COVER PAGE AND DECLARATION

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Introduction

Operations management can be defined as those organized processes through which all industrial processes in the organization are organized and planned that lead to the production of goods that the organization seeks to provide to the consumer, and this includes all design, implementation, production, and control processes on all sectors and sections related to the production process. In defining operations management, all efforts made by the workforce and management cadres in distributing energies and human and material resources flexibly for the organization to achieve its goals so that the goods and services that are produced by the organization are compatible with the requirements, standards, and quality required.

There are five basic elements that complete the operations management cycle in organizations, namely: human resources, machines, organizational plans, raw materials, and funds, and these elements work in an integrated manner with each other within clear procedures and paths of the production process in order to reach the final results that express the organization's activity, enabling it to enter the consumer market, and compete in it within quality standards, and various consumer requirements.[2] For the entire production process, and the various techniques that help the organization reach its products to the best possible quality, the production manager must provide the operations management environment with sufficient flexibility that makes all the elements involved in the production process able to adapt to different conditions, face the difficult situation the nature and level of productivity are controlled by many factors, among them two determinants are efficiency and effectiveness. every time). As for effectiveness, it is related to doing the right things at the specified time, i.e., it first determines whether these things and actions should be done or not, and then prioritizes their completion within the time available, to obtain the highest possible productivity. Therefore, these researchers value effectiveness more than efficiency because those who focus their efforts to achieve quality primarily focus on completing activities and works optimally, regardless of the time required for that, while effectiveness is concerned with results, that is, the extent of work and things that are produced according to necessity and priority. Without neglecting the importance of achieving the required qualities and getting out of the crises.

Operational industrial streamline procedural guide

A- Cost-efficient manufacturing processes: The company needs to apply some new procedure as follow:

1. Hiring Freelancers

Hiring freelancers is one of the most important cost-cutting methods for companies, as you will only pay the freelancers the cost of the projects, they carry out for you. Therefore, you will not incur the cost of a fixed salary, as is the case with employees. Even if the freelancer works with you permanently, you will pay them only the cost of the work, without any other costs such as insurance or paid vacation, which helps you to reduce costs within the company.

Besides this advantage, hiring freelancers within companies contributes to many other benefits, such as: getting a variety of options to carry out tasks, and enhancing the company's culture with people from different backgrounds. You can hire freelancers in various fields through a freelance site, the largest freelance platform in the Arab world.

2. Reduce operational costs

Operational costs represent the expenses that the company pays to operate the business daily, such as rent, maintenance of equipment and tools, monthly salaries, and other expenses depending on the nature of the company's business. Companies have to bear these costs permanently, which makes them resort to laying off some employees in order to reduce operational costs.

In the digital world, it is possible to reduce operational costs in various ways, without having to lay off employees. One of these ways is to manage the work completely remotely, which makes the company able to save onthe cost of establishing its headquarters and the expenses that are paid continuously after that.

Instead, the company builds a complete system for managing its business remotely, employing the right technology to run the business. For example, companies can use the Hub Ana tool to organize and manage work tasks and track employee productivity and workflow without any problem.

3. Outsourcing some basic tasks

Within every company, there are a set of basic tasks that need to be performed with high quality, so they hire people to carry out these tasks. Instead, you can rely on external sources to carry out these tasks, which ensures that you get quality implementation, while at the same time the cost is lower for you, especially with tasks that are not often repeated.

For example, if you resort to using a remote work system within your company, and are looking for employees with the right specifications to work with you from all over the world, you will definitely consider hiring someone responsible for attracting and hiring these employees. Alternatively, you can use an external service, such as a remote location corporate recruitment service.

First, you will ensure that you benefit from the expertise of the team responsible for this service, enabling you to obtain the expertise you are looking for for your company. Secondly, you will pay for the service only whenever you need it, that is, with each recruitment process that you want to carry out remotely, thus you will be able to reduce costs related to recruitment tasks within the company.

4. Rely on theflexible work system

Some startups prefer to run the business from their own headquarters, as it is not suitable for them to move to remote work. In this case, companies can rely on the flexible work system, as one of the ideas to reduce the costs of start-up projects, by reducing the operational costs of the headquarters.

A flexible work system makes it easy for employees to coordinate their work schedule to suit their personal lives, by working the hours that suit them. Companies benefit from this by using the principle of sharing tools between employees, where instead of buying equipment and equipping the workplace for everyone, everyone can share the space according to everyone's schedule.

5. Using digital products as a solution to carry out some tasks

Digital products are products that can be downloaded and used in digital forms, such as website templates, designs, and documents. Digital products are a good solution for performing some

tasks within the company, which helps to reduce costs significantly while ensuring the required quality.

For example, if you have a WordPress website, and you want to hire a specialized WordPress developer to develop a template for your website. Alternatively, you can purchase a ready-to-use WordPress theme. You can find many digital products suitable for your company to purchase through Bikalika Store.

6. Automate various tasks at work

Automation is a convenient way to reduce costs and increase profits at the same time. Through automation, it is possible to dispense with the presence of people to carry out certain tasks, which helps to reduce costs and to hire people only for the necessary tasks. In addition to the effectiveness of automation in carrying out tasks with high accuracy, and contributing to serving large numbers of people, which increases opportunities for growth and profit.

For example, instead of hiring someone to communicate with people via email manually, and sending content periodically to each new customer, which hinders the process of growth and expansion, marketing automation tools can send this content automatically, increasing the number of potential customers, increasing the chances of achieving asale.

B - through aplan to minimize defects throughout the manufacturing process.

One of the most famous ways to reduce defective goods is to follow the Lean Production method which structured program to improve production and manufacturing practices focused on increasing customer value and improving manufacturing processes by reducing cost and production time by reducing or even eliminating waste and waste. Lean Manufacturing principles stem from the management philosophy of the Japanese manufacturing industry and in particular from the Toyota Production System (TPS).

The Lean methodology focuses on eliminating seven types of waste/waste:

1- Transportation
2- Inventory
3- Unnecessary and unproductive movement of “equipment and personnel”
4- Waiting times

5- Overproduction and industrialization
6- Unnecessary processing steps
7- Defects / Rework

Lean manufacturing is a method and methodology for improvement, focused on reducing non-value-added activities and processes and waste in production processes. Practitioners of lean application believe that if non-value-added activities in a process are not reviewed, 95% of the activities of this process will be of value Non-added, and for the facility to be able to survive and be able to improve profits, it must look carefully at its operations and work to reduce non-value-added activities, and losses in its operations, manufacturing, and logistics.

If the facility does not take a serious look at the non-value-added activities and waste in its operations, this may add new burdens on the facility in increasing costs and financial burdens on the company, and the company will lose its ability to keep pace with developments in global markets and with competitors and raise the cost of the product and its selling price and the decrease in the ability of The company has to compete, which may be a major reason for the establishment to exit the competition cycle or from the market as a whole.

C - The use of 21st-century tools to create a greener process.

Fuel vehicles are one of the biggest sources of air pollution. Gaseous pollutants such as carbon monoxide and nitrogen oxides from vehicle exhaust cause real risks such as global warming and acid rain, in addition to harming human health and the environment. For this, in particular, switching to the use of environmentally friendly means of transportation such as electric vehicles is a viable and very important option to reduce the emission of hazardous gases from vehicle exhaust, and the same applies to diesel-powered tractors as they emit gases that are harmful to the thief and the environment and in large quantities when working on farms.

There is no doubt that the fuel will soon disappear from the world due to a large number of extracts and the tendency of countries to renewable, environmentally friendly sources, such as the production of engines that run on lithium batteries.

Diesel, however, is a mixture derived from petroleum, a natural but not renewable resource. For those who want to keep renewable energy flowing more, they can install solar panels in homes, then you will power your electric car in the garage.

In addition, electricity is cheaper than diesel. Whereas electric vehicles typically cost a third of the cost of operating a fuel-powered vehicle. Many electric vehicles also use regenerative braking to add the power the vehicle needs to run, and it's completely free of charge. To create a greener process, the Green tractor Factory should follow the following:

1- **Using renewable Materials**: Metals are essential and versatile and can be used in many ways. Metals can be used for industrial purposes such as making trucks, cars, airplanes, ships, and railways, and they can also be used to manufacture household items like cutlery, crockery, and even in packaging. The good thing about metal recycling is that it can be recycled. Rotate the metal over and over without changing its properties. The Green tractor company can use recyclable metals including aluminum and steel. Other metals for example silver, copper, brass, and gold are so valuable that they are rarely disposed of to be collected for recycling, so they do not create a waste disposal problem, and recycling used metal is cheaper than purchasing brand new raw materials.

2- Using Robots in manufacturing to reduce time and mistakes: Robots are an essential element in various industries, as they are considered an ideal technology in terms of accuracy, speed, and many other advantages that make it difficult to dispense with them at present. The reasons for using robots in various industries include the following:

- Robots work for long hours, All days of the week, it can be charged in a few hours.
- Robots are characterized by their ability to perform various, multiple, and complex functions.
- Robots perform jobs with a high degree of perfection and efficiency.
- Companies need robots to stay competitive with other companies.

Using robots for inspection and assembly

The inspection and assembly process requires a lot of human labor, so programmable robots are used to perform this task, as the robot is programmed to work on a specific pattern of products

The use of robots in filling molds: The main reason for using robots in filling molds is to improve productivity, in addition to ensuring safety. Putting the finished piece in a box

The use of robots in the treatment of certain processes Robots are used in car factories, specifically, the robot works in various welding processes, such as placing a welding machine on vehicles tires to assemble car parts, in addition to other operations, such as spray painting by using a tool Similar to a gun, which helps to paint a particular piece, along with polishing, etc.

socially responsible operational guide for the Big Green Tractor for their pollutants.

The evaluation of industrial companies with openness to global markets and technological progress is no longer measured by the extent to which the company achieves financial profits or a larger amount of production of goods and services, and many modern concepts have emerged that have contributed to making those organizations able to deal with the rapid changes in the economic, ethical, technological and competitive marketing aspects. .

Among the most prominent of these concepts was the social, environmental and ethical responsibility of those companies towards the society in which they are located and the safety and health of their producers. These companies have become playing a pivotal role in sustainable development processes with their continuous commitment to providing services and goods that achieve a better standard of living for citizens and contribute to the development of the environment to benefit from it at the community level. The environment to achieve economic development, and the business environment is made up of a group of overlapping and intertwined factors that affect business projects and are affected by them to different and varying degrees. practicality.

The concept of social responsibility towards the environment comes as the commitment of business organizations towards the society in which they operate by contributing to a wide range of social activities from fighting poverty and combating pollution, and that these organizations are only part of the social responsibility towards the external and internal environment of those organizations.

- T**he socially responsible operational guide for the Big Green Tractor for their pollutants**.

Big Green Company is responsible to the community and the environment by making it's products save and less pollution, there is four types of CSR - Corporate social responsibility:

1-Environmental Responsibility: Environmental responsibility refers to an organization's commitment to sustainability and environmentally friendly operations. Every year, more companies prioritize sustainable practices, pledging to consider their environmental impact at every stage of business.

This can mean considering a company's carbon footprint or greenhouse gas emissions, choosing sustainable resources by avoiding single-use plastics, and keeping environmental aspects at the heart of all operations.

However, this environmental responsibility can extend beyond the company's promise of sustainable development. If protecting the environment is part of your company's mission, you can also honor that by encouraging employees to take action in the name of that mission.

2- Ethical Social responsibilities: Ethical responsibilities refers to the company commitment to operate their business in ethical way and taking into account their customer rights when selling them the products, the Green tractor company should insure the quality of the tractors and supply the buyer with technical characteristics in a fair way.

3-Philanthropic corporate responsibility: Philanthropic refers to company donations to the local community from the net profits that the company makes every year, the donations is very important for the company image in front of the society. Of course the company will make sure to pay for the trust foundations only especially to the projects that service the environment cases like investing in new greener technology or supporting the local community goals like moving to electric vehicle and stop using the fossil oil.

4. Economic corporate responsibility: Corporate Social Responsibility means: open and transparent business practices based on ethical principles and respect for employees, society and the environment. This responsibility is designed to create sustainable value for society at large, as well as for shareholders.

The impact of corporate social responsibility:

1- **Employment:** It is one of the most important sources of economic development. Companies employ individuals directly by hiring permanent employees or employees under contracts.

2-Providing resources and purchases: Provision of resources from companies present in the local communities may thus lead to stimulating the economic development of the local community.

3- Financial investment. Companies investing money on a short or long-term basis brings many benefits to local communities.

4- Charity and investment in the local community: This generally includes directing cash and resources to activities that stimulate job creation and income generation in the community, such as training for employment, affordable housing, small business development and expansion, economic revitalization, investment in youth education or health promotion youth in the local community. Companies carry out these activities by donating to local community development organizations, partnering with non-profit agencies and issuing economic recovery programmes.

- **Industrial standards on disposal of chemical waste:**

1- Requirements for handling chemicals:

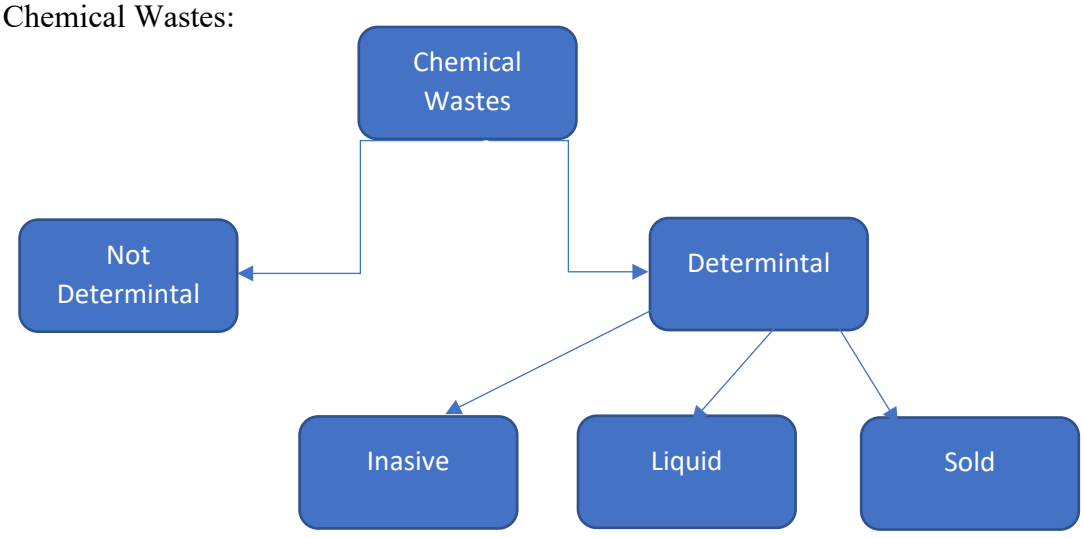
* Use laboratory equipment for its intended purpose only.

*Children are not allowed to enter laboratories where dangerous materials are stored or used dangerous activities.

* In the event that children are allowed to enter the laboratories for the purpose of learning, they must be under direct supervision of trained adults.

* There should be "board" advertisements in the laboratories explaining the necessary safety measure for laboratory work and personal protective equipment.

Types of Chemical Wastes:



Methods of disposal of chemical waste:

1- Burning or incineration using high temperature furnaces (> 911°C).
2- Throwing waste into sanitary landfills.
3- Physical and chemical treatment (evaporation - drying - calcination - neutralization - sedimentation) that results in compounds that are disposed of without harm to the environment.
4- Biological treatment resulting in easily disposed final compounds.
5- Recycling - such as recovery of solvent liquids, recycling and extraction of organic materials that do not use solvents, recovery of acids and bases, or recycling and extraction of inorganic materials, metals and mineral compounds.

Collection and sorting of chemical waste:

-Waste is collected in special containers so that different materials are not mixed with each other.

Only 91% of its capacity is filled (in order to avoid spillage during transportation).

-Close the container well and place labels on it to show what is inside.

- Hand over to the waste warehouse or to treatment companies for recycling or disposal

Of which.

Materials	type of container
Mineral acids	Plastic
Alkali	Plastic
Oxidizing Materials	Glass
Organic compounds	Glass

Steps before disposal of chemical waste:

The way to dispose of harmful waste varies according to its physical state and its chemical composition:

1- **Inorganic acids and acid solutions**: they are diluted with a large amount of water and neutralized with sodium bicarbonate, after which they are carefully poured into the drain gradually and not all at once.

2- Alkali metals and alkaline earths such as sodium, calcium and potassium:

It is disposed by mixing it with sodium hydrogen carbonate powder with the addition of di

Methylpropanol slowly left for at least 12 hours and then disposed of bank.

3. Alkaline solutions and organic bases: neutralize with dilute acetic acid, then dilute with water and act in the drainage basin.

4- Basic salts: mixed with sodium bisulfate, then dissolved with water and poured

down the drain.

5-Volatile Organic Compounds: They are allowed to volatilize in the degassing cabinet with

Ensure that there is no source of ignition.

6- Flammable liquids: They are disposed of in small quantities in the gas suction cabinet.

7- Oxidizing compounds and combustion aids: reduced by sodium or thio sulfide

Sodium sulfate, then add a small amount of water, stir, and when equalized, drain it

the drain.

8- Explosive and toxic materials: they must be disposed of in cooperation with the Civil Defense.

9- Dissolved heavy metals: precipitated in the form of sulfides or carbonates, filtered and dried

For easy disposal in the form of solid compounds.

`Alternatives to traditional manufacturing process:

First: a greener industry

That industry that works to meet human needs and social and economic development without harming the environment and natural resources, through the optimal investment of renewable

resources reducing waste, reuse and recycling to reduce the negative impact on health and the environment and improve energy efficiency, which leads to the preservation of natural resources as well Reduction of greenhouse gas emissions depending on the use of technologies compatible with the environment.

Second: Using more technology in the manufacturing process – Digitalization:

From the foregoing, the researcher concludes; That digitization is nothing but a process whereby data, in whatever form, is converted into a digital image for processing through a computer, by using appropriate digitization devices, especially scanners.

Digital transformation and integration of vertical and horizontal value chains; As the fourth industrial revolution works to digitally transform operations and integrate them vertically in the entire organization, starting from product development and procurement; Down to manufacturing processes, services and service delivery.

Third: Using Reports in production: The use of robots in industry is nothing new. Since the early 1960s, industrial robots have been used in welding, painting, and assembling parts to create products used in homes and businesses. Compared to humans, robots move faster and with greater precision, as they are increasingly used in manufacturing to work alongside Humans to do monotonous, difficult or dangerous parts of the production process.

Robots on a production or assembly line are ideal for tasks that require speed and precision. Additionally, they are useful in environments that require immaculate cleanliness such as pharmaceuticals or medical device assembly. Robots never get tired, sick, or suffer injuries, making them a valuable investment for companies in the group. of the manufacturing sectors. Robots have come a long way since their introduction to the industry in the 1960s, although they are mostly found in the automotive industry, the use of robots in a number of different industries is becoming more common.

Conclusion:

Technology includes a huge set of tools, and industrial technology shows us the role of industry in economic development, as technological progress is one of the necessary processes for economic development.

Providing efficiency, so technology contributes to the transfer of a large amount of products with high efficiency.

Technology saves a lot of time during the production of any commodity, or the provision of any service, and this undoubtedly contributes to the overall profits.

Technology works to increase the division of work in an orderly manner, and this works to specialize jobs within any business, which increases efficiency..

Industrial expansion, with advanced technology, total production is increased, profits are increased, and economic development results.

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