

## **PROCESS ANALYSIS: TERMS, BASIC CONCEPTS AND TOOLS<sup>1</sup>**

### **1. PURPOSE AND SCOPE**

The purpose of the present technical note is to help students and participants in the management training and development programs to analyse, diagnose and improve operational processes. It is the result of an effort to summarise and organise the various terms, concepts and tools broadly developed in the technical notes listed in Appendix 1, some of which are handed out in the course.

It is also the author's intent to contribute with a personal perspective, based on his teaching experience, on how to apply said concepts and tools to the process analysis, thus linking it to how businesses compete.

In short, the idea is to offer a particular conceptual and methodological framework that may serve as a guide in the analysis of operational processes in the organisation, in order to diagnose its coherence with the selected competitive strategy.

This note is by no means intended as a detailed methodology on process analysis, since that would require greater length, and exceed its purposes.

### **2. HOW DO BUSINESS COMPETE: STRATEGY, OPERATIONS AND PROCESSES**

Before we plunge into process analysis itself, let's briefly list the various ways businesses can compete and how they organise operations, so as to highlight the practical utility of operation process analysis in senior decision-making.

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When opting for a competitive strategy, we need to define three basic features of our offer to the target-customer market: product, service and price.

- **Product:** includes such aspects as variety (range), quality (performance), personalisation (ability to meet client's needs), innovation (new products and improvement of current ones).
- **Price:** as in cost of acquisition as well as use and maintenance, ratio costs and psychological costs to the customer.
- **Service:** encompassing such aspects as delivery period, meeting deadlines, delivery batches, claims and complaints customer service, guarantees, etc.

In order to comply with the company's competitive strategy, the senior manager needs to know about process analysis, to support any decision regarding operation management, and to respond to such important questions as the following:

- Are my operations suitable to meet my strategy and the promise made to customers?
- Do I have the capacity to meet the expected demand and make money?
- Are my operations efficient, allowing tight costs and competitive prices?
- Are my operations flexible enough to respond to changes in products or volumes?
- Will the response time of my process allow me to meet delivery deadlines?

Process analysis is helpful to diagnose whether a company's operations are properly designed and managed in order to support its competitive strategy.

This document sets forth concepts and techniques applicable to the analysis of those processes meant to provide a service or manufacture a product. Though they are also a part of a business' operations, concepts and techniques applicable to processes of other activities, such as design, logistics or customer service, will not be described here, so as not to move away from the purposes of this note.

### **3. REQUIREMENTS OF PROCESSES TO SUPPORT STRATEGY**

The competitive strategy defined by the company requires that its processes have certain characteristics in terms of capacity, productivity, flexibility, speed and cost. In regards to the purposes of the present note, these characteristics are defined as follows:

- **Capacity:** maximum amount of units that can be processed in a certain period of time.
- **Productivity:** production per resource unit (e.g. man-hours, machine-hours).

- **Flexibility:** how easy is it to adapt the process' operations and resources to changes of product or volume quantities.
- **Response time:** time the process takes to respond to an order of a product or service.
- **Cost:** monetary value of the resources consumed per product or service unit.

Process analysis is used to diagnose whether the operating system (be it production or service provision) meets these requirements.

As stated, a specific method of process analysis is described in this document.

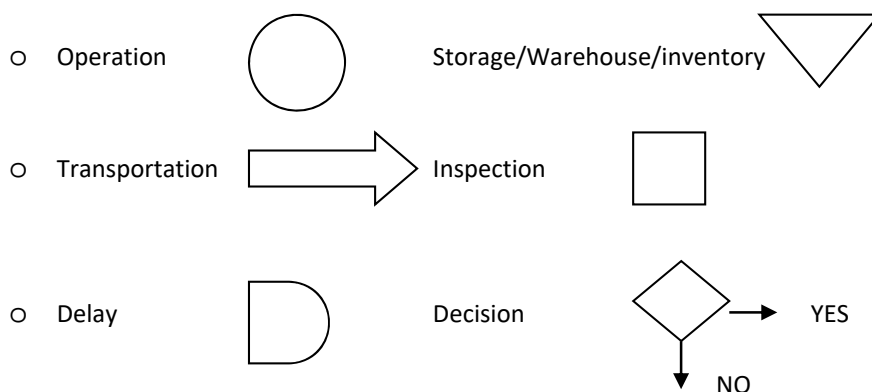
#### 4. THE CONCEPT OF PROCESS: OPERATIONS AND RESOURCES

A **process** can be defined as the sequence of operations that needs to take place in order to manufacture a product or provide a service.

An **operation** is any action that will transform a unit through the process. These units may be materials, clients or information. After all the operations in the process have taken place, the result will be a finished product or a service provided.

The first thing we need to do to analyse a process is to understand how it works; the best approach for that is to make a **flowchart** of said process, identifying the operations and resources involved in it.

When describing the flowchart, internationally accepted symbols are used to represent the different types of activities that can take place in a process, namely:



**Resources** involved in a process may be people, machines or equipment. People are key resources in service processes, while machine and facilities are determining factors in industrial manufacturing processes.

When one or more resources are involved in a number of operations, it is a good idea to group them together in a **workstation**.