

OBM3102

# FOUNDATION IN BUSINESS

SELF INSTRUCTIONAL  
MATERIALS

ACADEMIC YEAR 2023

**FACULTY OF BUSINESS, HUMANITIES &  
HOSPITALITY**

**BACHELOR OF COMMERCE  
(HONS) IN  
INTERNATIONAL BUSINESS**

# Topic 5 ▶ Operation

## LEARNING OUTCOMES

By the end of this topic, you will be able to:

1. Explain what is operation;
2. Explain 4 steps in effective transformation process in operations management;
3. Explain the 5Ps of operations management;
4. Explain at least 5 types of production businesses; and
5. Explain 4 types of plant layout.

## ▶ INTRODUCTION

Business operations refer to the activities and tasks that organizations use to produce goods and services. This includes planning, organizing, directing, coordinating and controlling the various aspects of production, such as procurement, manufacturing, distribution and marketing.

### 5.1 WHAT DOES OPERATION MEAN TODAY?

Operations is the work of managing the inner workings of your business so it runs as efficiently as possible. This can help streamline costs, allowing you to do more with less and reducing the need to secure small business loans. Whether you make products, sell products, or provide services, every small business owner has to oversee the design and management of behind-the-scenes work.

The specific definition of operations will depend on your industry and the stage your business is in. Sometimes, improving operations means thinking strategically about your systems and processes. Other times, it means being part of the on-the-ground work to bring every aspect of a project, from tiny to huge, to reality.

At a small business, you may not want to dedicate a single person to an operations role. Rather, both employees and owners should understand how the business works and how various processes impact day-to-day tasks. Here are some examples of operations in different industries—and how mastering your processes can contribute to success.

### **If You're a Retail Business**

As the owner of a retail business, your daily goal is to stock the items customers want at a price they're happy to pay.

For your operations, that means perfecting your inventory.

Take a look at records from last season. What is selling well, and what's sitting, unwanted, on the shelves? Can you negotiate lower prices or better terms from your vendors? Would your customers be willing to pay more for any of the items you sell?

While some of the answers will be obvious when you crunch the numbers and analyze the results, another operational update might be to implement a software program that can manage and optimize your inventory in real time so you can address these questions more quickly and more often.

### **If You're a Restaurant**

Food businesses have even more challenging inventory problems than retailers, since their product is perishable. At a restaurant, operations applies not just to foodstuffs, but also purchasing, preparation, and the costs of food, beverage, and labor. You'll also be concerned with customer service and customer experience at your restaurant.

As you look to streamline your operations, you might focus on signing contracts with important suppliers, improving the organization of your walk-in refrigerators to optimize food freshness, or training staff to exceed customer expectations. There's a big range here, so think through who should be in charge of leading the different aspects of operations, since it likely won't fall to one person.

### **If You're a Service Company**

Service companies can divide their operations into two key buckets: client-facing and business related.

Start by thinking through your client interactions: what could happen more quickly? Is the customer experiencing any unnecessary notifications?

Then, you'll want to consider how your current processes for communicating, collaborating, and managing projects affect the services you're offering. For example, if client projects are continually coming in over budget, one big operational concern would be the methods used to calculate your estimates at the beginning of a job.

### **If You Make Products**

The origin of the term "operations" comes from companies that made physical goods. Back when economies were industrializing, inventive businesses tried to add efficiencies wherever possible. That led entrepreneurs like Eli Whitney to pioneer the method known as parts-based assembly, so that cotton gins and other products could come to market more rapidly, cheaply, and consistently.

You don't have to reinvent the assembly line if your small business makes products, but you should take a good look at how you purchase, store, make, and ship your merchandise.

Consider your methods from a time standpoint: Is there a way to consolidate big orders so you can save time by working in bulk? Are there bottlenecks in your production that might have simple solutions? Could your transportation be improved upon? Could you negotiate better with your suppliers?

### **If You're a Digital Company**

Much of a digital company's value lies in your personnel. For you, operations has a lot to do with finding optimal ways of hiring, training, and mentoring your staff. Tools to help with employee retention and satisfaction are wrapped into this, too.

With digital products, collaboration is key; most sites, apps, or tools can't work properly without the help of multiple teams. That means that monitoring processes and updating software as needed to streamline collaboration is an operational necessity.

Another matter to pay attention to is outsourcing: what should your full-time employees spend their time on, and what types of tasks are best left to external experts?

Operations is key to running a business that's always getting better and better at what it does. By taking a look at how your business is run and asking yourself questions about existing processes, you'll be able to define and optimize what operations means for you and your business.



#### **SELF CHECK 5.1**

1. How does your company manage their business operation?

## 5.2 TRANSFORMATION PROCESS

What is a transformation process in operations management? Why is it important? How to go about it? These are common questions for people working in operations, and with this guide we try to give you a complete answer to all of those.

While this topic is meant to be read by operations manager and other operations staff, we decided to write it in a way that even outsiders of operations can understand what we are talking about. This is because a transformation process in operations management is an activity that can benefit any business and should be understood by anyone working in business.

### 5.2.1 What is a Transformation Process in Operations Management?

#### **What is a Transformation Process?**

Before describing a transformation process in operations management, let's start describing a transformation process in general. It is no secret that a transformation process is a process that transforms things.

A process is a set of actions. Unlike a project, that has a clear start and finish, a process is something more continuous and tends to be permanent, never ending. So, a transformation process is a set of actions to change things. Of course, since it is a set of intentional actions – things we do on purpose – it aims to change things for the better and make improvements.

Transformation processes are at the heart of business, they are the way a business can react to changes: changes in the marketplace, change in culture, changes in technology, and so on. It is how a business remains responsive and keeps a competitive edge.

## **What is Operations Management?**

You may be familiar with this, but since we are talking about a transformation process in operations management it is worth to have a quick refresher.

Operations Management is the management of the operations of a business. Operations are the activities of the business that gets things done, such as manufacturing products, designing new services, handling customer calls – the “core” activity of the business, which of course depends on the business itself. Operations Management is studying how these activities work, ensuring they perform according to specification and run efficiently.

Any business has some sort of operation, and as such it needs operations management. For a web agency creating websites, operations might be creating the websites. For a producer of breakfast cereals, operations will be putting cereals in boxes. In the airline industry, scheduling and running flights on time is operations. Operations is everywhere.

## **What is a Transformation Process in Operations Management?**

We can now join the two terms to explain what is a transformation process in operations management.

A transformation process in operations management is the act of changing some part of the operations to improve it in some way. For example, to make it more effective, faster, more reliable, less expensive, and so on. Of course, the actual goal will depend, but the idea that the operation is performing in some way, and you alter that through a transformation process.

A transformation process in operation management will typically involve some of the following components:

1. Changing physical characteristics of materials used in the operation, for example switching from a type of plastic to another.
2. Changing the location of materials or customers, for example having customers pay at the table instead of at the counter for a restaurant (for the process of collecting payment, which is operational in a restaurant).
3. Changing who owns materials or information, for example switching from a “buy” approach to a “lease” or rent approach, or even outsource part of the things your company traditionally performed internally.
4. Changes to the information, for example collecting more information as goods move through the warehouse by using RFIDs

So, the overall definition of a transformation process in operations is really that simple. It is changing something to try make things better. Typically, you will not change just one single item, but you will try to tweak several items, and repeat that in various iterations until you get everything right.

### **Why are Transformation Processes Important in Operations Management?**

As we know, operations are the way a business “get things done”. However, “getting things done” is not enough for a business to thrive. It needs to do the right things. The problem with that is that it is not often clear what the right things are, and to make things worse they tend to change over time.

So, you need to constantly adapt to changing customer needs, pressure from competitor in terms of lower prices and/or higher quality, different geographies (not all cultures want the same product in the same way), environmental disruption, and more. You may need to change some things to comply to a new law, or to become “greener” and more sustainable overall.

In other words, you need to be dynamic to stay in business over time. You need to adapt to things. Transformation processes are important for this, they transform your operations to shift and adapt to changing circumstances.

But understanding what a transformation process is might not be enough. How do you apply a transformation to your operations in a way that is effective?

## **5.2.2 Effective Transformation Process in Operations Management**

Okay, now we know the ins and outs of a transformation process in operations management. In this part of the guide, we will see how to actually put in place such process.

### **Start With Goals**

To make an effective transformation process in operations management, start by having clear what you aim to accomplish. Here, you will have to be quite specific, because “make things better” won’t cut it.

You need to be clear about the goals and how those goals can be measured: how will you know if you have succeeded? Don’t be shy of putting bold goals, as long as they are reasonable and can be measured. If the goals are clear, ensure they are relevant to the organization. Ask yourself: why this matters? If you can clearly articulate the reasons in a compelling way, it will be easier to bring more people on board with your vision.

Common goals for a transformation process in operations management are typically related to speed, flexibility, cost, and quality. The actual goal will vary from company to company, depending on the industry, the operation, and the competitive advantage they are trying to seek. Nonetheless, here are some examples goals you can use to take inspiration:



For a cereal producer putting cereals into boxes: reduce the variability of the amount of cereals for 3gr to 1gr (e.g. if the target weight is 300gr, shift from a range of 297-303gr to 299-301gr). (quality)

For a generic manufacturer: reduce the defective parts produced from 1 in 200 to 1 in 1000 (quality, and cost as you don't need to produce again the defective parts).

For a computer assembler: reduce the time to assemble a computer by 30 seconds

For a contact center: enable the contact center to handle calls from banking customers, in addition to the existing calls from insurance customers (flexibility, one contact center can do multiple things)

As you can see, goals can apply both to product and service operations.

### **Measure, Analyze, Find Why**

Now that you know your goals, you should try to understand why things are the way they are rather than the way you want them to be. You should start with this analysis before attempting to change anything, otherwise your transformation process may produce unexpected results.

In this stage you will need to involve many stakeholders that are involved in the operations. For example, let's take the first goal from the previous chapter: reducing the variability of the amount of cereals in a box. Here, you will need to understand why the current variability is 3gr rather than 1gr you want.

If you reduce it, you will save on average 2gr of cereals for each box. If you produce millions of boxes, this can be a significant improvement for your operations. So why is the variability so high now? You will need to talk to the people on the production line to understand if the machine is capable of producing 1gr variability. But it might not be a technical problem.

For example, the machine may be able to have a 1gr variability, but to do that it will need to operate at a slower pace, and this would mean less boxes of cereals produced per hours. Is the reduction in variability worth more than the production speed? It might be to a point: you need to evaluate pros and cons.

Suppose the reduction of speed is so prohibitive that we cannot change the variability as our process will slow down too much. Now, the evaluation is: should we change the machine with one that can be more precise while remaining fast? This will depend on the cost of replacing the machine and the expected saving.

Approach everything with curiosity, and remember that often things are happening in a given way for a reason. You will need to understand that before you attempt to change things.

### **Execute The Transformation Process**

At some point, you need to actually do the transformation process in operations management. This is done by changing machinery, creating new procedures and documents, training people, changing information systems, and the like.

### **Continuous Improvement**

Any transformation process in operations management is a continuous process. It never ends, as perfection is the goal. So, rather than settling for just one measurable goal, you should set a direction and set every time more and more challenging goals.

For example, if you were able to reduce the variability of your cereal amount from 3gr to 2gr, why not reducing it to 0.5gr. If you were able to do that, why not aiming at 0.2gr now? You can always push further and further with your improvement.

There are many approaches that advocate for this style of transformation processes. They are mainly related to quality, and are initiative like Total Quality Management (TQM) or Six Sigma. You don't need to know the details, because the idea is simple: always try to get better and never settle.

### 5.2.3 Transformation Process in Operations Management in Summary

To recap, a transformation process in operations management is a set of activities that aim to make the operations of a business better. Operations are the core activities of a business, like making bread for a bakery or providing electricity for a utility provider.

You need to continuously use transformation processes because competitors are getting better and customers are demanding more and more, transformation processes are your way to survive and thrive.



#### SELF CHECK 5.2

You have learnt the 4 steps in effective Transformation Process in Operations Management. In your opinion, which step is the most important?

## 5.3 5P'S OF OPERATION MANAGEMENT

Operations Management is a pivotal process in manufacturing firms. It refers to the process of planning, directing, implementing and monitoring all the production processes and operations.

In the field of production and manufacturing, these functions of operations management are carried out by an Operations Manager. The processes of operations management are impacted by five variables which are known as 5Ps of management.

These are as follows:

### 1. Product

The ultimate link between the production and marketing processes of a company is the product manufactured by it. A customer demands a product but at the same time, the organization must also be capable of producing it effectively.

In accordance with the product policy in an organization, an agreement is formed in accordance with the product's aspects and different functions. The aspects of products are:

- Quantity and Quality
- Reliability
- Performance
- Delivery Schedule
- Selling Price
- Aesthetics
- Ergonomics

In an organization, there are multitudes of internal and external factors affecting the business environment. These factors affect various aspects related to products such as legal constraints, needs of the market, culture, etc. Hence, they must be given equivalent importance.

## **2. Process**

There are many occasions when an established method/process may lead to effective production but fail to achieve other objectives. To face such issues effectively, the manager keeps an alternative to every method. He then chooses the best alternative which can accomplish the objectives. While discussing the process, some factors that need to be kept in mind are:

- Safety
- The capacity that is available
- The production types
- Cost of manufacturing
- Maintenance
- Plant Layout
- Labor skills

## **3. Plant**

One of the most important assets of a production firm is a manufacturing plant. An operational plant allows continuous production without bottlenecks. On the other hand, the non-operational plant may hamper the production process.

A plant must be effective so as to achieve the product, market, and organizational needs. Furthermore, financial constraints, building's design and layout, equipment maintenance, etc are different concerns about establishing a plant.

The plant layout must be effective enough to allow smooth movement of materials and manpower. Its layout must be able to deal with the arrangement of plants and machinery and is dependent upon the demand volume, production type, etc.

#### **4. People**

Manpower or people are the biggest assets for manufacturing firms. The production is highly affected by people/manpower and their hard work.

Every individual has a different skill set and attitude towards work. Hence, to achieve optimum results, it is mandatory to match an individual with a perfect job he is capable of doing. Furthermore, motivation, decent wages, good working environment, employee training, etc are different factors that need to be handled by a manager to ensure that people are working at their optimum productivity level.

#### **5. Programmes**

In a manufacturing unit, there should be a proper time schedule for the implementation and completion of various programmes. To accomplish different situations, different programmes are organized. These are related to:

- Storage
- Purchasing
- Transport
- Maintenance

## **5.4 TYPES OF PRODUCT PROCESS**

When a company creates products to sell to consumers, they typically use a strict production process. This involves following various steps, from the input stage of product creation to the output stage of selling to consumers. The right production process for each organization typically depends on the technology available, how many products the company needs to produce and organizational structure.

In this topic, we review what a production process is, the elements of choosing the right production process and the types of processes available.

### 5.4.1 What is a production process?

A production process is a method of using economic input or resources, like labor, capital equipment or land, to provide goods and services to consumers. The production process typically covers how to efficiently and productively manufacture products for sale to reach customers quickly without sacrificing the quality of the product. There are many different types of production processes businesses can follow, according to their manufacturing goals, production numbers and technology tools or software systems.

### 5.4.2 Elements of a production decision

An important part of being a manufacturing manager is making big-picture production decisions that impact the efficiency levels of the creation and sales of products. The key elements involved in making production decisions include:

#### **Amount to produce**

Review the order number of your products to determine your production method and creation process. If you realize you need to produce large bulks of the same product at once, you may follow a mass production method. You may need to practice a different and more intricate production process if you're manufacturing several different unique products at once.

#### **Whether to move forward with mass production**

There may be some products or materials that require closer design or creation to provide unique and personalized features or elements to the product that you may have promised to consumers. Because of this, consider whether mass production or manufacturing is the best option to pursue. Instead, you can strategize a non-automated process that takes longer for product designers to create but provides them with a hand-crafted, customized final product.

#### **Technology to use**

Selecting the right production process can often depend on the type of technology you have available. For instance, if you have a large bulk of the same product orders, you may not be able to follow a clear mass production structure if you don't have the proper technology to track, sort or

build these products accordingly. Think about the technology you have available and the approved budget you can use to buy the necessary systems and items to use the production process needed.

### **Input combinations to use**

Input combinations are the labor and capital methods that go into manufacturing a product. Before deciding how many products to produce and your method for building them, you must make sure the material costs and the payment of employees equal a fair enough amount. This ensures you're still earning enough revenue from the products to make a decent and financially stable profit, which helps the organization function properly.

## **5.4.3 Types of production**

The different types of production businesses can implement depending on their product and organizational needs include:

### **Mass production**

In mass production, employees continuously produce the same items. Team members are typically split up into different workstations for everyone to use at once. Each workstation typically represents one material or addition to a product. Once the product gets to the end of the line, it's fully complete and ready to deliver to the customer. As one part of the product is being worked on, another is operating as well, which makes the process more efficient and productive.

### **Craft production**

This is a non-automated process that's usually used on products that need personal care and attention in order to deliver a quality product to the consumer. Many companies use this type of production when customers order customized products that include certain unique colors, shapes, patterns or words on the design.

### **Batch production**

Organizations typically use batch productions when they need to produce several groups of items. When this occurs, employees work in subsections of each group to complete different sections of certain batches. It operates similarly to a mass production process, but instead of creating just one product, the organization builds several different products and splits them into various groups, also known as batches.

### **Job production**

When creating lower-demand products, most organizations follow a job production process. This involves building a single item all at once, rather than splitting into groups that work on different parts of the product.

Since customers typically order this product less often than others, employees may briefly move away from their position in the mass production process and complete the entire automated system of building this product at once before returning to other ongoing tasks. This process usually only applies to items that have significantly low demand or are unique finds for consumers.

### **Service production**

This process entails automating a certain service to customers. You can provide personalized services offered on machines that allow customers to press buttons to request and receive assistance. Another service production method is technical support. If customers experience issues with one of the company's technical products and need additional guidance on how to use them, they can quickly access resources and materials to answer their questions if the support team is currently unavailable.

### **Mass customization**

This type of process is a mass production line that creates products unique and customized according to consumers' needs. The customer may have the option to select certain customization options from a list of colors, shapes or patterns. When they select certain options, the mass customization process completes a unique and automated process for each individual item.

For example, many clothing and merchandising stores use this process to make clothing and accessory items according to customers' measurements or color preferences.



#### **SELF CHECK 5.3**

1. Which type of production is used in your company? Share your answer In Nilai Uni Connect.

In an industrial set up, sometime, the machines and equipments are arranged in one line depending upon the sequence of operations required for the product.

There are mainly four types of plant layout:

- (a) Product or line layout
- (b) Process or functional layout
- (c) Fixed position or location layout
- (d) Combined or group layout

#### **(a) Product or Line layout**

In an industrial set up, sometime, the machines and equipments are arranged in one line depending upon the sequence of operations required for the product. The raw materials and semi-finished materials move from one workstation to another sequentially without any backtracking or deviation.

Under this, machines are grouped in one sequence. Therefore materials are fed into the first machine and finished goods travel automatically from machine to machine, the output of one machine becoming input of the next, e.g. in a paper mill, bamboos are fed into the machine at one end and paper comes out at the other end.

The raw material moves very fast from one workstation to other stations with a minimum work in progress storage and material handling. The grouping of machines is done on following general principles.

#### **Advantages of Product layout**

1. Low cost of material handling, due to straight and short route and absence of backtracking
2. Smooth and continuous operations
3. Continuous flow of work
4. Lesser inventory and work in progress
5. Optimum use of floor space
6. Simple and effective inspection of work and simplified production control
7. Lower manufacturing cost per unit

#### **Disadvantages of Product layout**

1. Higher initial capital investment in special purpose machine (SPM)
2. High overhead charges
3. Breakdown of one machine will disturb the production process.



#### 4. Lesser flexibility of physical resources

Thus, these types of layouts are able to make better utilization of the equipment that is available, with greater flexibility in allocation of work to the equipment and also to the workers one should be very cautious about any imbalance caused in one section is not allowed to affect the working of the other sections.

#### **(b) Process or functional layout**

In this type of layout machines of a similar type are arranged together at one place.

For example, machines performing drilling operations are arranged in the drilling department, machines performing casting operations be grouped in the casting department. Therefore the machines are installed in the plants, according to various processes in the factory layout.

Hence, such layouts typically have drilling department, milling department, welding department, heating department and painting department etc. The process or functional layout is followed from historical period. It evolved from the handicraft method of production. The work has to be allocated to each department in such a way that no machines are chosen to do as many different job as possible i.e. the emphasis is on general purpose machine.

The work, which has to be done, is allocated to the machines according to loading schedules with the object of ensuring that each machine is fully loaded.

#### **Advantages of Process layout**

1. Lower initial capital investment is required
2. There is high degree of machine utilization, as a machine is not blocked for a single product
3. The overhead costs are relatively low
4. Breakdown of one machine does not disturb the production process
5. Supervision can be more effective and specialized.
6. Greater flexibility of resources

#### **Disadvantages of Process layout**

1. Material handling costs are high due to backtracking
2. More skilled labour is required resulting in higher cost
3. Work in progress inventory is high needing greater storage space
4. More frequent inspection is needed which results in costly supervision

Thus, the process layout or functional layout is suitable for factories / businesses which have job order production; that is involving non-repetitive processes and customer specifications and non-standardized products, e.g. tailoring, light and heavy engineering products, made to order furniture industries, jewelry etc.

### **(c) Fixed position or location layout**

Fixed position layout involves the movement of manpower and machines to the product which remains stationary. The movement of men and machines is advisable as the cost of moving them would be lesser. This type of layout is preferred where the size of the job is bulky and heavy. Example of such type of layout is locomotives, ships, boilers, generators, wagon building, aircraft manufacturing, etc.

#### **Advantages of Fixed position layout**

1. The investment on layout is very small.
2. The layout is flexible as change in job design and operation sequence can be easily incorporated.
3. Adjustments can be made to meet shortage of materials or absence of workers by changing the sequence of operations.

#### **Disadvantages of Fixed position layout**

1. As the production period being very long so the capital investment is very high.
2. Very large space is required for storage of material and equipment near the product.
3. As several operations are often carried out simultaneously so there is possibility of confusion and conflicts among different workgroups.

### **(d) Combined or group layout**

Certain manufacturing units may require all three processes namely intermittent process (job shops), the continuous process (mass production shops) and the representative process combined process [i.e. miscellaneous shops]. In most of industries, only a product layout or a process layout or a fixed location layout does not exist. Thus, in manufacturing concerns where several products are produced in repeated numbers with no likelihood of continuous production, combined layout is followed.

Generally, a combination of the product and process layout or other combination are found, in practice, e.g. for industries involving the fabrication of parts and assembly, fabrication tends to employ the process layout, while the assembly areas often employ the product layout.

In soap, manufacturing plant, the machinery manufacturing soap is arranged on the product line principle, but ancillary services such as heating, the manufacturing of glycerin, the power house, the water treatment plant etc. are arranged on a functional basis.

### Points to Ponder/Takeaways

- Business operations refer to the activities and tasks that organizations use to produce goods and services.
- There are 4 steps in effective transformation process in operations management.
- The processes of operations management are impacted by five variables which are known as 5Ps of management.
- There are at least 5 types of production businesses; and
- There are 4 types of plant layout.

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