



COVER PAGE AND DECLARATION

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Table of Contents

Introduction:	3
1. Operational Industrial Streamline Procedural Guide	4
A) The suggestion should incorporate more economical production procedures:	5
B) A detailed strategy to reduce flaws throughout the production process:	7
C) The creation of a greener process using tools from the twenty-first century	8
2. Create a Big Green Tractor operations manual for their pollution that is socially resp	
A) Commercial requirements for disposing of chemical waste:	10
B) Environmentally friendly manufacturing method substitute:	11
Conclusion:	12
References:	13

Introduction:

Operations management is the most crucial internal department of the business and cannot be neglected, regardless of the sort of activity or task that the organisation performs. As a production, implementation, and control tool used by the company to choose the direction of the work to be done and the means by which it will be accomplished, the operations department's duties are entangled with those of all other departments. It is the primary motivator and foundation of all business action, therefore it plays a significant role in putting strategic company goals and orientations into practise. The written objectives and sketched plans must be translated into carefully considered, prepared, and carried out steps, which is the responsibility of the operations department. Additionally, he has responsibility for carrying out any action in accordance with the requirements for the company's performance through a series of precise processes.

The Operations Department's work is influenced by a number of factors, starting with the stage of choosing the best raw materials, whether the firm offers a product or a service. Up until the final picture of the product is achieved and its conformance to requirements is verified, workers are assessing the correctness of their quality, monitoring the many manufacturing processes. The Operations Department is also eager to give the senior management a thorough analysis of the market research and study findings that will determine whether a product or service will be successful. The main factor that enables the firm to satisfy the demands of its target consumers is the surrounding community and customer segments interested in using the company's services and goods. In collaboration with the other departments, it also plays a part in determining product pricing to strike a balance between the price of the good or service and the profit. Additionally, take this into account in order to concentrate on enhancing the service and obtaining outcomes that will please and win over clients. Along with the procedures for coming to an agreement, drawing up contracts, and signing them, as well as everything associated to those contracts, such as filing and putting together a thorough analysis of the tools used, the human resources required, the scope of the agreements needed, and the quantity of output needed.

Studying risks, addressing and decreasing errors, and devising suitable solutions to prevent these errors and deal with them in a way that leads to preventing losses are some of the responsibilities that the operations department is responsible for. Making sure that the idea of work and the implementation mechanism reach the employees and all experts in ways that are intelligible and apparent to everyone, as well as working on establishing work plans and alternative plans as necessary to guarantee that no errors are made, and to organise the methods of communication amongst everyone properly to get the greatest outcomes, and provide instructions for each step of implementation, review, and control. Reviewing the rules and the regulations that govern the workflow and efficient communication is one of the duties of senior management. Establishing solid ties with all the organisations the organisation engages with is another goal. Setting up procedures for handling infractions throughout operations all the way to the finished product, passing through the processes of control and adherence to quality standards at each step of manufacture, furthermore to arranging the procedures for dealing with it and guaranteeing the quality of the product or service offered before it is made available to clients. Reduced waste and wastage are among its responsibilities.

The selection of the supply's components that is most acceptable and ideal given a set of criteria, taking into consideration the storage and transportation requirements for each product, to meet the needs of each service or good offered up until it is delivered to the client or consumer in its finished form, satisfying his or her preferences.

Creating files containing all the data and information for each service or product offered to customers or consumers, starting with the steps taken to obtain the raw materials and materials required for their manufacture and the sources used to obtain them, up until the acquisition of the item in its finished form for the customer or consumer. Forecasting, selecting an acceptable design and form for execution, applying quality standards, putting the action plan into effect, and eventually delivering the good or service to the customer are all phases in the operations management process.

1. Operational Industrial Streamline Procedural Guide

The production procedures ought to be more economically sound, in my opinion. The industrial flow line's meaning and operation must thus be explained first before we can provide the solution. What is referred to as simplification is the capacity to keep up product quality while also decreasing waste and raising profitability.

It consists of three components:

A. **Waste reduction:** During the production process, it must be done from the moment raw materials are received until the final stage of delivery. To achieve improved waste reduction, it

is crucial to adhere to the steps in each cycle of the production process. Where and how to correctly accept and transfer applications down until departure are the main points of attention. It will be a terrific and effective first step in lowering the overall waste if the resources are accurately chosen for complete usage.

- B. **Quality improvement:** Customer happiness is a goal for each business, but it must be achieved by having high-quality items. In order to guarantee that a product satisfies the demands of the consumer, quality plays a role in every stage of production, beginning with the choice of raw materials and continuing through all phases of production until the product is obtained in its final form. In order to minimise time and material waste, it is crucial that control and inspection procedures be followed at every stage of the production process.
- C. The use of technology in manufacturing: In today's quick-paced enterprises and sectors, we discover the value of adopting current technologies. The selection of raw materials, their subsequent distribution to the appropriate department, the control and inspection methods used during the production processes, and finally the completed product all benefit greatly from the usage of ERP software. Additionally, the programme supports proper inventory management for both goods and raw materials. Additionally, the programme makes it possible to identify client wants precisely, aiding the business in satisfying them.

Time may be saved by implementing effective communication programmes that promote good communication across various work teams and departments.

A) The suggestion should incorporate more economical production procedures:

The green tractor business needs to work to raise production standards, cut waste, and boost earnings. The following points will be displayed as suitable improvements to the production process:

- <u>Follow Lean Manufacturing Techniques:</u> The business can adopt modern Lean Manufacturing technologies, which put the emphasis on lowering costs and waste while boosting production. Thus, the corporation has the chance to monitor the production and manufacturing process and save manufacturing costs.
- **Quality assessment:** As it is feasible to lower the cost of quality by lowering the cost of manufacturing, we may examine and assess the quality of the company's present goods. As the cost of quality can account for up to 30% of total sales, this will have a

big influence on improving profits. Before taking this action, the business must, however, do its homework, do thorough research, and work to provide high-quality, thoughtfully designed items that satisfy customers' expectations.

- <u>Measuring the total cost:</u> Here, the question of cost savings is addressed once total expenses have been determined. The driver cost method is the core idea here; the primary driver costs are covered in order to connect the dots between the goods and the consumers in order to understand how they interact with our offerings. Another technique is knowing how to figure out the direct and indirect expenses so that we can then figure out how much of an influence they have on overall costs, whether they do it directly or indirectly. Effective costing reduces wasteful spending and raises overall corporate profit through reduction of unneeded expenditures.
- <u>The Right System in the Right Place</u>: The most effective system for each department will be created with the aid of artificial intelligence and current technology. Precise systems also make it easier to detect and analyse expenses, which is essential for the achievement of success and the assurance of precise measurements.
- <u>Supply Chain Management:</u> We need as basic of a supply chain as we can manage in order to be easily traceable. Standard components can be used to do this, simplifying the flow and enabling the business to order the parts in advance that are required to satisfy its requirements. Future product rationalisation and improvement are also aided by it. The design team may choose the items that will benefit customers the greatest, and the business can provide those products at a price that will satisfy customers while keeping costs down. By streamlining all of the process's elements, including sourcing, planning, and delivery, to increase the effectiveness of the product's quality, this simplification makes sure that total costs are decreased.
- <u>Focus on profit</u>: One of the most common techniques used to increase overall profit is the process of concentrating primarily on the most profitable items. The completion of production line rationalisation is the first step in making the best choice of the most lucrative items. As a result, the business makes more money overall, and these practises are more economical.
- <u>FOH Manufacturing Cost Control</u>: Monitoring and control are used to reduce excess plant overhead costs. Because of the product control process and the ordering system, we are able to manufacture customised items while also effectively achieving this goal by making conventional products. The primary goal is to save costs without sacrificing product quality.

B) A detailed strategy to reduce flaws throughout the production process:

During the production process, the business may minimise flaws. Defects, according to our research, frequently manifest throughout the production process. In order to sustain the improvement of the market level and the overall sales effect of the organisation, management constantly works to decrease faults as much as feasible.

Defects can be addressed in a variety of methods, including:

- **Early stage strategy:** Prior to the production process, it aims to reduce faults.
- <u>Late stage strategy:</u> These departments engage with the production process and the research and development processes to lower flaws.

Early stage strategy:

- <u>Choice of Product Design</u>: Assuring that faults are minimised and prevented in the various phases of the production process demands paying attention to the most suitable design option.
- <u>Intelligent manufacturing</u>: Through the use of a computer and information technology modelling system, contemporary technologies are applied to enhance the production process and decrease faults.
- <u>Flexibility:</u> The introduction of various approaches as a useful tool in regulating the production process is ensured when the manufacturing process is flexible, which helps to eliminate faults.

Late stage strategy:

- <u>Inspection</u>: The production process is accurate and has few flaws thanks to frequent and regular inspections and changes.
- <u>Preventive measures:</u> It deals with any machinery and equipment that requires upkeep and repair as well as the elimination of broken or malfunctioning machinery. In order to guarantee the manufacturing process's entire success, it is important to make sure that each component is functioning properly.
- Measures and benchmarks for quality: Each member of the manufacturing team should be fully and clearly aware of the company's quality requirements in order to be able to

monitor the situation practically and strive to eliminate errors while still meeting customer expectations.

- Strength of communication: Since a good firm always has a strong internal connection, it is important to make sure that communication between teams inside the organisation as well as between team members is steady, robust, and occurs swiftly.

C) The creation of a greener process using tools from the twenty-first century.

The Green Jar Company must always apply the newest instruments that adhere to environmental standards in order to fulfil its social obligation and advance its environmental friendliness.

The following actions may be taken by Green Tractor Company to put this into practise:

- Order the right amount: To reduce any extra emission or harmful vapour, the materials needed will be more than enough for the production process.
- Artificial intelligence is used in: Artificial intelligence is utilised to uphold design correctness and assist in instilling the foundations of the production process in order to fulfil the company's aim of minimising overall waste and establishing a greener future.
- Electrical tractors: Since The Green Tractor Company is the industry leader, it is anticipated that when the electric tractor is released and produced, it will signal a significant advancement in the current day as it will help to enhance the environment by reducing poisonous emissions and exhaust.
- Using robots: Robots that are already charged can be used for warehouse management, reducing waste as a result.
- Advancing green technologies: The firm's engineers in charge of R&D must be guided and encouraged to support creative ideas that do this, which in turn accomplishes the reduction of total waste, in order for the company to prioritise making the company greener.
- 'Clean' energy: Reducing waste and optimising power consumption are two benefits of using clean, renewable energies like the sun and wind in manufacturing operations.

2. Create a Big Green Tractor operations manual for their pollution that is socially responsible:

The concept of corporate social responsibility first emerged in the 1980s and has since gained widespread recognition throughout the globe. It is now even more prevalent. The interest of society, people, and businesses in this obligation, together with the media's attention on it, demonstrate the significance of this problem. With the intention of giving back to the community where it operates, every business has a responsibility to do so. While some businesses choose to employ more sustainable and environmentally friendly resources to help protect the environment, others choose to donate cash that are frequently given to charity.

Environmental CSR, in which a lot of businesses concentrate their efforts on decreasing the adverse effects on the environment, is one of the most prevalent types of CSR, according to our research.

Some businesses in Britain are required by law to notice and report the emission of greenhouse gases, however there are some businesses that are exempt from this need yet are trying to solve the issue of carbon emissions reduction.

Despite the fact that at one point the negative impacts on the environment were seen to be an unavoidable need for the practise of industrial operations, excessive resource consumption and pollution are currently issues of societal concern on a worldwide scale.

Businesses that produce less trash and emit fewer greenhouse gases typically benefit more from environmental CSR. These businesses analyse their manufacturing methods to uncover unnecessary work, and they subsequently remove that work from their business strategy.

Ethical CSR: The primary goal of this duty is to guarantee that all parties who have an interest in the company—including both workers and clients—are treated fairly. Self-initiatives taken by businesses under the guise of "ethical responsibility" are actions that must be taken in the opinion that they are the proper course to follow. In these cases, the business considers how stakeholders' actions may affect them and works to have a more beneficial effect.

Companies' initial focus is on fulfilling their legal and financial obligations; but, once these obligations have been met, the corporation may begin to focus on its ethical obligations.

Aiming to improve employee treatment and ensuring that acceptable standards are upheld in workplaces, ethical CSR projects seek to improve worker conditions.

All supply chain tiers and all employees—even those who may not be employed by the firm directly—are taken into account by ethical CSR. For instance, we discover that CSR programmers are well-positioned to avoid the exploitation of small farmers by ensuring that they are treated fairly and receiving fair compensation for their commodities. The objective is to make sure that all parties involved receive the greatest possible deal, even if this can occasionally be challenging to achieve.

A) Commercial requirements for disposing of chemical waste:

Negligent management of chemical waste can have highly negative effects. Solid, liquid, and gaseous chemical waste are all categorised. Therefore, while getting rid of chemical waste, there are various rules that must be followed, including:

- Chemical waste determination: Knowing the nature of chemical waste and how to dispose of and handle it is critically necessary since chemical waste is harmful. In order to deal with and dispose of them, policies and procedures must be identified through the identification process.
- Setting aside a location for hazardous waste storage: Businesses and industries should designate a distinct place to handle chemical waste that is close to the regular garbage area and is under the control of workers who are qualified and well-trained to handle it. In order to prevent any potentially harmful circumstances, this is a crucial issue.
- Correct garbage storage: Depending on its kind and the kind of containers it is stored in, chemical waste is stored using a variety of techniques. To avoid negative reactions when they are disposed of, it is not advised to combine hazardous and non-hazardous trash. Leak-proof containers ought to be utilised for effluents. As a form of safety and security, containers should always be kept closed until they are used. To prevent confusion or error, it is also a good idea to clearly identify all packages with the intended usage.
- Selecting a partner for hazardous waste disposal: In order to facilitate the industrial process, businesses might select a partner with expertise in hazardous waste disposal and recycling activities.

B) Environmentally friendly manufacturing method substitute:

Given that everyone is now aware of how various manufacturing practises have a detrimental impact on the environment, manufacturers are now sufficiently and completely aware that becoming green is the new way to operate in the manufacturing industry. Thermal fluids are an alternative method for reaching the temperatures required for manufacturing without the use of water, and by doing so, we help to create a more sustainable future. Steam has been the main method of heat conduction in the industrial sector for more than 150 years. From a strategic perspective, it is crucial to make little but steady progress towards being green because it is always advised to start by putting into practise and gaining the fundamental actions before progressively incorporating more environmentally friendly options. The following are a few examples of these green applications:

- Water: Recycling practises and other sources, such desalination of sea and ocean water, are two of the primary factors in water conservation.
- Energy: Utilising renewable resources, green construction materials and components assist to energy conservation.
- Devices and services for the environment and pollution: An important step in the disposal of garbage is the recycling of waste for future reuse. Furthermore, as is common knowledge, pollution control services aim to lessen any dangerous waste. Engineering should be redesigned to work with green technologies.
- Recyclable waste: By recycling garbage, it is feasible to increase production efficiency and save costs. Recycling waste means that less trash will need to be disposed of or treated, which will result in less energy being consumed and less pollution, which will make the environment safer. Hazardous chemical waste may be recycled and transformed into environmentally friendly items.

Conclusion:

The Operations Department's work is influenced by a number of factors, starting with the stage of choosing the best raw materials, whether the firm offers a product or a service. Up until the final picture of the product is achieved and its conformance to requirements is verified, workers are assessing the correctness of their quality, monitoring the many manufacturing processes.

It is now challenging to forecast how the manufacturing sector will appear in the coming decades because both the industrial and manufacturing sectors are continually changing. Because of both the good changes brought about by the adoption of environmentally friendly alternatives and the quick changes it has undergone as a result of continually advancing technologies. To increase profits while working to reduce waste and use clean, more environmentally friendly alternatives, the Big Green Tractor must maintain support for its strategies and keep them up to date in order to produce high-quality products that satisfy its customers at the lowest possible cost.

As a result of operations management's urgent advancement from earlier eras and its use of contemporary statistics and theories that, in turn, depend in a useful way on practical projections from society, alongside operations management's efforts to prevent any losses throughout manufacturing and production processes based on data and tools currently available and with purposeful actions, beginning with choosing the sources of the materials utilised Considering the requirements and guidelines needed to satisfy the demands of the client and the industry, and aiming to strike a balance between profitability and expense while also controlling and reducing costs. To produce the finished product without affecting the environment, work to meet quality needs and standards before, during, and after the manufacturing process. To make the required changes in the future and fulfil the needs and satisfy the expectations of customers and consumers, a method of monitoring usage and after-sale operations is used in conjunction with working to gather opinion indicators.

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