



**EUROPEAN
INTERNATIONAL
UNIVERSITY**



COVER PAGE AND DECLARATION

	Master of Business Administration (M.B.A.)
Specialization:	Sales & Marketing Management
Affiliated Center:	CEO
Module Code & Module Title:	MGT550 Managing Operations
Student's Full Name:	Khaled A.M. Awadallah
Student ID:	EIU2021101
Word Count:	4000
Date of Submission:	11/17/2023

I confirm that this assignment is my own work, is not copied from any other person's work (published/unpublished), and has not been previously submitted for assessment elsewhere.

E-SIGNATURE: **Khaled A.M. Awadallah**

DATE: **11/17/2023**

EIU Paris City Campus

Address: 59 Rue Lamarck, 75018 Paris, France | **Tel:** +33 144 857 317 | **Mobile/WhatsApp:** +33607591197 | **Email:** paris@eiu.ac

EIU Corporate Strategy & Operations Headquarter

Address: 12th Fl. Amarin Tower, 496-502 Ploenchit Rd., Bangkok 10330, Thailand | **Tel:** +66(2)256923 & +66(2)2569908 | **Mobile/WhatsApp:** +33607591197 | **Email:** info@eiu.ac

TABEL OF CONTENT

Introduction	#page.03
 Main Body	
Industrial Simplification Operational Procedural Guide -----	#page.05
Industrial simplification for more efficiency -----	#page.05
Cost effective manufacturing process -----	#page.06
Reducing defects during the manufacturing process -----	#page.09
Using 21st century tools to create a greener process -----	#page.11
Industrial standards for chemical waste disposal -----	#page.13
Green alternatives to the traditional manufacturing process -----	#page.15
Conclusion	#page.17
References	#page.19

MGT550: Managing Operations Module Assignment: Operational Procedures & Guide

Introduction to Managing Operations:

The current COVID-19 pandemic hasn't lessened the value of robots, which are intelligent machines. In medical institutions, robots can serve as the first line of defense because there is no risk of disease transmission from unwell people.

Robots may be taught to perform ultraviolet (UV) disinfection treatments, which further reduces the transmission of sickness through contaminated surfaces. This makes robots perfect for usage in healthcare environments such as isolation wards and hospitals. Robotic disinfection is recommended as an alternative to manual decontamination, which might endanger the health and safety of cleaning staff.

Numerous countries employed robot technology to monitor the mental and emotional health of hospitalized patients and people living in isolation, as well as to stop the COVID-19 virus from spreading. Beyond the previously listed advantages, here are a few more of the robots' numerous benefits during a crisis:

Robots are being utilized for the following duties in order to reduce the workload for medical staff during the COVID-19 pandemic: (1) delivery (drugs, medical supplies, and meals in hospital rooms). A three-wheeled robot developed by Asimov Robotics, an Indian firm based in the state of Kerala, may assist patients in isolation wards with all of these tasks.

Robots with cameras can be used to confirm whether or not individuals are observing social

distance in public. Public guidelines for preventive measures—especially in places that are vulnerable—should also be in place.

3. Decontaminating: As was already said, robots pose less of a risk when it comes to cleaning machinery and possibly dangerous regions. A Danish robotics firm has developed several disinfection robots that sterilize contaminated areas or equipment using UV light. The virus's DNA is destroyed by the UV radiation. The healthcare businesses in China, Europe, and America have received robots from UVD Robotics. They state that the robots can clean about ten rooms and operate for 2.5 hours on a single battery.

4. Emotional support: Numerous nations implemented lockdowns over the pandemic. When people spend a lot of time alone, their mental health deteriorates. Scientists have developed emotional intelligence-capable robots to aid the lonely in forming social connections. With the aid of these robots, physicians may remotely check on the health of their patients.

5-Medical procedures, including surgery: Because COVID-19 is contagious, more doctors were at risk during standard surgeries and procedures. Due to the virus's rapid transmission through the mouth and droplets, dentists, oncologists, and ENT surgeons [31] are leading the charge against the outbreak. Throughout the outbreak, almost every impacted nation postponed emergency measures in favor of more comprehensive ones, yet emergencies always demand first consideration.

Numerous medical fields were using robotic treatments to great efficacy even before the pandemic crisis. Even with PPEs, physical isolation remains the most effective means of stopping the spread of a virus. Therefore, in circumstances where personal contact through a patient's oral and nasal passages is necessary, such during a pandemic, no autonomous robot can be a safer choice.

The Main Body

Operational Procedure Guide for Industrial Simplification:

For More efficiency, industrial simplification is necessary.

Establishing priorities at work is a necessary part of the continuous process of optimizing workflow. Nevertheless, a lot of companies struggle to develop the operational and strategic plans required to meet this objective. Reducing internal procedures might potentially result in financial savings and increased productivity for businesses. Simplifying something makes it better.

Businesses are constantly looking for innovative ways to automate and simplify processes in order to save expenses. Variable costs are those that may be changed to maximize profit, whereas fixed costs are those that remain constant regardless of the amount of output produced in a certain amount of time.

The initial step in simplifying the processes is to draw up a sequence of stages for each action.

These steps are then assessed using the following criteria:

Some processes flow effortlessly into one another.

Alternatively, you may verify the reasoning by rearranging some of the stages.

- Alternatively, cut out part of the filler.

Finding the best ways to do a task involves a set of steps that make up the process of simplifying it.

- It's the most precise and efficient approach.
- employs the fewest resources possible
- Beneficial because it lowers expenses by standardizing procedures

Tasks that are similar or related can be merged to save time and reduce redundancy.

Certain processes can require reorganization after their necessity has been established in order to eliminate bottlenecks and preserve a constant flow of activity.

When an item is removed from a job because closer inspection shows it to be unnecessary.

Process for manufacturing at a low cost:

When a company's processes are completely automated and optimized, they may maximize their potential while saving time and lowering risk. For this reason, businesses have to think about automating and optimizing their working capital processes.

Efficiency gains may be substantial if other departments could easily access pertinent databases

through an information system. When data is utilized appropriately, operations management may be able to enhance planning and make better judgements. The challenges begin with the identification of pertinent efficiency and effectiveness measures. Next, there are data management challenges arising from the potential for large data sets and inconsistent outcomes that obstruct direct comparison.

Technological improvements have benefitted management by simplifying data access, manipulation, analysis, and organization.

Hundreds of projects are being managed and made simpler with the use of site intelligence. Smart maps, analytics, and dashboards may be used to identify inefficient business operations in real time across several locations. Errors are reduced, output is raised, and resources are preserved because of precise data.

Using state-of-the-art technology and automating as much of the business's collaboration and communication as possible may help minimize the time, effort, and financial resources needed to run a firm.

Using inventory management software will make stock analysis easier because the industrial tractor manufacturer has several internal workflows that all work towards a broader goal, such as order fulfilment, marketing promotion, and inventory control. You will save money on storing items if sorting those takes less time.

If these procedures are ineffective, a company might end up lagging behind its competitors due to higher expenses, longer processing times, and lower-quality output.

With the use of thorough analysis and monitoring, operations may function more efficiently, saving time and money without sacrificing quality.

Setting goals and engaging in strategic planning are essential to the long-term success of any business. Forecasting is very beneficial to businesses since it helps them plan for the worst. Predicting might take a while if you do not use specialized algorithms because you require complete and reliable previous data.

Process simplification is achieved by removing stages that provide no value to the application itself. Businesses might benefit from several advantages when they implement efficient operations.

It has been observed that inadequate interdepartmental collaboration may be the cause of the company's inefficient production processes. The ERP system's capacity to promote cross-departmental cooperation and communication for maximum efficiency and expansion benefits finance, sales, marketing, and human resources. Teams may improve internal communications'

effectiveness and clarity by exchanging aggregated data. The best usage for this concept is in HR management. Managing a profitable company and satisfying client demands is challenging without diligent staff members. Because they are the ones that keep the company running, employees are the focus of personnel management.

Tractor Company is mostly dependent on the money it receives from the sale of scrap metal to pay for unanticipated costs and finance new projects. Overproduction and garbage from manufacturers are unavoidable; the former is distributed to employees or sold by the PR department.

Reducing defects during the manufacturing process:

In addition to reducing production-related problems and maintaining consistent goods free of errors, omissions, or defects, this strategy also controls the quality process, which benefits both the company's reputation and quality control.

via the creation of novel concepts for industrial machinery and their implementation.

In order to reduce waste, the Lean Manufacturing technique emphasizes the need of resolving problems as they emerge. This culture, which emphasizes error avoidance, is in contrast to those that either place the blame for errors on employees or concentrate on fixing errors after they have been created. Provide counsel and ideas to lessen obstacles. Given that human beings are prone to forgetting things and making mistakes, as well as the possibility of robot error, it is imperative in this culture to create instruments, technologies, and work practices that aid in error prevention or early warning.

It's normal for humans to periodically become distracted, forget things, focus on the wrong things,

or merely interpret things incorrectly.

Consequently, the ideal strategy for lowering product defects is to identify the underlying cause of the issue, make errors either impossible or easily observable from the start, and then put fixes in place for the problems before they become defects.

According to Shigeo, mistakes made by humans are the cause of product problems, which might be avoided if the underlying causes were found and fixed. He contends that if "inadvertent errors on the part of the worker" are disregarded, they will ultimately show up in the outcome.

Errors and defects are directly related because mistakes have occurred, negative feedback will prevent errors from progressing to defects, corrective action was taken at the error level, the issue has been resolved, and Shingo exhibits flaws.

To eliminate production errors, the firm profiled in this article shrunk in size.

To ensure that errors do not degrade the quality of the final product, an efficient process design must be planned for and implemented, or protocols that notify employees of errors as they happen must be developed.

Put "smart" manufacturing techniques to use. It's the procedure of gathering information on a product at every turn of its lifespan via wireless sensors. The evaluation of material properties, temperature, and vibration rates is combined with consideration of supply chain logistics and sensor placement. Optical scanners employ a variety of sensors, of which modern cameras and lasers are only two examples.

It is advisable to install control systems that notify personnel of problems throughout production lines in order to lower the probability that an issue will go unnoticed.

Color coding and audio and visual alert systems are used to alert workers about potential errors.

It is recommended that the tractor company pay attention to and open the way to benefit from the

teamwork environment and raise the level of knowledge and practical experiences of the work team in order to enhance efforts of continuous improvement, since it is well known and must be noted that workers gain more knowledge and experience as a result of their integration into the production line. The course materials are examined and updated on a regular basis.

By putting up an inspection station at the end of the production line and following the normal processes of measuring, inspecting, testing, and assessing the product's features, a firm may be sure that its final product is free of flaws.

The following factors must be taken into account in order to achieve this objective and remove errors:

One of the most crucial elements in helping the manufacturer control and monitor documents in a way that maintains employee engagement and loyalty is the usage of electronic documents and systems in the workplace.

Analysis of documents and comments sent to management to track output. Furthermore, this greatly simplifies accurate process monitoring.

Documentation used at work: Thanks to digital and contemporary technology's support in the expert processing and preservation of all documents, manufacturing errors are reduced.

Using 21st century tools to create a greener process:

Since environmental groups and public awareness have grown in the twenty-first century, businesses have been more conscious of environmental concerns and have made improvements in this area as a result of realizing how crucial their contributions to the environment and society are to their long-term survival.

Obtain proof that the goods or services you provide are environmentally friendly and safe.

Long-term trends like diminishing water resources, toxic fuel emissions, increasing temperatures, and a growing human population are putting pressure on us to modify our way of life and industrial techniques to meet the demands of modern technology. Tens of thousands of workers no longer have to travel great distances in heavy traffic or visit actual office buildings thanks to remote virtual teams. Encouraging them might save operational costs, lower legal risks, and enhance the company's reputation. They can attain a competitive edge over less advanced rivals by transitioning to more environmentally friendly modes of transportation when demand increases. These are some of the green practices and environmental effect reduction measures that automakers are using. Tractor factories may reduce their adverse environmental consequences by implementing more environmentally-friendly product designs, production methods, and workflow concepts. By keeping an eye on the locations and amounts of electricity lost or wasted, businesses may focus their attention on the most pressing issues. This might result in lower operating expenses and less waste being generated. In an attempt to create natural chemicals for the tractor from unprocessed or environmentally friendly parts, he mimicked Ford Motor Company's usage of soybean oil in car enamel. Their car assembly plants employ nine different environmentally friendly materials, some of which are recycled from the food industry.

portable tractors with ease Lighter cars are also becoming more and more popular, which is good news for sustainable manufacturing. Major manufacturers have recently shown a propensity to lower the curb weight of their cars, which might have a big impact on fuel economy. Although steel and aluminum make up the great majority of cars on the road today, lightweight cars are expected to sell for much more money in the future.

Electric vehicle use on a large scale is a relatively new development. Over the next ten years, predictions indicate that electric vehicles will account for more than half of all passenger cars. The

main manufacturing tools in the tractor sector may be made of environmentally friendly materials, or the company may produce electric tractors, in an effort to reduce toxic emissions that are bad for the environment and agricultural regions.

Another helpful tactic is the well-known "reduce, reuse, and recycle" maxim. Factories may save a significant amount of money and energy by reducing waste and increasing reuse and recycling.

Waste minimization must be given top priority in industries that rely on primary resources. The growing need for freshly cut wood in the automobile industry is one factor contributing to deforestation; however, the majority of this wood is left as sawdust on the ground and is picked up for disposal. Increased efficiency in the utilization of natural resources and other sustainable solutions leads to less waste being created and improved environmental protection.

By planting trees on the company's unoccupied site, greenhouse gases and other pollutants emitted during tractor production might be lessened.

Industrial standards for chemical waste disposal

Numerous disasters that have lost lives and fortunes have been directly caused by improper disposal of industrial waste.

Hazardous waste must be disposed of properly in order to safeguard the environment and public health. It is unlawful to dispose of rubbish that might harm other people. Unchecked chemical waste pollution of our water systems is dangerous for marine life and human health.

As part of their long-term development plan, some countries have banned the burning of trash in order to address environmental challenges that are expected to occur as a result of their industrial and commercial activities. Many automakers follow stringent waste management guidelines that give recycling and material reuse first priority in an effort to lessen their adverse environmental consequences. Reducing trash is both a realistic and quick-win strategy for businesses aiming to reduce costs and protect the environment.

The three most typical types of waste generated in tractor and vehicle assembly factories are general rubbish (including packaging), metals (from sealing and automated procedures), and liquids. Avoiding is better when it comes to dealing with

Reducing rubbish output is the easiest way to lessen packaging waste. Reusable containers containing ingredients could be present.

As the industry is in a permanent and wonderful development of renewable resources and the use of alternatives, it is strongly advised that we reduce our reliance on toxic chemicals, recycle whenever possible (as this is the better option), and replace them with less hazardous materials made possible by modern technologies.

A waste disposal option is chemical treatment.

Trash that poses a chemical risk can be chemically processed to create less toxic compounds that can be retrieved from solution.

Another technique that employs chemistry to separate particles in solutions is chemical precipitation; to make this process intractable, the pollutant's solubility must be changed or the

solution's properties must be changed. Coagulants and flocculants are two tools that can help make this process more effective.

Scrap metal is one type of recyclable solid waste that is often viewed as a byproduct, a substitute raw material, or even a completed good. A major way to cut down on the amount of garbage dumped in landfills is to recycle and reuse automobiles. The Internet of Things may be affected by these activities. For example, recycled steel helps reduce the amount of power used by the steel sector. All of the raw materials that Big Green Tractor utilizes for production are included in this category.

Green alternatives to the traditional manufacturing process.

Numerous causes, such as the growing urgency of environmental concerns and the availability of more environmentally friendly and effective solutions and alternatives, can be ascribed to the increased popularity of environmentally friendly processes and practices. Reducing the amount of paper you use is one little step that might make a big difference.

The emergence of the digital age and the application of contemporary systems that archive data have made this feasible. These systems allow for faster, safer, and more feature-rich data collection and return, with the data always available and accessible through computers, mobile devices, smart watches, and other note-taking devices.

Make the conversion from paper to electronic versions of contracts, letters, and other paperwork to help save trees. It is also possible to switch from paper-based internal communication to digital methods like email or an enterprise resource planning (ERP) system.

This helps the environment and the pocketbook by lowering the demand for ink and paper.

Making the move to sustainable products is one of the best ways for a company to reduce its environmental impact. Sustainable goods may be recycled or utilized for any service or commodity that the factory or company needs. They should also be made without using any harmful materials and using eco-friendly manufacturing processes.

Businesses need to reduce their water usage and increase their recycling rates in order to safeguard the environment. It is also suggested that experts be consulted for these duties. Then, by utilizing less harmful forms of transportation, they contribute to environmental conservation.

Reducing energy use by switching to a different source is important since it affects company expenditures significantly. Therefore, it must be carefully considered. Utilizing state-of-the-art technologies like solar and wind power, which are perfectly suited to the generation of clean and sustainable energy and provide the company with free energy as a byproduct of its operations, the business can undergo a radical makeover by using the land where the factory is located to produce green energy. All the resources it needs to power and replace machinery used by businesses that damage the environment by burning fossil fuels and other harmful pollutants.

Conclusion

Operations management is an essential tool in today's business climate that may save partners time and effort. Without a clear methodology, employees won't be able to start and complete routine tasks like audits, cycle calculations, and the creation of actionable insights on time.

The firm can beat its competitors and produce more profitable and cutting-edge goods and services due to the simplified structure of the business process.

Additionally,

Reducing hazards

Less often should you perform the same action.

Internal correspondence: Make the vocabulary used more straightforward.

improved distribution of resources Boosts Productivity

It is important to keep systematic regularity.

Increasing Liability

Technological advancements, sensors, paperwork, and digital data were investigated for their potential to reduce manufacturing errors, boost productivity, generate income, and ensure long-term viability.

"Going green" has become a unique and differentiating corporate strategy in recent years by incentivizing companies to use more ecologically friendly practices. Businesses that adopt eco-friendly practices may satisfy customers and protect the planet's future at the same time, as has been demonstrated and widely accepted.

Since improper waste disposal and disregard for applicable standards can have severe consequences, including fines and business closure, we always advise our clients to work with a professional partner to handle chemical waste management in order to ensure legal compliance and the safety of the organization's location.

References

- 1- Magon, R. B., Thomé, A. M. T., Ferrer, A. L. C., & Scavarda, L. F. (2018). Sustainability and performance in operations management research. *Journal of cleaner production*, 190, 104-117.
- 2- Shingo, S., Dillon, A. P., & Bodek, N. (2019). *A Study of the Toyota Production System from an Industrial Engineering Viewpoint: From an Industrial Engineering Viewpoint*. Routledge.
- 3- Fettermann, D. C., Cavalcante, C. G. S., Almeida, T. D. D., & Tortorella, G. L. (2018). How does Industry
4- contribute to operations management?. *Journal of Industrial and Production Engineering*, 35(4), 255-268.
- 5- Brown, S., Bessant, J., & Jia, F. (2018). *Strategic operations management*. Routledge.
5 Shingo, S., & Dillon, A. P. (2018). *The sayings of Shigeo Shingo: Key strategies for plant improvement*. Routledge.
- 6- Zhan, Y., Tan, K. H., Ji, G., & Tseng, M. L. (2018). Sustainable Chinese manufacturing competitiveness in the 21st century: green and lean practices, pressure and performance. *International Journal of Computer Integrated Manufacturing*, 31(6), 523-536.

- 7- Linke, B., Huang, Y. C., & Dornfeld, D. (2012). Establishing greener products and manufacturing processes. *International Journal of Precision Engineering and Manufacturing*, 13(7), 1029-1036.
- 8- Hoejmose, S. U., & Adrien-Kirby, A. J. (2012). Socially and environmentally responsible procurement: A literature review and future research agenda of a managerial issue in the 21st century. *Journal of Purchasing and Supply Management*, 18(4), 232-242.
- 9- Nunes, B., & Bennett, D. (2010). Green operations initiatives in the automotive industry: An environmental reports analysis and benchmarking study. *Benchmarking: An International Journal*, 17(3), 396-420.
- 10- Jensen, J. P., & Remmen, A. (2017). Enabling circular economy through product stewardship. *Procedia Manufacturing*, 8, 377-384.
- 11- Ali, A. K., Wang, Y., & Alvarado, J. L. (2019). Facilitating industrial symbiosis to achieve circular economy using value-added by design: A case study in transforming the automobile industry sheet metal waste-flow into Voronoi facade systems. *Journal of cleaner production*, 234, 1033-1044.
- 12- Marimuthu, R., Shanthi, M., Aramvith, S., & Sivaranjani, S. (2021). Smart Waste Management Model for Effective Disposal of Waste Management through Technology. In *Challenges and Solutions for Sustainable Smart City Development* (pp. 213-229). Springer, Cham.

13- Artiola, J. F. (2019). Industrial waste and municipal solid waste treatment and disposal. In *Environmental and Pollution Science* (pp. 377-391). Academic Press.