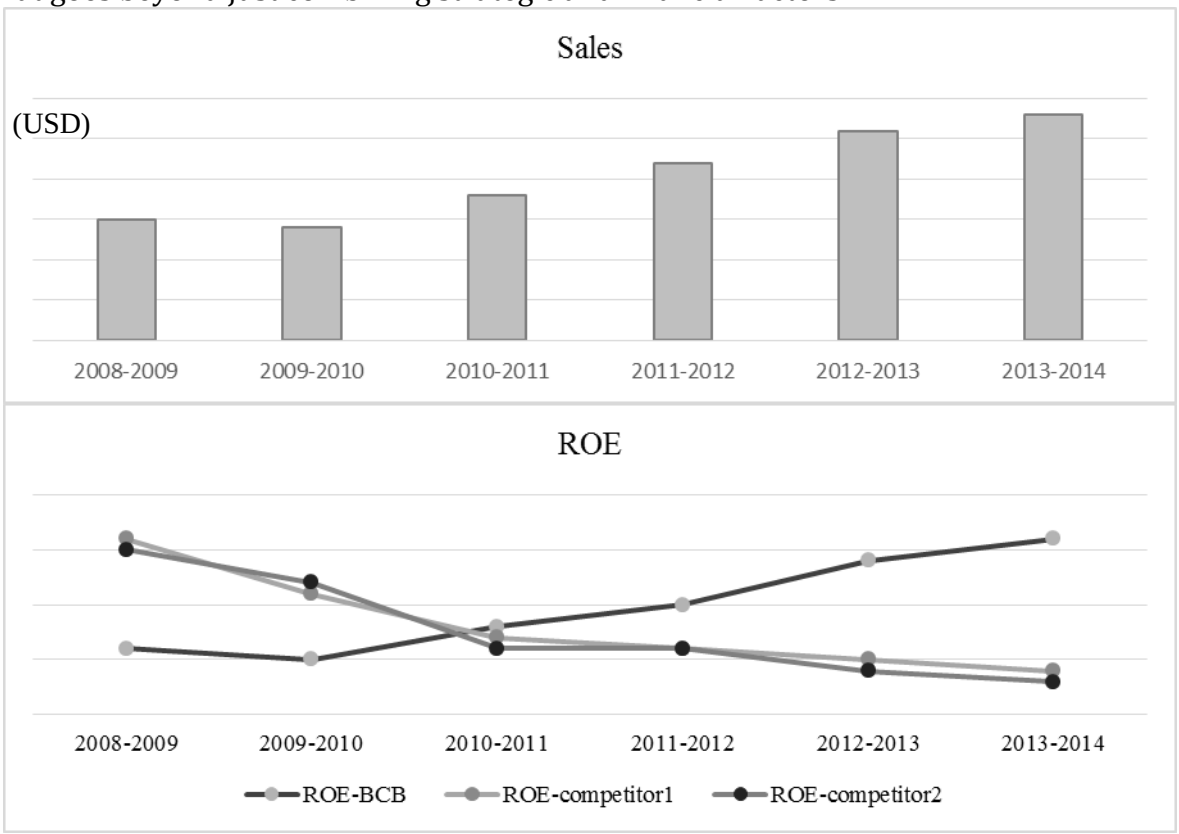

Figure 3: Financial Performance of BCB

Sustainable operations strategy develops competitive capabilities that rivals are unable to match and is distinctive in the sense that it tilts all the stakeholders in the favour of the company. The buyers not only prefer the company's products but also fortify long-term growth by meshing with it as a sustainable supply chain partner. The company builds its strength of operations defined by flexibility, delivery or otherwise but not at behest of sustainability goals. Corporate culture thus shaped over time reflects in the style of operating and becomes an ingrained behaviour manifested as business practices or policies. The work climate and ensuing creation of product, distribution and marketing is harder to duplicate and the company has better prospects for winning in the marketplace and realizing higher profitability. In BCB case, the management's ability to make a series of moves, both internally and in the marketplace

attracted investors and customers, resulting in outstanding performance. Top line improved substantially and the company stacked up against the rivals on product quality, customer service, productivity, eco-efficiency, regulatory approvals and factors regarded by buyers while making a decision. Social initiatives of BCB also worked in their favour and business clusters thrived in the inclusive sustainable operations strategy. The message of competence, responsibility, eagerness, and desire to remain in business over long-term was aptly heard by the stakeholders of the company. Competitive advantage emerged from the enhanced environmental profile of operations, reduced carbon footprint, sustainability practices supported by enterprise risk management and best practices management, satisfied governmental agencies, and selling energy instead of paying for disposal of unwanted by-products thereby adding bottom line benefits. BCB case reveals that the initial investments with the sustainable operations strategy were high and benefits were realized only after months of persistent efforts and concurrent outflows. Nevertheless, it is apparent that the financial performance is definitely improved and the results of the case bolster the existing literature in the field by providing empirical evidence. The elevation of maturity level in the organization is only driven with the top management leadership and it is only the aspiration of the leader that incorporates sustainability into the core of the business operations. Such visionaries don't stop at this juncture on the contrary they take the next leap to encourage their supply chains to adopt sustainability and work upstream and downstream to unlock the potential of set strategy. Ultimately it is a choice of each individual organization and demands unswerving commitment. Today many companies are still exploring how environmental, social and governance performance can affect the financial performance and there are few conclusive studies available and hence the significance of this case that suggests a rise in sales, ROE, profit margin and business growth with a sustainability orientation in the operations strategy. Obviously, only limited statistical analysis if any would be feasible with the data collected in this case research however, the insights are meaningful and relevant.

6. Managerial Implications and Future Research:

Sustainability is widely included in the corporate agenda since failing to engage with sustainability can expose companies to penalties, loss of goodwill and serious reputational damage. However, formulating a comprehensive sustainable operations strategy is still considered to be in the nascent stage and the research area is young although expanding fast. The competitors of BCB did not have any sustainable operational excellence in place and therefore they were unable to capitalize on their sustainability initiatives that were anyway patchy. First proposition that emerges is: Independent sustainability schemes cannot be smoothly merged with the operations strategy. Further, such schemes are unable to generate financial gains.

Managers dealing with complex supply chain issues may need to redesign and re-strategize to make sustainability spring from the core and woven into the operational structure. Similarly, as supply chains are transcending to agile networks, innovative external partnerships for sustainable operations can be construed as opportunities to create new sources of competitive advantage. At the same time, knowledge management patterns within the organization and employees' learning should incorporate environmental and social awareness. Before any regulatory agency or world body tables a legislation, organization has to be geared intrinsically to comply with the same and attain a better position against the competitors. In other words, managers need to be aware of the upcoming sustainability indices. Thus the second proposition is: Companies that have an integrated approach for sustainable operations

entail less time and lower cost for implementing new elements in the sustainability regulatory framework and/or certifications.

In this paper, a case of an Indian Multinational Company BCB in the carbon black sector that achieved business growth with a sustainable operations strategy has been deliberated. However, single cases have limitations to the generalizability of conclusions and theory development. Eisenhardt (1989) points out that people tend to jump to conclusions, ignore basic statistical properties and inadvertently drop conflicting evidence. Therefore, a suggestion for future research is to undertake studies in other sectors and in other firms with different contexts and countries. Also, the propositions mentioned above can be tackled quantitatively and with rationalist research methods like mathematical modelling.

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