



Managing by process

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Informations

- **Time of sessions:**
 - Tuesday: 9.00 am – 12.30 pm
- **Students consultation:**
 - Tuesday: 12.30 pm (classroom)
 - e-mail: mraimondi@liuc.it
- **Communications**
 - Gabriella Cavazzana

Text references

- **Hammer, Charpy**
Reengineering the Corporation”
Harper Collins, 1993
- **Bartezzaghi, Spina, Verganti**
Organizzare le PMI per la crescita
IlSole24ore, 1999
- **U.Frigelli**
Il governo dei processi
Guerini e Associati, 2001
- **David K.Karr – Henry J.Johansson**
Best Practices in reengineering
McGraw-Hill Inc, 1995
- **Masaaki IMAI**
Kaizen
Il Sole 24 ore, 1992

Text references

- **Elzinga, Gullede, Lee**
Business Process Engineering
Kluwer Academic Publishers, 1999
- **Davenport**
Process innovation. Reengineering work through information technology
HBS Press, 1993
- **Johansson, McHugh, Pendlebury, Wheeler**
Business Process Reengineering
Wiley, 1993
- **G.Oriani**
Reengineering
Guerini e Associati, 1995
- **Peppard, Rowland**
Business Process Re-engineering
Prentice Hall, 1995

Project work and case study

- The team can be composed by 3-4 members (max)
- The team will choice to conduce the BPR project in a company or in a public administration
- The process analysis and the relative BPR initiative should be synthetically described in a document (maximum 15 pages)
- The document (paper + file) should be delivered to the Engineering Faculty Office (Mrs. Gabriella Cavazzana, I floor, tower building) 10 days before the exam date
- During sessions some cases study will be proposed and solved by different teams
- The project work will be evaluated with the case study solutions and the evaluation will be assigned to all the team members

Evaluation

4 points → 1 point x 4 case study during sessions

24 points → project work in 4 step:

- 1) Perception (3 points)
- 2) Planning (6 points)
- 3) Design (9 points)
- 4) Implementation (6 points)

= 28 points (assigned to the team)

Written test +2/-2 points (assigned individually)

Introduction

The need for innovation

- **Today companies operating in a more and more dynamic and turbulent context, where changes in the market structure, in technologies, in society and laws are frequent and deep**
- **A key factor for the company's success (both large and medium/small size) has become the capability to manage innovation:**
 - **Technology**
 - **Organization**
 - **Management**

Why innovation?

- **Customers value criteria:**

$$\text{value} = \frac{(\text{quality}) \times (\text{service})}{(\text{cost}) \times (\text{cycle time})}$$

1. Quality

- **Meet customer needs**
- **Fitness for use**
- **Process integrity**
- **Minimum variances**
- **Elimination of waste**
- **Meet users requirements**
- **Continuous improvement**

2. Service

- **Customer support**
- **Product service**
- **Product support**
- **Flexibility to meet**
- **Customer demands**
- **Meet market changes**

3. Cost

- **Design and engineering**
- **Conversion**
- **Quality assurance**
- **Distribution**
- **Administration**
- **Inventory**
- **Materials**

4.Cycle time

- **Time to market**
- **Concept of delivery**
- **Order entry to delivery**
- **Response to market focus**
- **Lead time (design- engineering- delivery)**
- **Materials**
- **Inventory**

New customer values

- **How to satisfy new customer value criteria?**
- **Two main issues:**
 - **Increase speed of innovation**
 - **Boost new-product development**

The management innovation system

- **Key factors:**
 - **Management of current activities must be effective**
 - **Improvement in the management of current activities (continuous improvement)**
 - **Capability to innovate products and process (radical innovation)**

The basic principles of the new organization:

- 1. Managing by process**
- 2. Working by process**
- 3. Development of competences and human resources**

What's a process?

1st definition:

“All company **activities, decisions, operations** developed by different **functions** to make output **more competitive** on the market.”

Pendelbury

What's a process?

2nd definition:

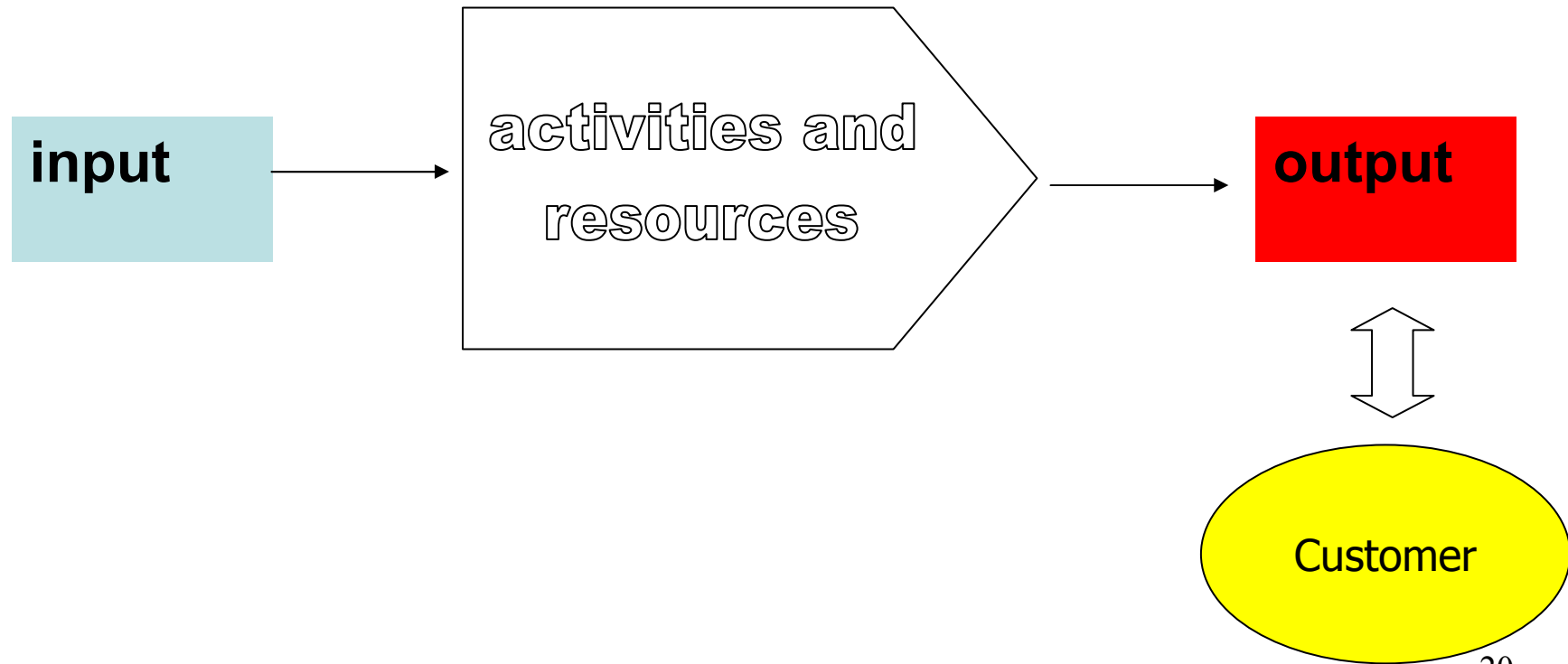
*“An **organized and structured** set of activities and decisions, whose aim is to produce an output which is actually **needed by a client** and to which a **value is recognized**”*

Davenport

What's a process?

- **Process (Lat. processus - movement) is a naturally occurring or designed sequence of changes of properties or attributes of an object or system. More precisely, and from the most general systemic perspective, every process is representable as a particular trajectory in a system's space.**
- **Ex. Every measurements is a process. The process of measurement is the fundamental concept in physics, and, in practice, in every field of science and engineering.**
- **For the above goal-oriented reason, from the industrial managerial point of view, the following inputs can be initially applied in an engineering process specification: people, machines and tools, materials, energy, information, professional knowledge, capital, time and space.**

What's a process?



What's a process?

The elements which are necessary to identify and describe a process are:

- **Input**
- **Output**
- **Activities**
- **Interdependencies**
- **Resources**
- **Managerial methods**
- **Clients**

Process toolbox

- **Examples of process orientation family:**
 - **Just-In-Time (JIT): philosophy that calls for a total re-organization of operations activities in order to:**
 - **Minimize non-value-adding activities**
 - **Align operation**
 - **Pull Operation System focused on individual functions (manufacturing oriented)**

Process toolbox

- **Total Quality Management (TQM): focus on quality designed and built into each activity.**
 - Slogan: “doing it right the first time”
- **Business Process Reengineering (BPR) concentrates on core business processes using JIT and TQM toolboxes**
 - To control supply chain
 - To reach the market efficiently
 - Companies should be destroy all of their preconceived paradigms about business and begin a new.

Process management

- **Process management is the ensemble of activities of planning and monitoring the performance of a process, especially in the sense of business process**
- **Process Management is the application of knowledge, skills, tools, techniques and systems to define, visualize, measure, control, report and improve processes with the goal to meet customer requirements profitably. It is different from program management in that program management is concerned with managing a group of inter-dependent projects.**
- **Ex. ISO9000 mandates the process approach to managing an organization.**

Business process

- **A business process is a collection of interrelated tasks, which solve a particular issue**
 - A business process can be decomposed into several sub-processes, which have their own attributes, but also contribute to achieving the goal of the super-process.
 - The analysis of business processes typically includes the mapping of processes and sub-processes down to activity level.

Business process

- There are three types of business processes:
 1. **Management processes** - the processes that govern the operation of a system. Typical management processes include “corporate governance” and “strategic management”.
 2. **Operational processes** - these processes create the primary value stream, they are part of the core business. Typical operational processes are Purchasing, Manufacturing, Logistic, Marketing and Sales.
 3. **Supporting processes** - these support the core processes. Examples include Accounting, Recruitment, IT-support.

Business processes

- **Not only production processes**
- **Cross-functional processes**
- **Crossing different managerial levels**
- **Not only for external customers**

Examples of business process

- **Customer acquisition**
- **Manufacturing**
- **NPD: New Product Development**
- **Logistics**
- **Production planning & control**
- **Order management**
- **Management control**
- **Information management**
- **Human resource management**
-

How to identify processes?

- **Each structure has to manage a set of processes which is generally significantly different from the other companies' one**
- **It is possible to use an analytic approach, i.e. a top-down analysis of the activities of the organization**
- **It's possible to use a check list to identify process inside the Company**
 - **Es. the American Productivity & Quality Center's International Benchmarking Clearinghouse**

How to identify processes?

- It can be helpful to divide the processes of an organization into:
 - **Primary processes:** they directly create value for one or more external clients, whose level of satisfaction is significantly influenced by the operative performances of the process itself (time, quality and costs)
 - **Support process:** they are necessary for the management of the primary processes, but they do not create by themselves value recognized by an external client. Their clients are always internal

Examples of primary process

Company producing control systems for chemical plants, according to an MTO (make to order) approach.

– Primary processes:

- **Proposal elaboration**
- **Order management**
- **Hardware development from a standard platform**
- **Software development and testing**
- **Subsystems development and testing**
- **Installation and final tests on the client's plant**
- **Development of new platforms**

Examples of support process

- **Support process:**
 - **Budgeting**
 - **Scanning and selection of new technologies**
 - **Human resources management and development**
 - **Production planning & control**
 - **Financial management**
 - **Cost accounting**

“Managing by process”

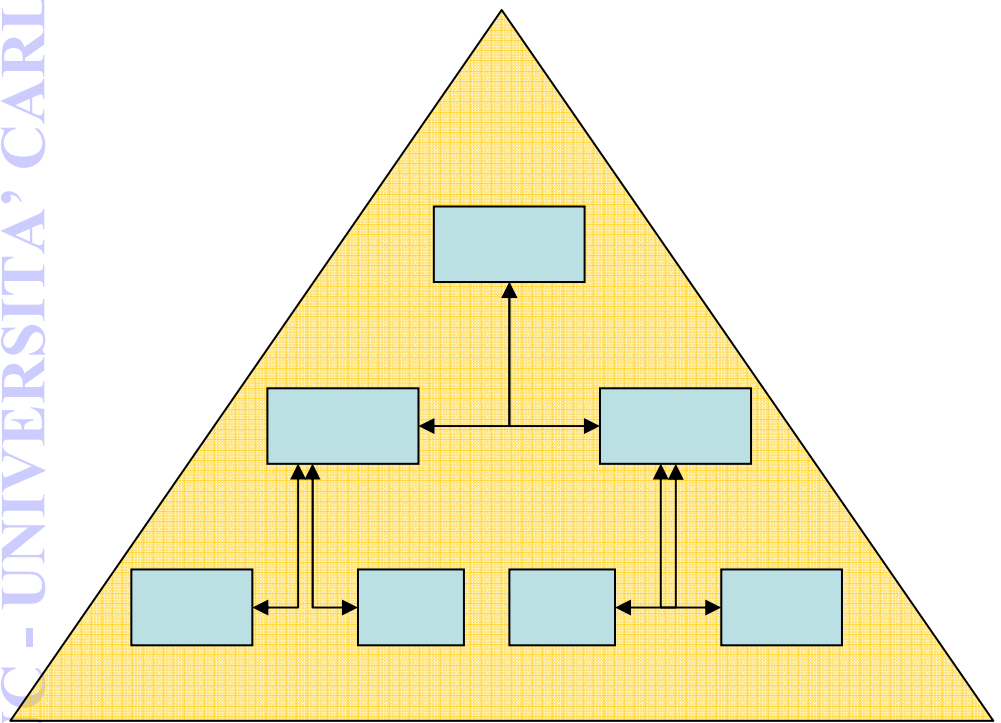
- **There are 9 milestones to follow in order to organize and manage a company from a process perspective:**
 - 1. The creation and diffusion of a strong “process culture” in the organization**
 - 2. The adoption of the client’s point of view and the implementation of internal supplier-client chain**
 - 3. The identification of a process owner**

“Managing by process”

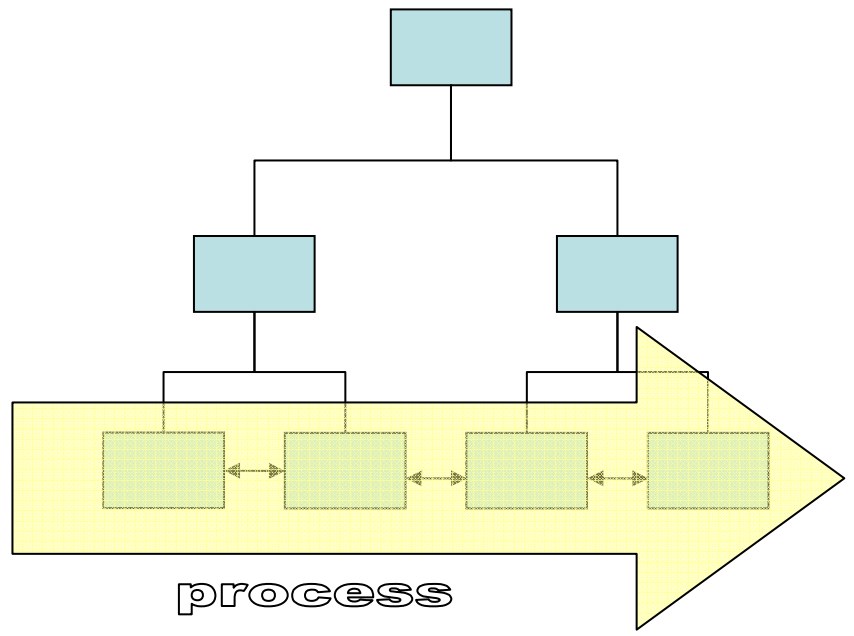
- 4. Balance the use of push and pull approaches to the process management**
- 5. The decentralization of support and information management processes**
- 6. The use of ICT (Information & Communication Technology) in order to re-design processes and support their management**
- 7. The re-composition of fragmented activities**
- 8. The proxy of decision power**
- 9. The realization of a no-functional organization**

Organization

functional organization



process organization



process

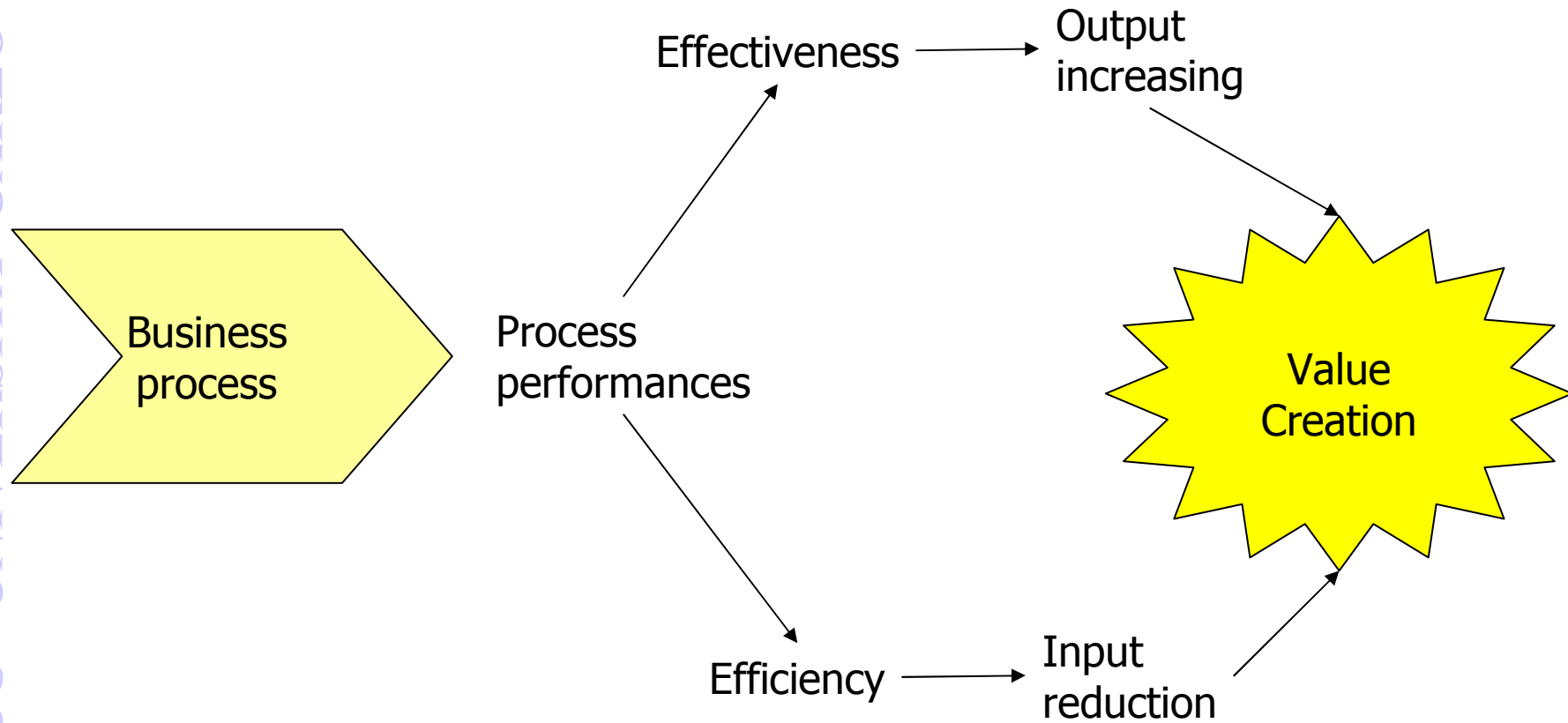
“Process culture”

- **The diffusion of a “process culture” in an organization requires:**
 - **The overcoming of the functional view (functions should be seen as “repository of resources and competences” needed by the processes)**
 - **Focusing on global performances (i.e. process) rather than local ones (i.e. functional)**
 - **Paying higher attention not only to “what” is done, but also to “how” it is done**
 - **....and, especially, understanding the business process....**

“Process culture”

- **In order to understand process company it's necessary that:**
 1. **Processes, at least the primary ones, are described in their basic elements, i.e. activities, interdependencies, input, output, clients (process mapping)**
 2. **They are periodically analyzed in order to evaluate their performances (in term of time, costs, quality)**
 3. **Any critical aspects is pointed out and each opportunity for an improvement identified**

Process performances



Process performances

- **There are three macro-performances which can impact on the effectiveness and the efficiency of process:**
 - 1. Time**
 - 2. Quality**
 - 3. Costs**
- **It's important to connect the incentive system of the firm with these kind of general (process) performances**

Time

- **Performances in terms of time are both drives of effectiveness and efficiency:**
 - 1. Delivery time (or answer time) to the client**
 - 2. Punctuality of the delivery time**
 - 3. Process lead-time**

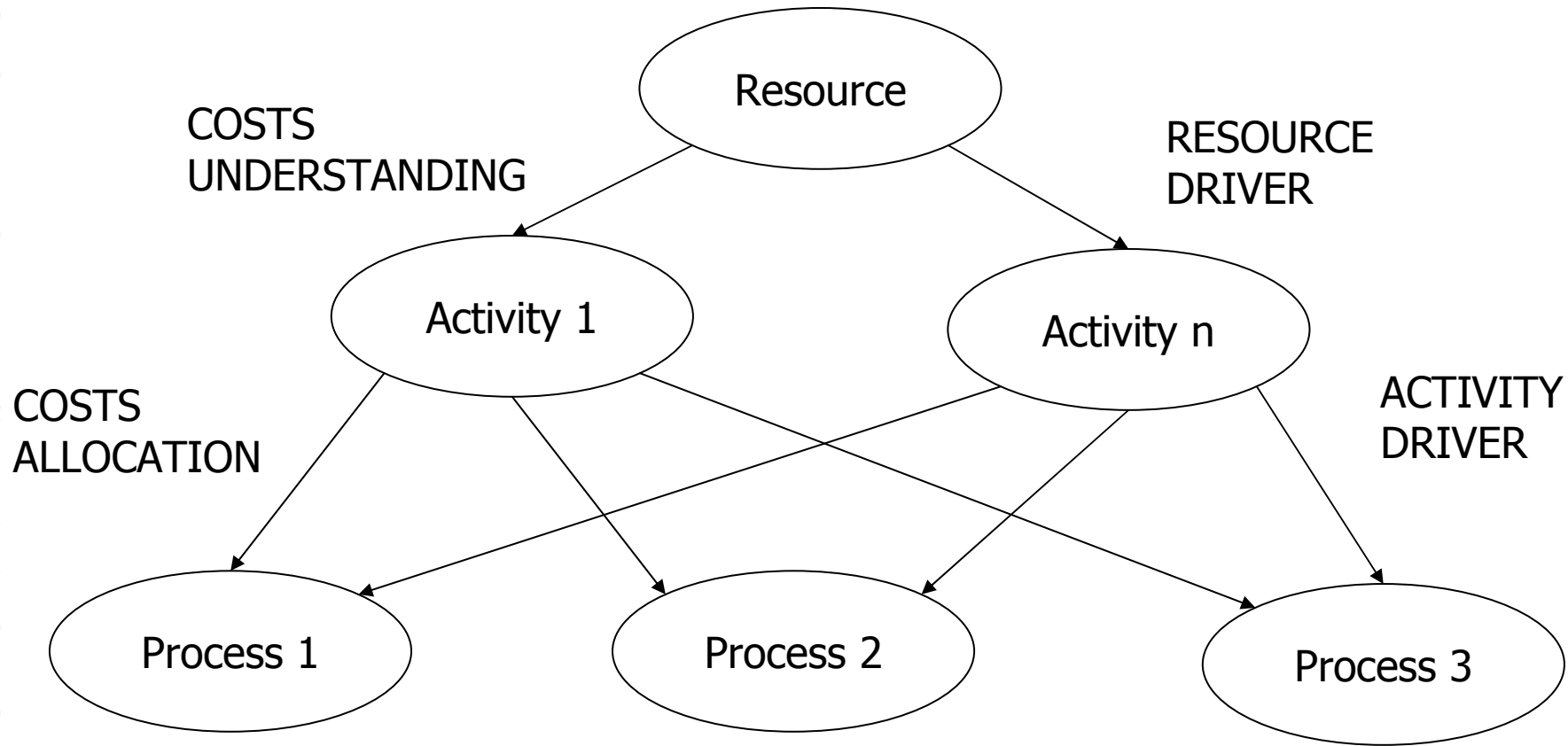
Quality

- **Performances in terms of quality are both drivers of effectiveness and efficiency**
 1. **Target quality of the output**
 2. **Conformity quality of the output**
 3. **Internal quality of the process (scraps, defects, ...)**

Costs

- **One problem: there are some difficulties in the evaluation of the process cost, because of the need to aggregate information and data from different functions and to allocate costs which are common to many outputs**
- **To solve this problem it can be used the Activity Based Costing (ABC) approach**
 - **Cost of the process output**

ABC for process cost evaluation



Internal supplier-client chain

- **The activation of internal supplier-client chains consists in the transformation of the objectives of the final (external) client into objectives for the intermediate processes clients**
- **Requirements:**
 - **To consider the organizational units which need a process output as external clients**
 - **High flexibility**
 - **To expand the chains outside the company's boundaries (partnership with external clients and suppliers)**
 - **To define interface performance indicators, simulating internal market transaction**

Internal supplier-client chain

- **In order to achieve the flexibility of the organization, it's necessary to:**
 - 1. Standardize phases, input and output**
 - 2. Reduce the interdependencies between processes because of resource sharing**
 - 3. Use fast and automatic communication systems**

Process representation

- **It is common to use a graphic representation or any other kind of model which is simple to read and understand**
- **It's possible to use one of the structured techniques for process mapping, which have the advantage to create a common language for all the organization.**