Course of «Operations and audit quality» Master degree in «Fashion, art and food management» Parthenope University of Naples

PART ONE: directing the operation

#### **Operations management**

Rita Lamboglia, Full Professor, Ph.D. Department of Business and Economics- Parthenope University of Naples rita.lamboglia@uniparthenope.it

## A general model of operations management

**PART ONE: directing the operation** 

**PART TWO: designing the operation** 

**PART THREE: deliver** 

**PART FOUR: development** 

### PART ONE: Directing the operation

- 1. Operations management
- 2. Operations performance
- 3. Operations strategy
- 4. Managing product and service innovation
- 5. The structure and the scope of operations

### **Operations management- Key questions**

• What is operations management?

•Why is operations management important in ALL types of organization?

What is the input-transformation-output process?

•What is the process hierarchy?

• How do operations and process differ?

TODAY

### What is the input-transformation-output process?

Operations principle: all processes have inputs of transforming and transformed resources that they use to create products and services

ALL OPERATIONS CREATE AND DELIVER SERVICE AND PRODUCTS BY CHNAGING *INPUTS* INTO <u>OUPUTS</u>

ALL OPERATIONS ARE INPUT-TRANSFORMATION-OUTPUT PROCESSES



### Inputs to the processtransformed resources

**Operations principle**: transformed resource inputs to a process are materials, information or customer

One set of inputs to any operation's processes are **transformed** resources. They are usually a mixture of the following:

materials- operations which process materials could do so to transform their physical properties (shape or composition for example). Most manufacturing operations are like this. Other operations process materials to change their <u>location</u>. Some like retail operations, do so to change the <u>possession</u> of the materials;

information- operations which process information could do so to transform their informational properties (that is, the purpose of form of the information); accountants do this. Some changes the possession of the information: for example, market research companies sell information. Finally, some operations, such as telecommunication companies, change the location of the information;

customers- operations which process customers might change their physical properties in a similar way to materials processors: for example, hairdressers or cosmetic surgeons. Airlines, mass rapid transport systems and bus companies transform le location of their customers, while hospitals their physiological state.

#### Dominant transformed resource inputs of various operations

SOME OPERATIONS HAVE INPUTS OF MATERIALS AND INFORMATION AND CUSOTMERS, BUT USUALLY ONE OF THIS IS DOMINANT

#### PREDOMINANTLY PROCESSING INPUTS OF <u>MATERIALS</u>

- All manufacturing operations
- Mining companies
- Retail operations
- Warehouses
- Postal services
- Container shipping line
- Trucking companies

#### PREDOMINANTLY PROCESSING INPUTS OF INFORMATION

- Accountants
- Bank headquarters
- Market research companies
- Financial analyst
- News services
- University research units
- Telecoms companyies

#### PREDOMINANTLY PROCESSING INPUTS OF <u>CUSTOMERS</u>

- > Hairdressers
- ➢ Hotels
- > Hospitals
- Mass rapid transports
- > Theatres
- Theme parks
- > Dentists

### Inputs to the processtransforming resources

**Operations principle**: all processes have transforming resources of facilities (equipment, technology, etc.) and people

The other set of inputs to any operations process are **transforming resources**. There are the resources which act upon the transformed resources. There are two types which form the «building blocks» of all operations:

facilities – the buildings, equipment, plant and process technology of the operation;

staff- the people who operate, maintain, plan and manage the operation (Note we use the term «staff» to describe all the people in the operation, at any level).

The exact nature of both facilities and staff will differ between operations!

### Outputs from the process

- Operations create products and services. Products and services are different
- **Products** are usually tangible things
- Services are activities or processes
- A car or a newspaper or a restaurant meal is a product
- Service is the activity of the customer using or consuming that product

### **Operations and Processes**

- All **operations** consist of a collection of **processes** (altough these processes may be called «units» or «departments») interconnecting with each other to form a network
- Each process acts as a smaller version of the whole operation of which it forms a part, and transformeed resources flow in between them
- A process is an arrangement of resources and activities that transform inputs into outputs that satisfy (internal or external) customers needs. They are the «building blocks» of all operations and they form an «internal network» within the operation.
- Each process is, at the same time, an internal supplier and an internal customer for the other processes

## Some operations described in terms of their processes

OPERATION	SOME OF THE OPERATION'S PROCESSES
Airline	Passegere check-in assistance, baggage drop, security/seat check, board passengers, fly passengers and freight around the world, flight scheduling, in-flight passenger care, transfer assistance, etc.
Department store	Source merchandise, manage inventory, display products, give sales advice, sales, aftercare, complaint handling, delivery service, etc.
Police service	Crime prevention, crime detection, information gathering/collating, victim support, formally charging/ detaining suspects, managing custody suites, liaising with court/justice system, etc.
Ice cream manufacturer	Source raw materials, input quality checks, prepare ingredients, assemble products, pack products, fast freeze products, output quality checks, finished goods inventory, etc.

## How do operations and processes differ?

Operations principle: the way in which processes need to be managed is influenced by volume, variety, variation and visibility

Altough all operations processes are similar in that they all transform inputs, they do differ in a number of ways, four of which, known as **the four «Vs»**, are particularly important:

- 1. The **VOLUME** of their output
- 2. The **VARIETY** of their output
- 3. The **VARIATION** in the demand for their output
- 4. The **DEGREE** of visibility that the creation of their output has for customers

### The VOLUME dimension

•Processes involving high volumes of output have a high degree of repeatability; and since tasks are repeated frequently, in many cases it is convenient for staff to specialize in their tasks

- •This allows the "systematization" of activities through the coding of standard procedures and the drafting of instruction manuals on how each individual activity is performed
- •Furthermore, as the tasks are systematized and repetitive, the technology is specialized to ensure greater efficiency in the process
- •On the contrary, processes involving low volumes and less repetition cannot guarantee the same degree of specialization. Staff usually perform a wide range of tasks

### The VOLUME dimension- McDonald's example

- The epitome of high volume of hambuger production is McDonalds, which serves millions of hamburgers around the world every day
- Volume has important implications for the way McDonald's operations are organized
- The first thing you notice is the repeatability of the tasks people are doing and the systematization of the work, where standard procedures are set down specifying how each part of the job should be carried out
- Also, because tasks are systematized and rerpeated, it is worthwhile developing specialized fryers and ovens

### The VARIETY of their output

• The processes that generate a great variety of products and services must be able to guarantee a wide range of heterogeneous activities, with relatively frequent changes from one activity to another

- They also involve a high range of skills and technologies to be able to deal with all activities and be flexible to switch from one to the other
- A high variety can also imply a relatively wide range of inputs to the process, and the additional complexity of combining a high variety of customer requests with the right product or service
- High variety processes are more complex and more expensive than low variety processes

### The VARIATION in the demand for their output

•Processes are easier to manage when dealing with predictably constant demand. In this case the resources can be dimensioned on a level corresponding to the demand. Activities can be planned in advance

- When the demand is VARIABLE, the resources must be adjusted over time
- When the demand is UNPREDICTABLE, the process must provide for additional resources to have a "reserve of capacity" capable of absorbing an unexpected demand
- Because they do not require extra capacity and can be planned in advance, lowvariability processes generally involve lower costs than high-variability ones

### The VARIATION in the demand for their outputquestions?

Do you think the processes of fashion companies are characterized by high or low variability?

BOTH

- The production processes of high fashion clothing must cope with the general seasonality of the clothing market, in addition to the uncertainty linked to whether or not certain fashion proposals
- On the contrary ... the processes that produce leather goods and linen show less fluctuations in demand, and are less affected by unexpected trends

## The DEGREE of visibility that the creation of their output has for cusotmers

• Indicates how much of the processes is "experienced" directly by customers, or how much of the process is "made visible" to customers

• Since the relationship with the customer must be managed, the staff that takes care of the high visibility processes must have skills in relation to the customer, which positively influence the perception regarding the performance of the process

• For all of these reasons, high visibility processes tend to have higher costs than low visibility ones

### The DEGREE of visibility- examples

- 1. <u>Distribution courier processes provide online 'traceability' services to enable</u> customers to know where their packages are at any time. Low visibility processes do this over the phone
- 2. The processes of <u>an airport</u> are both low and high visibility.
- For example passport control, security are processes visible to the customer. Their staff work in highly visible front-office environments
- Other processes carried out at the airport have relatively limited, if any, visibility for the customer. For example: handling of baggage, loading, boarding meals on the plane

### A typology of operations



# The implications of the four Vs of operations processes

• All four dimensions have implications for the cost of crreating and delivering services and products

Put simply....

 high volume, low variaty, low variation and low customer contact all help to keep processing costs down

... on the contrary... low volume, high variety, high variation and high cusotmer contact generally carry some kind of cost penalty for the operation

### What do operations managers do?

We classify operations management activities under the four headings:

- 1. Directing
- 2. Designing
- 3. Planning and control delivery
- 4. Developing