Advances in Social Sciences Research Journal – Vol.6, No.7
Publication Date: July. 25, 2019
DoI:10.14738/assrj.67.6863.
Sakyi, K. A., (2019). Global Operations Innovativeness and Entrepreneurship at 3M Company Limited. *Advances in Social Sciences Research Journal, 6(7)* 627-632.

Global Operations Innovativeness and Entrepreneurship at 3M Company Limited

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ABSTRACT
This paper examines 3M Company's supply chain operations globally as well as its operational challenges in doing business in a developing country. 3M is a US-based company that is noted for its many innovative inventions and products. The objective of this paper is to evaluate best practices in terms of sustainability and entrepreneurial innovation. The paper adopts a purely desk-based secondary research approach by reviewing existing literature to make inferences and to throw light on some challenges experienced in supply chain management. The paper concludes that companies that incorporate sustainable principles into their operations ensure their survival and also they gain competitive advantage over their rivals.

Key Words: supply chain, sustainability, entry strategies, developing countries, corporate social responsibility

INTRODUCTION
3M is a US-based innovative firm that was incorporated in 1902 as a Minnesota Mining and Manufacturing company that specialised in innovative solutions and products (Burus, 2013:90-93).

According to Burus (2013), 3M has about 25 per cent of its stock of any item that is not more than five years old as they are constantly churning out new and improved products through constant innovation and research. 3M operates in twenty five (25) of the fifty (50) states in the USA in states such as New York, California, Texas, Iowa, Florida, Minnesota, Delaware, Massachusetts, Michigan, Dakota, Wisconsin, North and South Carolina, Ohio, Arkansas, Alabama, and Connecticut, among many others. They manufacture thousands of variety of products ranging from small items to heavy engineering items for construction, power electrical, oil and gas, defence, medical supplies, electronics, tools and equipment, among other stock (Burus, 2013)

Over the years, they have offered innovative solutions for traffic lights, construction, power cables, adhesives and tapes, among thousands of countless items, both consumer and industrial. Many of their small products have several cheap market substitutes and can easily be counterfeited or duplicated. However, their products can be guaranteed for extra quality and are fit for purpose as they invest heavily in research and Tech Labs (Burus, 2013)

The 3M Company has encouraged innovation, had created a Hall of Fame for innovators, and had sought solutions from outside individuals who had been incorporated as valuable partners. They had carried their products to the site of the customer or end-user to demonstrate the efficacy of their solutions to potential buyers, following a practise of. 'Follow the buyer before he/she is poached by a competitor or before they switch to a competitor' (Burus, 2013)

They thus made customers buy into their business and also they got closer to customers to have first-hand knowledge of their peculiar needs, develop long term bonds and also get testimonies from them (Burus, 2013). In that way, 3M got to know and understand the market dynamics better than their competitors did. It also enabled 3M to charge premium prices, and also to discover market niches and opportunities ahead of their competition. 3M had been observed to be competing solely on pricing (Burus, 2013:90-93).

Burus (2013) observed that during the 1990s, the rapid changes in technology, the globalization of the world, and rapidly changing consumer tastes posed many challenges in doing global business, with 3M being no exception as products began to have shorter life cycles, and new disruptive technologies took over production, leading to disruptions and disintermediation in the value and supply chains of firms. Companies therefore had to think on their feet in order to cope with the speed of business process change or enterprise resource planning (ERP). Companies which did not invest in Research and Development (R & D) and also which did not quickly adapt to those changes went under and became fossilized or they became like the Boiled Frog phenomenon or like an unchanging Greek Temple.

The famous Greek war general and philosopher, Xenophon, was said to have made the observation that 'change is the only constant which never changes because it is forever changing'. Companies which do not adapt to change are left behind and they become irrelevant to the global supply chain due to the rapid pace of change. In a globalized world with ever-increasing accumulation of knowledge and sophistication of consumers due to the speed of the internet and its easy access, all firms have to pay attention to the core supply chain factors of speed, cost, access, quality, variety, integration, and flexibility in their supply chain operations (Krawjeski *et al*., 2013)

METHODOLOGY

This paper relies on secondary sources and also makes assumptions about the entry strategy of 3M to a developing country, preferably Nigeria in Africa where we have a Greenfield market to exploit by growing it to maturity and harvesting it. Nigeria has been selected because it has the highest population in Africa of about 200 million people and also the population density is high. Nigeria also has many rich natural resources such as oil, tin, iron, and gas.

It is a country which has many educated and skilled workforce who are vibrant, innovative and adventurous risk-takers. Above all, it is a country beset with many business challenges such as corruption, piracy, counterfeiting, reverse- engineering, and lack of transparency in transactions, heavy oil pollution of the environment, many citizens being heavily steeped in taboos and superstitions, and having many other human challenges. This paper examines the sustainability policy of 3M via its carbon footprint stance, its ethical approach to issues, its value addition to society via corporate social responsibility stance or corporate citizenship, and its approach to the 3Ps of the Triple Bottom-line of relevance to the Planet, People, and Profit (Elkington, 1992)

The essay highlights partnership building in networks, and talent building in the talent pipeline, research of new materials which are eco-friendly, among other issues.

DISCUSSION

Methods of entering new markets

There are many methods for multinational corporations (MNCs) to enter foreign markets. Companies have options of either acquiring already existing companies in the host country or engaging in new direct investment alone by establishing a subsidiary or in a Joint Venture with another company. It can also use the cheaper option of franchising or licensing its patent to local host companies. It can also have Strategic Alliances with Governments in arrangements such as Build, Operate Transfer, and Lease (BOTL) and or enter into a Public Private Partnership (PPP) arrangement. It can also enter foreign markets by Mergers and Acquisitions as it happened to Daimler-Chrysler merger between German Mercedes Car Manufacturing Company and Chrysler Motors of the USA. Finally, it can either use a born-global technological approach to launch a virtual site online for trading and trending instantly in a virtual global market or physically export goods directly to the target market in the foreign country of interest (Johnson, Scholes, & Whittington, 2017:295-296)

New Entrepreneurial Venture of 3M

3M seeks growth and expansion into Greenfields in emerging, transitional, and developing economies such as the BRICS countries of Brazil, Russia, India, China, and South Africa. Furthermore, it recognizes Africa as the last frontier to experience exponential growth so it created a hub in South Africa as a Launchpad to the rest of Africa. South Africa was selected for its advanced infrastructure, know-how and its capacity to transport goods across the continent of Africa from Cape Town to Cairo.

3M engaged some market consultants who advised that there is great potential in Africa with a vibrant youthful population who have a penchant to consume a lot of both necessity, durable, and trendy technological goods as well as require decent infrastructure such as efficient railways, roads, schools and universities, residential buildings, research centres of excellence, aerodromes, seaports, hospitals, shopping malls, administrative buildings for governments, among many rising needs. 3M therefore made a bold move to extend its product range to Nigeria with supplies coming from both the USA and South Africa plants and warehouses, despite being aware that Nigerians are fiercely patriotic in a way and also very competitive.

However, 3M was counting on Nigerians' love for business ventures and their entrepreneurial skills to get their goods off their shelves. It planned using local in-store distributors on a commission basis as well as using online sales via their USA and South Africa websites. Their main worry was that Africa internet services were slow, expensive, and power supply was unreliable. Also there were many counterfeit products on the market. Besides, many citizens were so poor as to afford or access internet services.

Being an innovative Company, 3M devised a system whereby bicycles could be used to charge smartphones and also they developed advanced photo-electric batteries which could be used to generate electricity in small communities. What they could not tackle was the poor railway tracks and dilapidated roads infrastructure network which they hoped to rely on both central and local governments to tackle or fix. However, in most African countries such as Nigeria, government systems are so bureaucratic and unreliable as those in government are only concerned with their own selfish interests of clinging on to power and basking in leadership glory, enjoying the frills and perks which go with holding political office. This observation however, needs qualification as some public-spirited and transparent individuals have worked hard to transform Lagos into an enviable modern city.

Hypothetical Problems in 3M Supply Chain

It will be assumed for theoretical purposes of this paper that 3M faces the following problems in their supply chain. This is just hypothetical for case study only and does not reflect the real situation:

- Proliferation of many goods to produce
- Retaining talent in their talent pipeline

- Counterfeiting of their products
- Competition from substitute goods
- Short product life cycles
- Poor infrastructure networks

Specific Problems to Address

Two problems which 3M should focus on are:

- Overcoming transport logistics in developing countries
- Finding the right talent pool of skilled workers

Workable Solutions

3M should export its corporate entrepreneurship model to Africa by training local staff to imbibe its corporate culture and work ethics as well as also setting up plants and warehouses in Nigeria to reduce transport costs and labour costs of operating from the USA. It should also partner with governments through BOTL and PPP to develop transport infrastructure. It should continue with its renowned good ethical and eco-friendly practices based on the 17 UN Sustainable Development Goals and the PEELS model of Carroll, Elkington's Triple Bottom Line (TPL), Mendelow's Stakeholder matrix model, and using Cousin's Supply Chain Wheel model to improve operational performance in areas of:

- Organizational structure
- Portfolio of relationships
- Cost-Benefit Analysis
- Skills and Competences
- Performance Management

  (Cousins, 2002: 171)

According to Burus (2013), 3M has remained apolitical, low profile, and humane in its approach to business by observing best practices covering Elkington's 3Ps of attention to the Planet, attention to welfare of People, and attention to Profit for shareholders. Thus it has a holistic approach to business and it is far ahead of its peers. It practises green policies to reduce its carbon footprint by following the 3Rs of Reduce, Reuse, and Recycle (Cousins *et al*., 2008: 198-206). 3M involves all its suppliers in promoting and practising sustainable development objectives through its CSR policy (3M, 2019; Cousins *et al*., 2008: 222-225: Mangan *et al*., 2012:32 & 328).

It also engages with Pressure Groups, Interest Groups and all stakeholders in its procurements and transactions (Cousins, 2008: 242) In Make or Buy-in decision making, it is guided by costs, volume of goods, strategic importance to its interests, and also relative costs of outsourcing with consideration for culture, reputation, internal capacity building and other concerns. More importantly, asset specificity guides their decisions to either Make in-house or outsource, each option with its attendant efficiency gains and cost trade-offs.

As asset specificity increases, it becomes more expensive to outsource so it is better for it to make it in-house. It also requires networking and tight integration in its supply chain pipeline in order to reduce lead time and turnaround time. 3M for decades has been practising all the Japanese best practices such as 6 Sigma, TQM, QCs, Kaizen, Lean and Cell Production, 5S, JIT, JIC, SBUs, among others in their Project Management systems, using highly automated systems, robots, and soft-wares such as Oracle, SAP, PRINCE 2, and Web.2, among others.

According to Gadde *et al*., (2010) make or buy-in decisions do determine the boundary of a firm or company. However, in a globalized world, firm interdependencies abound in the value and supply chains such that firms are now virtual networks and boundary-less, showing their flexibility, agility, and amorphousness in global and world-class manufacturing, as well as their vulnerability (Lyson *et al*., 2009)

Lindorff *et al*.,(2012) posit that firms in controversial sectors such as mining, oil, gas, conflict diamonds, and arms production and sales should adopt utilitarian ethics of Jeremy Bentham (1789) and John Stuart-Mills (1863) by behaving in such a way as to minimize social harm and at the same time maximizing social good in a mixed approach of minimax and maximin. 3M should adopt this approach in any developing country that it enters because no company can satisfy all the stakeholders due to conflicts of interest (cf. Cyert & March)

RECOMMENDATIONS

- 3M should screen suppliers by scrutinizing them very well before awarding those contracts. Some sub-contractors could steal trade secrets and become competitors
- Contractors should be strictly banned from outsourcing what has been outsourced to them. This is to avoid external failure costs
- 3M should partner with reliable partners in carrying out business in developing countries by training those selected after diligent scrutiny
- 3M should maintain its sustainable policies of 3Ps to remain relevant to all stakeholders, particularly the local communities, governments and in meeting the UN SDGs, some of which are:
    - Eradication of poverty
    - Gender equality
    - Access to quality education
    - Climate change
    - Life below water
    - Food for all
    - Access to clean potable water
    - Responsible production
    - Reduced inequalities, among others

      (UN SDGs, 2018)

CONCLUSION

3M has been in business over a century and it remains ever strong because of its far-reaching and progressive policies. In reaching out to places in developing countries, it should ensure it deals with entities which are ethical, eco-friendly, and humane in their dealings in order for it to maintain its long-standing reputation. To do that, it should extend its values to its partners through systematic training and sensitization.

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