

❖ "Manufacturing Strategy"



Scuola di Ingegneria

INTRODUCTION

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❖ **COMPETITIVE DRIVERS**

Competitive drivers that influence the product and the manufacturing process are:

- **Production cost**
- **Product range size and differentiation**
- **Time to market**
- **Logistic service**
- **Product quality**
- **Quality management system**

❖ QUALITY

Quality has recently played and is still playing an important role in competitiveness.

The required improvement rates are high and are higher than the ones required to the other drivers.

So:

WHAT IS THE MEANING OF QUALITY ?

❖ QUALITY

DEFINITIONS OF QUALITY

(some among the well known experts on quality are cited in alphabetical order)

Crosby: compliance with the specifications.

Deming: predictable degree of uniformity and reliability at low cost and suitable to the market.

Feigenbaum: the set of commercial, design, production, maintenance characteristics that allow a product / service to meet customer expectations.

Ishikawa: satisfaction of customer needs.

Juran: suitability for use.

Taguchi: the totality of the losses (costs) that are caused to the company by the time the product leaves the factory (not quality).

DEFINITIONS OF QUALITY

Notwithstanding the presented definitions cover different points of view, they all highlights the involvement of several stakeholders.

❖ QUALITY

ISO, by ISO 9000 (v. 1994) regulation, proposed the quality definition:

Quality is the set of properties and characteristics of a **product** or **service** that give it the ability to satisfy stated **and** implicit requirements.

It is worth to highlight:

1. the idea of quality extends to service
2. it is worth considering implicit requirements.

❖ QUALITY

The implicit needs are the ones that are not specified by contract but which must be **identified** and **defined** by the company, however, because they are part stakeholders expectation.

For example, when you enter into a contract for the insurance of your car, you normally specify the ceilings for fire and theft, but not the timing of compensation. It is assumed that they are short (**!!!???**).

❖ QUALITY

The requirements must be reflected in the **properties** and **characteristics** of the product / service according to criteria and methods to achieve the goals.

As of manufacturing products, the requirements could deal with:

- cost
- ease of use and maintenance
- safety
- availability
- reliability
- environmental impact

❖ QUALITY

In many cases the requirements may change over time, thus the periodic **review** of the **benefits** offered by the product is needed.

The quality, and everything related to it, must therefore be a **dynamic system** aimed at responding more promptly to the demands of all stakeholders.

❖ QUALITY

This statement is included in *ISO 9000* :

“A key factor in the performance of a company or organization is the quality of its products or services. A global trend of increasing needs regarding quality expressed by customers is registered; along with this trend there is a growing awareness that in order to obtain or maintain **good economic performance** the **continuous improvement of quality** is often necessary .”

❖ QUALITY

Despite the common perception, the link to the company objectives is included in the concept of “quality”.

Thus, “quality” has to be designed and, in order to reach the desired level in an effective and efficient way, it is worth considering that the final “quality” depends on the product design, on its manufacturing process and on the process control.

Those are all processes that have to be defined and developed in the most appropriate way.