

Managing operations apple inc commerce essay



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Apple Inc is a large multinational in the consumer electronic business that builds on its ability to innovate and use its strong flexibility in product development speed to create competitive capability in the market. Fortune named Apple as the most admired company in the world. However, Apple did not figure in the top ten companies on use of assets, social responsibility, and global competitiveness in this survey. This study explores the reasons for this insofar as they lie in management of operations in the company.

A survey of literature reveals that there are few agreements on what constitutes lean or agile manufacturing and disagreement on the correct choice of operations management strategy. We examine whatever one can find in reports, literature, and the company's own publications and compare these to the gleanings from theory to arrive at some recommendations for Apple to consider for operations management strategy.

Globalisation has increased complexity of supply chains that need to span several countries with diverse cultures, laws and regulations, and time zones. However, with increasing pressure on the need to conserve non-renewable sources of energy and to mitigate the impact of operations on the environment, globalisation is a process likely to reverse in the not so far future. Apple must prepare for this through innovative strategies in organisation and distribution.

We recommend a strategy that simultaneously looks at lean when addressing use of resources and agile manufacturing in addressing customer needs, to meet competition on both, cost and product differentiation, fronts.

In looking at lean manufacturing, we strongly recommend moderation in implementation to preserve flexibility and agility.

Operations Management – Apple Inc

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1. 0 Introduction

Apple Inc is a large multinational in the consumer electronic business. The comment of James Collins, editor-in-chief of the 'T3 Consumer Gadgets' Magazine', talking about the iPod exemplifies the image and sheer volume of market penetration achieved by the company; Collins says:

“ It’s cool across the board: everyone from my seven-year-old niece to my 60-year-old uncle has one.”

Norbert Reithofer, CEO of BMW adds to the image in his comment (in Bernasek, 2010):

“ Apple’s customers are more than customers — they’re fans. The whole world held its breath before the iPad was announced. That’s brand management at its very best.”

Apple builds on its ability to innovate and use its strong flexibility in product development speed to create capability in the market. Consider the fact that Apple introduced 7 different versions of its iPod within four and a half years of launch (Levy, 2006). Despite not being the first-to-market, it has used this capability to leverage its expertise in the iPod, iPhone, iTunes, iWorks suite of products and command a premium on all its products (Boddie, 2005).

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However, on the critical issues of use of assets, social responsibility, and global competitiveness it does not score favourably (money. cnn. com). As long as Apple's products command a premium, and as long as it can continue introducing innovative new products this does not appear a serious concern. However, it is the contention of this report that despite these factors, Apple stands to gain tremendously by using modern operations management concepts such as 'Lean Manufacturing' (which we alter to 'Lean And Green'), 'Supply Chain Management', 'Quality Management' etc. In this report, we look at these concepts in some detail to demonstrate how they can help Apple meet its commitments to its stakeholders and meet the need for 'Corporate Social Responsibility'.

2. 0 Background

Apple Inc. (Apple) is a multinational consumer electronic corporation headquartered in Cupertino, California in America established in 1977. The company designs, manufactures, and sells hardware and software products for computers, entertainment, and portable music systems. Some of its best-known products include the iPod, the iPhone, its desktop and the MacBook Air line of laptops. Vital backup through software for computers and its iTunes virtual music store form important parts of its operations (google. com).

Since its inception, the company did moderately well as a number of CEOs changed between 1977 and 1997 when Steve Jobs, the founder of the company, returned to take charge of the company. Steve has remained the CEO since then, except for short periods in 2004 and 2009 when Tim Cook charge during his absence on medical grounds. Since 1997, the company has <https://assignbuster.com/managing-operations-apple-inc-commerce-essay/>

grown phenomenally and presently employs 35, 000 personnel and recorded revenue of \$42. 91 billion for the year ended September 26, 2009 (finance. yahoo. com). Young and Simon (2005) call Steve’s return and the growth of Apple following his return “ the greatest second act in the history of business in the subtitle of their book.

Its stock prices dropped to a low of \$82. 33 on January 12, 2009 from the previous high of \$193. 91 on December 17, 2007 mostly in response to the economic turndown that affected all companies. Since then, the stock has risen steadily and traded at \$226. 60 on March 8, 2010 (ibid).

Apple has established a unique image for itself through its characteristic advertising and the design of its products. The Fortune magazine named Apple the most admired company in the world in 2009 (Colvin, 2009). Again, in 2010, Fortune named Apple as the most admired company in the world (money. cnn. com [b]), based on a survey among industry leaders using nine criteria. Importantly, from the viewpoint of this report, Apple did not figure in the top ten companies on counts of:

Use of Assets,

Social Responsibility,

Financial Soundness,

Long Term Investment, and

Global Competitiveness

It rated No. 1 and No. 4 on Innovation and Product quality respectively. The same report records that Apple have so far sold 250 million iPods, 43 million iPhones, and 32 million iPod Touch, and introduced the 'game changing' iPad portable computer.

In 2006, the Mail on Sunday carried a report that alleged Apple's contract manufacturers in China, Foxcom and Inventec, were using sweatshop conditions for the production of the iPod (mailonsunday.com); The Washington Post followed washingtonpost.com [a]). Apple took immediate action to investigate and correct the situation (washingtonpost.com [b]).

3. 0 Theories of Operations Management

In the emerging scenario for manufacturing enterprises, three trends evident are the deployment of technology and effort towards lean and green manufacturing, quality management (TQM) and the impact of globalisation on the thought processes of business. In the following passages, we draw on existing research to discuss the points of convergence and the conflicts between different approaches to operations management.

3. 1 TQM and Lean

Pettersen (2009) says that it is very difficult to find a definition of 'lean' despite this being a popular management concept. Some authors have attempted to define the concept while others have questioned whether it is indeed possible to understand the meaning of lean management through a narrow and restrictive definition (ibid). This researcher (Pettersen, 2009) carried out detailed investigation of lean and "its closest relative" TQM that threw up a number of observations that help us understand the concept of

lean and TQM. The most important observation is that “ the two groups [,] human relations management and supply chain management are not definable characteristics of lean ... they are important (although not vital) parts of the lean concept” (ibid: 132). On the other hand, TQM sees employees as components in the production process that cannot be trusted to produce good quality and focuses on removing possibilities of human error from the system. In addition, this author finds divergence in the general opinion that lean implies waste reduction, and says that lean aims at two different types of goals; those that are internally focussed, and those that look outward. While internally focused initiatives may look at cost reduction the externally focused may seek a goal of higher customer satisfaction. In addition, Pettersen (2009) finds divergence in the opinion that lean is a set of practical waste-reduction tools compared to others who believe lean is a philosophical approach to operations management. In his discussion of the similarities and differences between lean and TQM Pettersen (2009) points out that in lean quality is a secondary consideration and decreasing cost through waste reduction is an important concept to lean with some research saying that waste reduction adds to customer value. Waste reduction is a significant aspect of TQM, “ but under the banner of poor-quality-costs” (ibid: 134). Perspectives of the two systems also differ. TQM focuses on the internal structure of the organisation while lean sees the need to address the entire supply chain where the internal organisation is one part of a value-creating stream.

Another major point of departure between TQM and lean is that TQM strongly emphasises investigation of customer requirements while lean does not

emphasise this as strongly. However, there appears to be convergence in literature that lean manufacturing implies a constant focus on reducing waste of all types, i. e. waste of materials, time, equipment, space, inventories, and human effort across the entire supply chain (Corbett & Klassen, 2006). This focus leads to management of operations in such a way that helps improve quality, reduce costs, and improved service to customers located all over the globe.

Pettersen (2009) also points to the many similarities in the two systems of TQM and lean. Both see quality as the responsibility of senior management and focus on removing the human factor to reduce errors. This requires management to concentrate on analysing and improving processes and training people to achieve better quality and cost reduction. Both also focus on continuous improvement through learning with a small difference, TQM looks to stimulate creativity and learning for the individual and quality a result of individual efforts while lean emphasises standardisation of work and collective learning. Both TQM and lean see the importance of supplier and internal worker team participation through long-term partnerships.

3. 2 Globalisation, Green and Supply Chain Management

Globalisation, provided impetus by the information technology revolution and the lowering of trade and other barriers by nation states, has witnessed increased and free movement of capital and labour across national boundaries. For manufacturing operations, this has meant offshoring of production, inventories, and suppliers as firms look to find customers across the world and to benefit from the differences in economies, infrastructures, and the regulatory mechanisms that exist in different countries and regions

(Manuj & Mentzer, 2008). These authors state that firms have restructured their supply chains to “ operate on a global basis to take advantage of the international product, factor, and capital markets” (Manuj & Mentzer, 2008: 133). Therefore, we can see globalisation as a strong influence on revenue generation by enabling entry into new markets and finding vendors who can supply goods of the same quality at cheaper prices and improved logistics for existing markets. Continuing trends since the last few years have seen companies shift their entire manufacturing lines to regions that offer competitive facilities to reduce manufacturing costs.

These processes come with some serious downsides also as evident from the complexity of management of a supply chain that extends across several countries that have different laws and regulations, time zones, and cultures. In their drive to outsource production many companies, including Apple, find themselves accused of adopting work and labour practices completely unacceptable to western sensibilities but which are okay in those countries. In this last statement, we hasten to add, there is a fallacy in that it is not the acceptability of sweatshops in the host countries of the subsidiaries but more a question of poor monitoring and governance.

An added dimension is the increasing stakeholder pressure to ensure sustainability of operations through restraints on the use of non-renewable natural resources, and controlling pollution and emissions that lead to climate change (Sarkis, 2001; Kovacs, 2008). This pressure to ‘ go green’ requires firms to work with their suppliers and customers to change production processes and promote recycling. Within the organisation, firm now need to analyse their operations and processes, and assume extended

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stewardship through the entire life cycle of their products to diminish impact on the natural environment through changes that reflect a positive attitude toward corporate social responsibility (Corbett & Klassen, 2006). The difficulty remains on how to measure the environmental impact of the operations of a firm as no metrics, except for the ISO 14000 standard. This standard sets out the procedures for identifying environmental aspects of site operations, safe handling and disposal procedures for hazardous materials and waste, and compliance with relevant environmental legislation (Corbett & Kirsch, 2001), but does little to provide a metric for measuring the environmental footprint of a multinational and multi-location firm. Where companies deploy outsourcing as a strategy they may face resistance from suppliers reluctant to adopt green practices as they see these as time consuming and expensive (Larson & Greenwood, 2004) and requiring high upfront investment for changing manufacturing technologies on which the return on investment is low (Rothenberg et al, 2001).

In implementing greener manufacturing firms need to look beyond mere cost efficiencies because such initiatives deliver benefits difficult to quantify into money earned, but are substantial nevertheless (Larson & Greenwood, 2004). Friedman (2008) points to the example of Wal-Mart who found that their lean and green initiatives improved financial performance and earned them respect from customers. This respect translates to customer preference to buy from environmentally responsible firms and pay a price premium, which can finally influence the bottom line positively. However, having considered that going green holds a number of potential benefits for the firm; it is understandable that global suppliers, not into retailing, may not

find these as plausible reasons to make investments for converting to a greener manufacturing technology. Gattiker et al (2008: 28) say that

[. . .] it is difficult to ask suppliers to engage in environmental practices when the buying organization lacks (or is perceived to lack) environmental commitment and concrete practices. Thus, buyers may need to “ get their own house in order” before requiring the same of suppliers, or vice versa.

In the considerations that we have discussed above, one can see numerous conflicts that may arise. For example, lean manufacturing requires movement of materials within the supply chain based on demand. Earlier concepts of safety stocks, bulk purchases to avail discounts, and inventory holding have become passé as firms focus on ‘ Just-in-time’ (JIT) inventory management. However, this requires purchase, production, packaging, and transport of ever reducing batches of materials that can adversely affect the green approach. Christopher and Lee (2004) discuss this conflict at length to conclude that, in the context of global supply chains, lean manufacturing results in longer lead times and more inventories that contradicts lean management principles. In this, they extend the findings of an earlier research by Levy (1995) that concluded that globalisation of the supply chain results in higher levels of pollution because of the longer transport routes and smaller batches. Rothenberg et al. (2001), in their investigation of the automobile industry, also point to the fact that implementation of lean processes, waste reduction measures do not add to environmental performance or pollution reduction, and that the relation is negative. This contradiction requires the firm to rethink its approach to overcome the negatives of JIT operations and find innovative solutions that may involve re-

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useable packaging and reduced container sizes and product mix to decrease package volume. It is difficult to identify such strategies for global supply chains.

4.0 Operations Management Theories and Apple Inc

How Apple manages its global supply chains is not readily discernible from company literature and research documents. The only mention found is on page 16 of the 'Industrial Engineer' magazine that quotes Mike Janes talking of Tim Cook the fill-in chief executive of Apple in the absence of Steve Jobs away on medical leave. Mike says,

“ Supply chain management, which seems so incredibly unsexy, is very sexy when you look at your bank account and you have managed the product transitions perfectly. That’s the thing that Tim is absolutely a master at. ... Tim is an amazing, brilliant mind when it comes to operational excellence and is really a master of execution ... Tim Cook is right at the top of the list.”

Apple enjoys a unique position in the market in that it does not look to measure and investigate customer requirements but looks to create customer needs by offering innovative and feature-rich products, which at first sight the customer do not require but soon become a need through use of the product.

Another issue that most research in the area of operations management seen in the light of globalisation and environmental pressures misses is the need to think local while going global. The reducing quantities of available natural resources, especially oil, and the disagreement on use of nuclear energy, the only viable alternative and increasing pressure on issues related

to climate change require companies to rethink their strategies. Apple, in its manufacturing processes emitted 3.87 million tonnes of greenhouse gases in 2010, added to this is the 5.40 million tonnes that the use of their products by their customers added to the burden. These together represent 91% of the total emissions of pollutants for which Apple is responsible (apple.com[a]). While Apple, in various statements on its website, says that they are taking proactive action on these issues and are industry leaders in this respect, we believe Apple has to keep an eye on the future and use its strengths of innovation and agile management to initiate action that will help it and the industry. Steve Jobs says that Apple is far ahead of competitors in these areas and by 2010 Apple will be recycling about 28% of its product in America compared to Dell or HP who achieve about 10%. A reason behind this, Steve explains, is the use of high quality materials that recyclers look for (apple.com[b]).

Apple has taken a number of actions on its own and in compliance with government regulations to mitigate its impact on the environment. Some of the salient actions are the phasing out of lead batteries in 1991, stoppage of use of CFCs in manufacturing, and implementation of the ISO 14000 quality standards in 1996 (apple.com[e]). In 2000, all its manufacturing sites were ISO 14001 certified (calrecycle.ca.gov).

5.0 Conclusions and Recommendations

Morrison (2010) uses an analysis of the success factors at Apple to recommend a set of four 'mantras' that other companies could emulate. The first is that one needs to avoid following the herd, a strategy Apple adopted in avoiding the building of a miniature laptop and instead came out with the <https://assignbuster.com/managing-operations-apple-inc-commerce-essay/>

ultra-thin Air, a product in line with the Apple image. Next, he says is that a company should not back out from fights it can win, a strategy Apple displayed when it pulled NBC's television programs from the iTunes Store in 2007. NBC backed off within days and now other media companies hesitate to face Apple on pricing. Third, says Morrison is to flatten hierarchies within the organisation, as deep vertical structures tend to dither when it is time to act. Finally, and most relevantly to the context to quality management, Apple has never looked at market research or to emulate its competitors but goes by its own feel to create products like the iPod and the iPhone, which create their own market. While several companies have adopted some of these strategies, none of them has used all four together. The result is the spate of innovative products that make Apple the most valued company in the world. Morrison says " Apple's culture has codified a habit that is ... especially valuable for firms that make physical things: Stop, step back from your product, and take a closer look. Without worrying about how much work you've already put into it, is it really as good as it could be? Apple asks that question constantly."

Hallgren and Olhager (2009) find that in intensely competitive markets, the firm has the option of choosing to distinguish itself on price or on product differentiation, and the choice of operations management must align with the chosen strategy. Lean management is good where the firms aims at cost leadership where processes are repetitive, require adherence to predetermined schedules, a steady flow through the production process. Conversely, where high customisation, changing variety of products, and agility to introduce new products is the determinant of competitive strategy,

the firm should choose agile manufacturing. Examining the internal and external factors these researchers (ibid) use a comprehensive review of literature that lean and agile manufacturing differ in the results, one helps cost leadership and the other can significantly raise costs to obtain agility. Examining the case of Apple, it is evident that the correct strategy must consist of agile manufacturing. However, we do not agree with Hallgren and Olhager (2009) that lean and agile are mutually exclusive strategies. In this, we find support in the earlier work of Katayama and Bennett (1999) who proposed that a combination of lean and agile is mandatory for long-term competitiveness. These writers see the need for a firm to think lean when addressing resources and agile when looking to build capabilities to meet customer requirements. We recommend this strategy to Apple.

Chen et al (2009) discuss lean concepts and point to potential pitfalls that an overzealous implementation can cause. They emphasise that lean management aims to eliminate waste, effectively manage personnel, distribute design among entities that are best at each stage, work with the supply chain, manage customers, and wisely manage the organization's finances. Their (ibid) paper draws attention to the fact that in addressing elimination of waste the firm may risk elimination of creative time that is so essential for innovation. Focussing on short-term value creation through cost reductions may threaten competitive ability that can only come through radical and disruptive innovations. Similarly, when a company focuses on building a lean supply chain they risk disruptions of the processes that late or faulty shipments and failure of any of the links in the supply chain (Chen

et al, 2009). In these warnings, we see echoes of the very strengths that Apple relies on to lead competition.

Using the recommendations of Chen et al (2009), we can see that in order to derive maximum benefit from lean operations Apple needs to maintain a high flexibility and agility in its design and manufacturing capabilities linked to the innovative spirit exemplified in its motto - ' Think Different'. However, this does not imply that Apple has no use of the concept of lean; it is through careful and moderate application of its principles that the company can build strength to meet the stress of economic and political disruptions, and most vitally meet the growing competition brought about by rapid globalisation.

Word Count: 3483