

Operations management assignment



Pressed-panels are welded together to create complete body shells. 3. Body Paint shop – Painting finished bodies several times in a clean air environment with emissions controlled to surpass all likely regulations. 4. Plastics injection and blow molding shop – Plastic components such as bumpers, fuel tanks, radiator grills and facial parts are injection-molded on site. 5. Casting shop - Aluminum engine components are produced in the state-of-the-art Casting plant. Engine parts and assembling them into a range of different models. . Final Assembly – Bringing together all the components to make finished cars. 7. Offices – Although the plant is made up primarily of manufacturing areas, there is also a large office complex, housing supporting functions including: Personnel, Community Relations, and Production

Question (b): What are the main problems that managers face with operations at the Ionians Company?

A. Demand Uncertainty and Fluctuations b. Production issues c. Capacity planning problems d. Coordination issues

And how have the managers addressed them? . Varying hours worked (idle time); halting production I. E. No longer continuous and line speed reduction They may also have considered: varying the size of the workforce (laying off/ redundancy), using part time staff, sub contracting, carrying inventory

When people are idle due to production adjustments, Ionians used the time to train employees. B. Level capacity plan – an approach to medium-term capacity management that attempts to keep output from an operation or its capacity, constant, irrespective of demand. N approach to medium-term capacity management that attempts to adjust output and/or capacity to reflect fluctuations in demand management – an approach to medium-term capacity management that attempts to change or influence demand to fit available capacity. C.

Facilities decisions (long term/ strategic) – facilities and processes, physical

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capacity; NECK lies heavily on Information Technology to function.

Computer-controlled machinery, particularly in the Body Shop, is vital to production.

Aggregate planning (medium term) – work force and production levels; staff at NICK use a number of methods to operations management assignment By Mary. VGA ensure productivity remains high. Three of the main ones are Kamikaze, Just in Time and Job Rotation. Scheduling – assignment of specific tasks, activities or Jobs. Question (c): Discuss the operation strategies adopted by Ionians. A. Product Strategy and integrated product development – Effective product strategy requires selecting, designing and defining a product and then transitioning that product to production.

Only with this strategy is carried out effectively can this production function contribute its maximum to the organization. The operations manager must build a product develop system that has the ability to conceive, design and produce products that will yield the competitive advantage for the firm.

Product decision, therefore are fundamental to an organization's strategy and have major implication throughout the operations function. For instance, Niacin's diesel engines are a good example of the strong role product designs plays. B.

Process Strategy – According to Slack (2002) a major decision for the operations managers is finding the best way to produce. A process or transformation strategy is to find a way to produce goods and services that meet customer's needs and product specifications within the cost and any other managerial constraints. For Ionians, car assembly is a complex

operation with many components requiring skilled assembly. At NECK the production flow draws on three main production shops, as well as support areas. The three main shops are body assembly, painting and final assembly.

And the Supporting manufacturing areas are press shop – produces panels for the vehicles, plastics shop – makes bumpers (fenders) on site, castings shop – makes engine parts e. G. Cylinder heads, engine shop – assembles engines, installs oil, coolant fuel and axle plant – produces axles that are joined to engines in final assembly. Moreover, the decisions about a particular process require decisions about equipment and technology. The selection of equipment for a particular type of process can also provide competitive advantage.

Niacin's Cumberland plant for instance, is technically highly advanced. It uses pesticides robotics and computer integrated manufacturing techniques to create a carefully monitored production process that reduces errors to an absolute minimum. C. Capacity Planning Decisions – Facilities decisions (long term/ strategic) – facilities and processes, physical capacity; NECK relies heavily on Information Technology to function. Computer-controlled machinery, particularly in the Body Shop, are vital to production.

Aggregate planning (medium term) – work force and production levels; staff at NECK use a number of methods to ensure productivity remains high.

Three of the main ones are Kamikaze, Just in Time and Job Rotation.

Scheduling – assignment of specific tasks, activities or Jobs d. Facilities

Location Strategies- One of the most important strategic decisions made by companies such as Ionians is where to locate its operations because location

greatly affects both fixed and variable cost. For instance, depending on the product and the type of production or service taking place, transformation cost might be too high.

Another cost that might as well affect the location is taxes, wages, raw material cost and rent. When the company is evaluating the different alternatives, it must keep into account factors such as, labor productivity, foreign exchange, culture, government policies, and proximity to markets, suppliers and competitors. Lets to evaluate why did NECK decide to locate in Cumberland: For its I-J factory, Ionians chose Cumberland. Sundress's attractions included firstly, skilled labor force; manufacturing has a long tradition in the area.

A decline in other local manufacturing meant that skilled labor was readily available. Second, communications. Cumberland has good road and rail links to all major I-J areas. This makes it relatively easy to bring in supplies from separate I-J component and sub-assembly suppliers, and also to distribute completed vehicles. Finally, government support. The government provided financial and other incentives to manufacturers who set up in an area where employment opportunities had reduced sharply and new jobs were needed.

E.

Facilities Layout and Material Handling Strategy – Lean Manufacturing is all about adding value and avoiding waste thus NECK adopted Facility planning and material handling strategy (land, buildings, equipment, furnishings) to provide the physical capability to add value. Layout is an integral part of a Lean Manufacturing Strategy. Meaningful re- structuring requires

corresponding physical changes in the layout. F. Group Technology- Group Technology is considered a theory of management based on the principle that “ similar things should be done similarly”.

In our context, “ things” include product design, process planning, fabrication, assembly, and production control. However, in a more general sense Group technology may be applied to all activities, including administrative functions. The principle of group technology is to divide the manufacturing facility into small groups or cells of machines as done by NECK. G. Flexible manufacturing system- NECK has established Functions and processes for identifying and planning for demand, materials, product production and release in which there is some flexibility in how the system reacts to changes.

Flexible manufacturing systems generally have two categories; machine flexibility which is the ability to create different product types or change the order in how processes are operated; and routing flexibility; which is the ability of more than one machine to perform the same process or adjust for changes in capacity or volume. H. Assembly line balancing – NECK assigns each task to a work station within an assembly line in order to meet the required production rate and to achieve a minimum amount of idle time, increased efficiency, productivity and profits and a decrease in costs. . Line of Balance (LOB)- A production strategy that involves setting an intended rate of production for required materials to be fabricated within a particular time frame. In addition, effective line balancing requires assuring that every line segment’s production quota can be met within the time frame using the available production capacity. NECK uses this approach in ensuring high

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productivity and high quality products. Question (d): Outline and explain the new operation management concepts adopted in the case.

Staff at NECK uses a number of methods to ensure productivity remains high. Three of the main ones are Kamikaze, Just in Time and Job Rotation. 1 . Kamikaze- Is a Japanese word meaning ‘ Continuous Improvement’? NECK encourages all of its workforce to seek out areas in which improvements in their working environment, no matter how small, can be made. For example, a line-worker may have to bend down to pick a part out of a box as each vehicle goes past. This could have health and safety implications, as well as wasting time.

Kamikaze teams would then investigate, and possibly introduce a method in which the box is stored at an optimum height, within easy reach of the line-worker. Kamikaze teams are based in every department. The emphasis is on small, manageable improvements, although large Kamikaze projects have been undertaken, e. G. Platforms that follow the vehicle down the line to prevent workers from having to walk alongside it while working. 2. Just in Time (JIT) -The JIT philosophy, encourages the use of the minimum amount of resources (e. G. Space, time, material, workers) necessary to add value to a product.

NECK uses this management technique throughout the factory and beyond. Synchronous With a Just-in-time approach, specific vehicles and their components are produced Just-in-time to meet the demand for them. Sub-assemblies move into the final assembly plant Just as final assemblers are ready to work on them, components arrive Just in time to be installed, and so

on. In this way, the amount of cash tied up in stocks and in work-in-progress is kept to a minimum, as is the amount of space devoted to costly warehousing rather than to revenue-generating production.

Niacin's Just-in-time process depends not on human frailty but on machine precision. Every vehicle is monitored automatically throughout each stage of production. 3. Job rotation-To keep the workforce flexible, NECK operates a policy of '1 man 3 Jobs, 3 men 1 Job'. In other words, a worker should be competent in at least three different Jobs, and at least three people should be capable of doing each job. This principle ensures that each Job can be covered in the case of absence. It also means that Jobs can be regularly rotated to prevent a worker from becoming bored in a particular role. .

Learning Curves / Training- In accordance with its Investors in People responsibilities, NECK has a strong Training department and offers a wide range of on and off the Job training. Technical on-the-Job training is available to all staff, and most of the courses are given on-site by qualified trainers. People-development courses (e. G. Presentation skills) are also provided. NECK spends more per head on staff-development. NECK has a Continuous Development Programmer (CDC) whereby staffs are given personal and professional objectives every year, and are appraised against the objects.

This appraisal is linked to pay increases. This is also an opportunity for staff to identify where further training may be appropriate. 5. Value analysis and Value Engineering – Value engineering (EVE) is a systematic method to improve the “ value” of goods or products and services by using an examination of function. Ionians Motor I-J Ltd through this process has optimized projects, processes and product development in significant ways.
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Through Value Engineering, NECK regularly decrease costs, increase profits, improve quality and performance and enhance customer satisfaction. 6.

Total Quality management- In practical terms TTS involves identifying customers and their requirements, establishing and using objectives (targets) for all areas of activity, basing decisions on searched hard facts rather than on hunches, identifying and eliminating the root causes of problems and educating and training employees (the manager). Ionians knows that success comes from the quality of management as well as of the product and that the company must act more globally. Addressing this is Ionians Management Way, intended to provide innovative thinking and faster decision-making abilities for the company. Annual report 2002). Total Quality Management (TTS) is a key feature of Niacin's way of working. TTS involves making customer satisfaction top priority. Given this goal, everything the organization and its people do is focused on creating high quality. To achieve this, Ionians has to understand customer requirements, consider the processes involved in providing quality, not just the end result, prioritize and standardize tasks to deliver quality and educate all employees to work in this way. 7.

Statistical Quality Control – Incredible efficiency at NECK in a global production landscape means that our I-J plant continues to receive major investment to manufacture class-leading product. All the management and employees at NECK have continually demonstrated a 'can do' culture that defeats economic headwinds. The plant is recognized as the most efficient and effective production location in Europe. The culture and energy impress

everyone who visits. NECK efforts in the medium term will now be focused on further aggressive inventory and lead time reduction.

In order to successfully achieve this we will work with suppliers to reduce order lead times, simultaneously addressing logistic improvements to ensure overall cost reduction on a case by case basis. It is recognized that different solutions will be required depending on both supplier location and parts characteristics. Making cars in high volume is a material logistics exercise and the success of NECK is dependent upon the success of this strategy.