
Operations Management Practices of Apple within UAE Market: An Exploratory Study?

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Abstract

Introduction: *Due to the basic yet appealing design of Apple's products, their competitive approach may be defined as product differentiation. Apart from the technology employed by Apple, the company's design is also a success factor. In this aspect, the company's reputation is built on its superior product design. Minimalism is one of the design characteristics of Apple products. This paper explores the operation management practices of Appel within UAE market.*

Methodology: *Although difficult, qualitative research in international marketing research is beneficial since it allows researchers to investigate organizations and environments in their native surroundings, allowing for a more holistic approach rather than imposing one's culturally educated preconceptions. A case study technique is applied in this example, with operation management practices as the focus. When evaluating the data, a replication logic is used.*

Result and Discussion: *This study explores the company activities in the UAE. The results were found the firm has done well in the smartphone market, but it has to focus more on the growth of other areas like Apple Pay and Apple Card. Furthermore, the company has to upgrade its supply chain system in order to deal with the pandemic's interruptions.*

Conclusion and Recommendation: *Theoretical and practical implications are introduced as well as suggestions for future research.*

Keywords: *Appel, Operation Management, Supply chain, Productivity; UAE.*

1.0 INTRODUCTION

1.1 Company Background – Apple Inc.

Apple Inc. is a US-based MNC that makes software, consumer electronics and other online services. It is the largest IT company of the world in terms of revenue and has the title of world's most valuable company. The company was founded in 1977 and works a public company. The main products which are offered by a company are Apple TV,

iPhone, iPad, AirPods and iMac. The services offered by the company includes AppleCare, Apple Card, Apple Fitness+ and Apple Pay etc. As of 2021 estimates, the company has a workforce of 154, 000 employees and the revenue of the company in the same year was US\$365.82 billion. The company works in the consumer electronics industry and mainly deals with the production and distribution of iPhone products across the world (Al-Dulaimi et al., 2018; Alkatheeri et al., 2020; Almarri et al., 2020; O. Alshamsi et al., 2019).

Apple is working in UAE as well on the following locations:

1. Abu Dhabi, Al Maryah Island Abu Dhabi.
2. Abu Dhabi, Yas Mall Abu Dhabi.
3. Dubai, Dubai Mall Downtown, Dubai.
4. Dubai, Mall of the Emirates Al Barsha Dubai.

With the help of these branches, the company is able to fulfil the customer demands in the region.

1.2 Industry Background – US Smartphone Industry

As mentioned earlier that the Apple works in the production and distribution of iPhones across the globe so the main focus in this study will be on the iPhone product line of the company. Hence, the US smartphone industry background has been discussed in this section (Alkutbi et al., 2019; Dagnoush & Khalifa, 2021b, 2021a). According to the January 2022 forecast, there has been an anticipation that sales of smartphones in US will increase by \$1.7 billion and the two main players of the US smartphone industry are Apple and Samsung. The combined market share of the two companies is 70% in this regard and the share of the two have increased simultaneously in the recent years. The penetration of smartphones in United States varies as per the location and compared with that of rural areas, the use of smartphones in suburban and urban areas is 10% more. If only smartphone market is focused, the main competitor of Apple is Samsung. However, outside US market, the competition is also given by Huawei, Oppo and Vivo as well (Michel-Villarreal & Vilalta-Perdomo, 2020).

1.3 Competitive Strategy Followed by Apple

Apple's competitive strategy can be classified as product differentiation in this regard due to the simple yet attractive design of its products. The four elements of the Apple's competitive strategy are (Michel-Villarreal & Vilalta-Perdomo, 2020):

- Focus is given on the functionality and design of the products.
- The customer experience is enhanced.
- The ecosystem of the Apple is strengthened.
- The dependence of the business is decreased from the revenue generated by iPhone sales.
- The features offered by Apple are adaptive and provides seamless experience to the customers.

2 Literature review

2.0 PRODUCTIVITY

The productivity activities of the company have been explained as follows:

2.1 Productivity Measurement at Apple

The productivity is the average measurement in order to measure the effectiveness of the procedure of production that will be the ration between the output and input units of processes. There are various productivity measurements and the selection of them depends upon the objective of productivity measurement and on the availability of data. The approach of productivity measurement is not so different than the one followed by the other manufacturing companies while having an increased focus towards the development of quality. The focus is given on the continuous improvement and development of the products being offered by company in the given case (Michel-Villarreal & Vilalta-Perdomo, 2020).

The productivity of Apple in UAE has remained positive as the brand awareness and the product demand both have remained at the increasing end. The regional office in Dubai is serving the needs of the entire MENA region with area-based franchises. The company has recently broken its own record in UAE of the sales of iPhone products. The revenue generation was increased by 36.4% as compared to the original expectations in this regard.

2.3 Five Main Factors of Productivity

The five main factors of the productivity are:

- In order to finding out the productivity in any context, the assembling of energy and personal attitudes plays an important role, either it is work associated or not. That is why, it is significant to manage both successfully.
- In terms of executing a task with deficient resources is one of the elements for weakening a productivity. So, having technical equipment, training and supervising are key factors for achieving the goals of productivity.
- The set objectives and planning with the required resources will definitely encourage the productivity of employees regarding their consistency.
- The leaders of team are also included in terms of achieving the objectives, and their personality can affect the productivity, a trustworthy and balanced leader can raise the productivity in any department (A. H. S. M. Alghfeli et al., 2019; M. N. A. N. Alharthi, Khalifa, Abuelhassan, et al., 2019).
- Finally, the last factor is to promote the physical environment in an organization including the natural lights, equipment availability, labor necessities etc. which can contribute to the productivity growth (Mišić & Perakis, 2020).

2.4 Recommendations for Improvement in Productivity

Productivity improvement is described as the procedure of getting more production from a working hour. There are numerous recommendations for improvement in productivity:

- A company needs to understand that they should not compromise on quality over quantity. Otherwise, the process will be repeated again which would be more costly.
- A company should realize that it is not exceeding its resources by exceeding the working times without breaks which could also shift the burden on technology and resources.
- Time and budget set for the tasks should be manageable, in this regard an alarm should be set for every task and budget should also be fixed for every task of the productivity.

3.0 FORECASTING

The forecasting approach followed by Apple has been discussed under the following headings (Michel-Villarreal & Vilalta-Perdomo, 2020):

3.1 Forecasting at Apple

Here are some easy steps for calculating the forecast for a company like Apple:

- Keeping the record of business data such as sales of every month.
- Company can also calculate forecast the products by putting them in various categories of products for easily handling the process.
- Calculation of forecast could be simple and easy by calculating the annual forecast by taking a year as a time period.
- A company should identify and keep in mind those factors that can influence their sales. Company can also purify its sales forecast with the time to make it appropriate and up to date.

3.2 Calculations of Forecasting

The forecasting of the Apple in terms of demand and sales has been explained in this section. For each of the product of Apple, the demand forecast can be computed by with the help of following items:

- Expected number of annual issues.
- Point of re-order.
- Safety stock.
- Forecast demand.

There are four commonly methods of forecasting of a product including the moving average, exponential smoothing, last year demand and previous year's calculation. The formula which can be used for the computation of the moving average has been listed as follows:

Demand Forecast = (Actual Item Issue / Seasonal Factor + Demand)/ No. of Periods.

When exponential smoothing is used, then the following formula can be used for demand estimation:

Demand Forecast = (Trend Factor + Average Demand) * Seasonal Factor

Hence, using these formulas one can easily calculate the demand forecasting in this regard. For example, in the month of April 2022, if the demand of iPhones was anticipated at 20, 000 units in Dubai region and the actual items issued were 15, 000 and the seasonal factor is 10 and the no. of periods are 5 then the demand forecast is done as follows:

Demand Forecast = (15, 000 / 10 + 20, 000) / 5 = 4, 300 units.

Hence, the demand for the next months is 4, 300 units in the given case.

3.2 Apple and Capacity Management

The capacity management at Apple has been managed as per the standard capacity management practices in this regard. Some of the methods used by Apple in terms of capacity management are listed as follows:

1. Identification of the IT capacity requirements so that the current and future workloads can be met.
2. The capacity management plans are maintained.
3. The performance goals are fulfilled within budget and the time.
4. The diagnosis and resolution of incidents is being done.
5. The impact of variances on the capacity is being done and the performance is improved in a cost-effective manner.

4.0 PRODUCT AND SERVICE DESIGN

The product design in context of Apple has been discussed as follows:

4.1 Designing of Products at Apple

Apart from the technology being used by Apple, the design is also a success feature for them. A big part of the company's reputation is with the super product design in this regard. The features of the design given to the products of Apple includes minimalism, signature simplicity and easy interface. The design plays a vital role in the popularity of the products in the given case. The mission of the company is to make elegant and functional devices across its product platform.

4.2 Impact of Products on Ethical, Legal and Sustainability Considerations

The products manufactured by Apple are often criticized as being harm to the environmental sustainability of the planet but the company from time to time, through its sustainability policy (M. N. A. N. Alharthi, Khalifa, Ameen, et al., 2019; Alseiari, Khalifa, Al-Shibami, et al., 2019; Alseiari, Khalifa, & Bhaumick, 2019; El-Aidie et al., 2021). The main impact factors of the sustainability policy of the company are listed as follows:

- As per the environmental progress report of 2021, more than 100 suppliers committed to the use of 100% renewable energy.
- The company also won the award of safer choice partner of the year from the EPA.
- The facilities of Apple were operated on renewable energy.
- The corporate operations of the company are carbon neutral since April 2020.

4.3 Product Life Cycle, End of Life Cycle Analysis and 3Rs

The product life cycle at Apple follows the traditional four stages including the initiation, growth, maturity and decline stages (Khalifa, 2020b). For example, when a new iPhone product is released, one can observe a its peak demand after the launch phase (which is obviously the growth and maturity stage). Soon after once the next generation model is launched, the old model loses its attraction (M. N. A. N. Alharthi, Khalifa, Al-Shibami, et al., 2019). Also, the company has been engaged in the active recycling of the Apple products in this regard. The company is actively:

1. Reducing the harmful material use in the manufacturing processes.
2. Reusing the plastic and other useful components from discarded devices into new device manufacturing.
3. Actively recycling the discarded products for manufacturing new products.



5.0 CAPACITY PLANNING

The capacity planning activities of Apple have been discussed as follows:

5.1 Capacity Planning at Apple

The team engaged for capacity planning at Apple is a well valued and high impact team. From business allocation, capital equipment planning (Elshaer et al., 2022; Jassem Al-Ameri et al., 2019), labour planning (Alameri, Ameen, Khalifa, et al., 2019; Khalifa, 2019; Lei et al., 2021), production planning and the handling of multi-billion-dollar budgets, the performance of the team has remained exemplary (M. Almatrooshi et al., 2021; M. J. A. A. Almatrooshi et al., 2020; Alneadi et al., 2020) . For Apple, capacity planning is important like any other functional area of the business and the optimum level of operations can be identified with the help of capacity planning (Hossain et al., 2020; Rahmah et al., 2020). The offering of products in appropriate time frames is done and the current demand along with the operational costs are being done.

5.2 Design and Effective Capacity at Apple

Design capacity is the conceptual highest result of the system in available time within idealistic terms (B. A. F. H. Alharthi et al., 2020; Gharama et al., 2020b, 2020a). Design capacity could be simple and easy for most of the companies (Al-Shibami et al., 2019; Alkheyi et al., 2020; S. Alshamsi et al., 2020). Effective capacity is the magnitude that a company expects to fulfil its objectives within its recent operating restrictions (Alameri,

Ameen, Isaac, et al., 2019). Effective capacity has a low standard than design capacity because the designed facility for a rapid version of the product or a different product that merges in a recent product (Choi et al., 2018).

6.0 PROCESS SELECTION AND FACILITY LAYOUT

The process selection and the layout facilities have been discussed as follows:

6.1 Production Process at Apple

Although the production process details of Apple are kept secret but some of the information is available in this regard. The production process starts at the designing stage with zero financial constraints. After that a specific team takes over the product and it is kept as a secret from the other members of the company. The new product plan is also created by the same team. The entire production process is documented in this plan and after that supply chain and engineering manager are assigned. Their work is associated with the creation of the entire production chain in which the development and testing of product is done (Marín-Idárraga & Cuartas-Marin, 2019).

6.2 Type of Production Process Followed

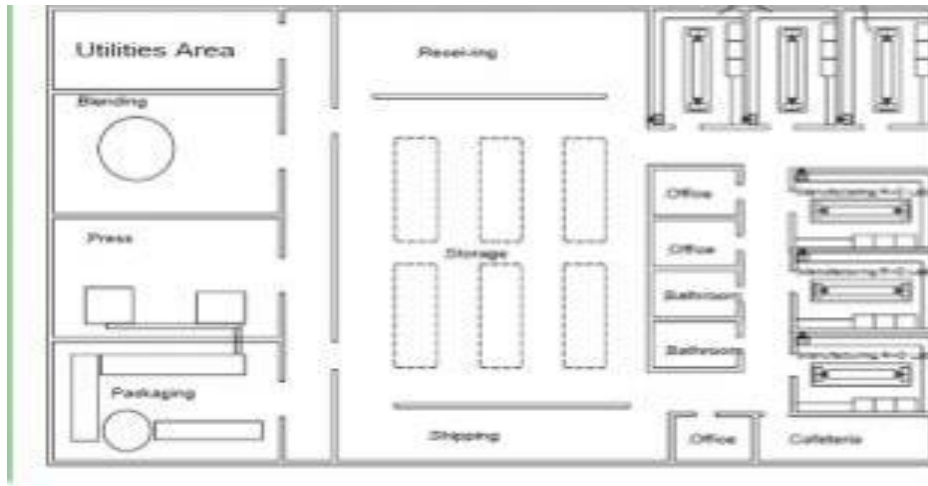
In terms of operations management, there are variety of production processes that are followed, and some types are (Slack et al., 2004):

- Unit/Job shop production.
- Batch production process.
- Flow or mass production.
- Continuous production.

The company follows the pattern of continuous production because at the same time, similar products are made using the techniques of continuous production mechanism (Lewis & Slack, 2014).

6.3 Company Layout

The overall operations of a company like Apple depends to a greater extent on the design and layout of that company. The maximization of the efficiencies and the effectiveness of the business process are dependent to a greater extent on the type of layout the company has. The smooth flow of materials, workforce and other resources within an organization is possible with the help of a structured layout. An illustration of the layout has been given as follows:



6.4 Process Type vs Facility Layout

Since the process used by the company is continuous process in which movement of raw materials is done on a continuous basis so it is expected that the facility layout should be organized accordingly in this regard. If the layout is not aligned with the production process followed, then the production process can get affected negatively in the given case.

6.5 Improvement of Process Layout

The tips of improving a process layout for increasing the productivity of manufactured good:

- Keep an eye at own recent workflow and take some time to perform an assessment carefully in order to recognize the areas of betterment.
- A company should consider the needs, views, concerns, and determines of its workers.
- Try to place all the tool and equipment on their place to save the time for being wasted.
- A company should consider the education of its employees in terms of the improvement of their training.
- Modern equipment and the computer handling machines are the expensive valuables of a company as well as the use of time consumption, but they are helpful for increasing the efficiency of workers and also save time.

7.0 LOCATION

The location related discussion has been done as follows:

7.1 Location of Manufacturing Operations of Apple

A company that is processing in the global environment, workers skill, cost, infrastructure, policies of government and the physical environment are some of the crucial factors (A. H. Alghfeli et al., 2021; Khalifa, Trung, et al., 2021; Sudigdo & Khalifa, 2020; Widjaja et al., 2019, 2020). A selection of appropriate location can be helpful to access customers (Abdulla et al., 2019; B. A. F. H. Alharthi, Khalifa, Ameen, et al., 2019; Hossain et al., 2020; Khalifa, Binnawas, et al., 2021), capable working team, and modes of transportation

sufficiently. An accurate location of an organization makes its success possible in the environment of competition on the globe.

7.2 Factors of Location Selection

In order to run a company successfully, its location matters a lot which depends on number of factors, few of them are mentioned below:

- The availability of required raw material as it minimize the cost of transportation.
- The nearest approach to market from the certain industry for the selling of products.
- Availability of the facilities related to the infrastructure such as electricity, water, transportation, banking system and communication.
- In terms of developing industries in backward areas government offers various facilities to industrialists such as concessions, low taxes, incentives, low-cost power supply etc.
- Manpower also based on the location of industry, if an industry is in backward area, it can hire labor with low wages but less skill and if it is in established location, it could have skilled and talented staff as well.

7.3 Additional Locations for Company

Apple has currently its main production locations in China, Malaysia, Thailand, India, and South Korea in this regard. The extension can be given to the manufacturing locations of the company given the fact that company is looking for the opportunities of exploiting cheap labour and raw materials in a given case. While looking for additional places to establish factories, it should be considered that they are able to align with the supply chain network of the company. The company locations in UAE are listed as follows:

1. Abu Dhabi, Al Maryah Island Abu Dhabi.
2. Abu Dhabi, Yas Mall Abu Dhabi.
3. Dubai, Dubai Mall Downtown, Dubai.
4. Dubai, Mall of the Emirates Al Barsha Dubai.

8.0 WORK DESIGN AND MEASUREMENT

The discussion regarding the work design and measurement has been given as follows:

8.1 Work Design at Apple

Apple by the definition of work design uses the functional organizational structure. The company has been specialized as per the area of expertise rather than the individual products. Thus, the function can describe as functional and hierarchal (M. N. A. N. Alharthi, Khalifa, Abuelhassan, et al., 2019; Alkathiri, Gamal S.A. Khalifa, et al., 2019; Alsaadi, Khalifa, et al., 2019). To make the company an innovative firm, Apple focuses on the investments made on human resources and encourages employees in participative decision-making (Al-Ali et al., 2019; Alkathiri, Abuelhassan, et al., 2019; Alkhateri et al., 2019; Falasi et al., 2019). This is how the company has been able to hire and retain the talent.

8.2 Specialization at Workplace and Merits & Demerits

The main benefits of the workplace specialization are as follows:

1. The skillset of the employees can be defined in this regard.
2. The upward growth of the employees is possible.
3. The product quality will improve in this regard.
4. The employee trust their work and they are proud of it.
5. Higher revenue can be generated by company having specialized workforce.

The main demerits of the work specialization are:

1. The specialized skill can become outdated.
2. One can only have one particular skill at hand.
3. The employee cannot do multitasking and get bored.
4. The overall sight of work can be lost by the employee.
5. There are few job improvements when it comes to work specialization.

8.3 Techniques for Improving Employee Motivation

If a company wants to increase the productivity of its plant, it has to adopt some techniques in order to motivate its employees (Alareefi et al., 2019; Alsaadi, Abuelhassan, et al., 2019; Badran & Khalifa, 2016; Morsy et al., 2016) such techniques are:

- Employees should be rewarded with incentives on achieving a certain goal or project.
- Give a confidence to the employees and realize them that their manager really trusts them and cannot complete any project without their contribution.
- A company should set smaller objectives too on the basis of a weak and on achieving them after a weak give reward to the employees in the form of half-day off or a tea party etc.
- A company should be open towards its employees and consider their suggestions and ideas as they are well trained in their fields and make them feel that they are included in the decision of relevant tasks.

8.4 Compensation System at Apple

Employees at Apple other than the salary receives an annual discount of 25% when they purchase an iPod, iPad, or a computer. Other benefits include health and wellness, parental leave, vacation and off time, commuting, gym credit and stock options (Alkhateri et al., 2018; Brekhaw et al., 2018; Hossain et al., 2019; Khalifa & Abou-Shouk, 2014; Mohamed et al., 2018, 2019; Nusari et al., 2018; Sudigdo et al., 2019). The merits of compensation system are (Xiao et al., 2018):

- It judges the performance of every individual on the basis on one-time performance and is beneficial for giving rewards to the employees who performed in one-time project.
- It clears the vision for the employees to assess where they stand regarding their performance according to the scales established by the company.

- This is helpful for differentiate between the high-performance employee and low performance employee, and afterwards give credits to the high-performance employee.

Demerits of compensation system are:

- In many companies, incentives and rewards are given on the basis of favoritism or on the basis of a single quality without any clear measurement.
- Organizations utilize its energy, time and resource on those tasks which are of less importance instead of increasing their efficiency.
- Sometimes, the criteria of giving compensation set as an ability of better communication skills. As supervisors can communicate in more better manners than any other employee so mostly supervisors are credited with this reward.

9.0 QUALITY MANAGEMENT

The quality management has been discussed as follows:

9.1 Four Determinants of Quality

As per the identified literature, the four determinants of quality (Abd-Elaziz et al., 2015; Abou-Shouk & Khalifa, 2017; Binnawas et al., 2019; Khalifa, 2015; Khalifa & Fawzy, 2017; Khalifa & Mewad, 2017; Myo et al., 2019; Trung & Khalifa, 2019) are:

1. Design – how well the product design has been made.
2. Conformation to the design – how well the product fits to the specified design.
3. Ease of use – how easily the product can used by the customers.
4. After sales service – how well the company is serving the customer after sales.

9.2 Inspection of Quality at Apple

Apple Inc. uses the system of TQM (Total Quality Management) to keep its processes and operations updated as per the modern needs of the time (Abdulla et al., 2020; Binnawas et al., 2020; Khalifa, 2020a; Khalifa & Hewedi, 2016; Mohamud et al., 2017; Qoura & Khalifa, 2016). The main principles of TQM are:

1. Customer focused strategy.
2. Full commitment towards employees.
3. A process-oriented approach.
4. Integrated system of work.
5. Systematic and strategic approach.
6. Continuous improvement.
7. Decision-making based on facts.
8. Communications.

9.3 Recommendations for Improvement of Quality

The following tips may be helpful for one in order to improve the quality:

- Do the analysis of related data and its results.
- Set certain objectives
- Make a team of balanced members.
- Consider the contribution of human as their knowledge, ability relevant to the design.
- Make a plan that could be achievable in improved manners.

- Be well-aware with the Plan-Do-Study-Act (PDSA).
- Communication with the team about the achievement of objective and progress.
- Create links with other organizations and do combine efforts.

10.0 PRODUCTION PLANNING AND INVENTORY MANAGEMENT

The discussion has been done as follows (B. A. F. H. Alharthi, Khalifa, & Bhaumick, 2019; M. N. A. N. Alharthi & Khalifa, 2019; Guo et al., 2020):

10.1 Production Planning at Apple

The production strategies at Apple identifies that the efficient use of production planning has been done by the company to ensure that the overall organizational efficiency is increased. The integration of the other departments has made it possible to have a shared vision and goal to improve the production planning. The product design making, testing and review helps to improve the production planning at the company.

10.2 Types of Inventories at Apple

Keeping in consideration the iPhone product in mind, the company has three kinds of inventories including:

1. Raw materials.
2. Work in process.
3. Finished goods.

10.3 Analysis of Calculation Results

From the calculation it can be seen that the company should order 632 units as the most economic quantity in this regard and the ordering length is 0.0062 years. The company can determine the most economic number of units that it can order during an year (Slack & Brandon-Jones, 2021).

11.0 CONCLUSIONS AND RECOMMENDATIONS

The main conclusion and recommendations have been given as follows:

11.1 Apple in Future

The company is accelerating at an unprecedented rate and that is why it has the title of the most reputable company of the world. In the future, if the pace of innovation and quality driven strategy is kept continued, then the company can expect increase in its worth, market share, profitability, and brand reputation.

11.2 Major Findings

The major findings of the report are listed as follows:

- The company has been doing well in the smartphone sector, but more attention is needed in the growth of other sectors such as Apple Pay and Apple Card.
- The company requires improvement in supply chain system so that disruptions made by the pandemic can be tackled.

- The company also have an adequate layout and production process system.
- The compensation system of the company helps to attract and retain employees.

11.3 Recommendations

In terms of improving the performance of a company the following steps are considerable:

- Engage the team in a project in such manners that they would have deep concerns with their work.
- Communication is an important key for the improvement in performance. Lack of communication results in obstacles and hurdles in the productivity.
- Companies that follow their policies, structure and processes in accurate manners are more efficient and are also well-aware with the hurdles of productivity.
- The goals of businesses should be comprehensive and defined properly. Those who have excess of goals, at the end that could not be able to meet them anymore. Experts recommend that a company should prioritize three to five objectives at a time.

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