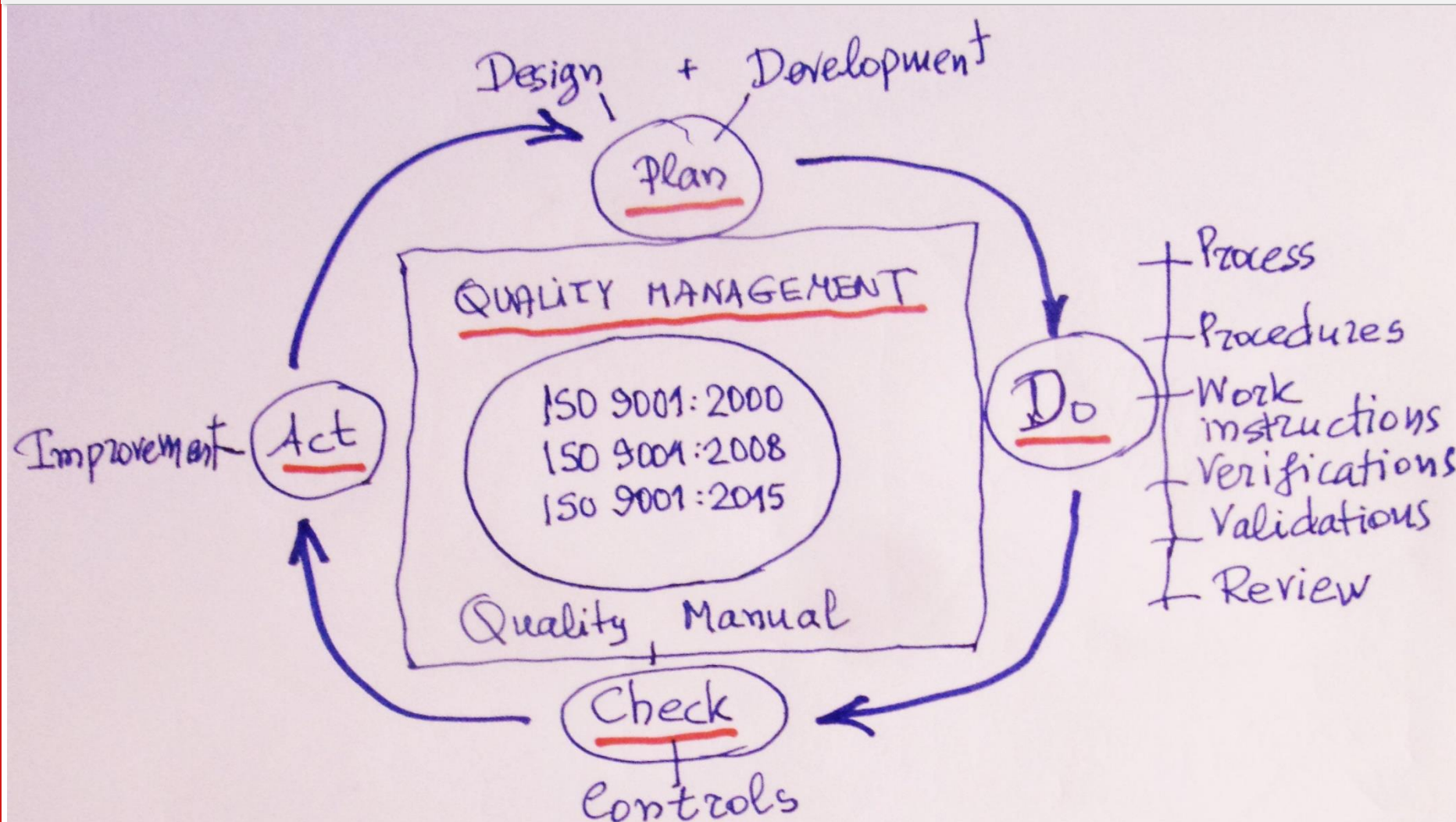
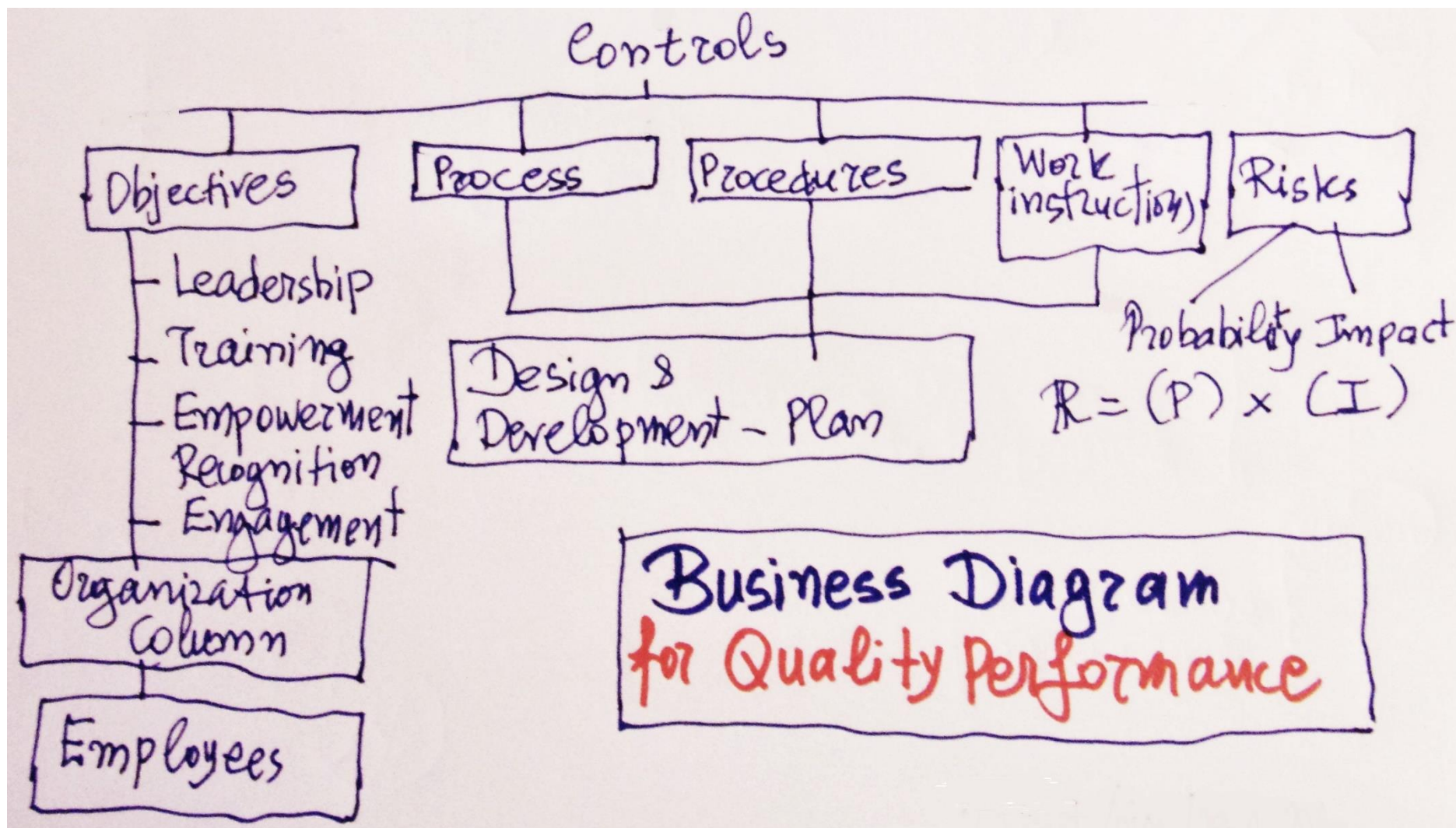


# Quality Management Basics Critical for Business Sustainability Μαρ. Μήτσιου

# Quality Cycle



## Business Diagram for Quality Performance





## Short Introduction in ISO History

- **ISO (International Organization For Standardization) founded in 1947**, to facilitate world trade,
- **In 1970**, ISO make publications for technical standards, engineering practices and manufacturing,
- **In 1979 BS 5750**, created by key Industry bodies – Emphasis on the manufacturing sector and **plays a key role in ISO history**,
- **ISO 9000 : 1987** Created by ISO Committee TC176, based on 20 core elements found in **BS 5750**,
- **ISO 9000 : 1994** Emphasis to preventive actions – Requires manuals & documented procedures,

## Short Introduction in ISO History

- **ISO 9001 : 2000 & ISO 9001 : 2008**
  - Setting goals and objectives,
  - Focus on processes and their interaction,
  - Continual improvement,
  - Customer satisfaction,
  - Production control as indicator for performance and tools for improvement,
  - The focus on written procedures is reduced,
  - Clear evidence (metrics) required to show that the processes are working,
  - Audits are not intended to measure compliance alone, they are used to see if the processes will achieve the goals

## Short Introduction in ISO History

- **ISO 9001 : 2015**
  - More reduction in documented information & written procedures,
  - Emphasis on clear evidence (metrics),
  - Organization context is required,
  - Shareholders & stakeholder are taken into account,
  - Risk management replaces preventive actions,
  - Awareness & engagement people (employees).

## Basic Terms in Quality Management

- **Objectives** → Depending upon the:
  - ✓ Legal system of a country,
  - ✓ Ownership structure of the organization. Which means, culture (ethics, values, policy),
  - ✓ Brands of the organization
- **Processes,**
- **Procedures,**
- **Work instructions,**
- **Risks on objectives,**
- **Awareness & Engagement people,**
- **Interaction**

# Basic Terms in Quality Management

What is a process?

What is a procedure?

What is a work instruction?

What is Risk on objectives?

• **Process** → Flow of inputs and outputs information, that answers questions as follows:

-What we want to do?

-Why?

-Who are involved?

-How ? (mentioning the resources, methods, etc., not an analytical state)

-When it starts? – when it ends?

-How much it costs?

The result (output) is the input for another Process... It can be called :  
“Net of the Organization”

• **Procedure** → Gives an analytical state, how the process needs to be done

• **Work instruction** → Explains how to carry out the procedure

• **Control objectives with risk register** →  $R \text{ (Risk)} = P \text{ (Probability)} \times I \text{ (Impact)}$



# Organization Core – Context of the Organization

Context of the organization ↔ Leadership / Ownership

- 1. Objectives**
- 2. Internal factors of the organization:**
  - Culture,
  - Knowledge,
  - Resources,
  - Processes,
  - Shareholders**
- 3. External factors:**
  - Economic,
  - Political,
  - Technological,
  - Geographical,
  - Applicable requirements / **Stakeholders** (legislative, contractual, regulatory - including customers, competitors, suppliers and neighbors)
- 4. Risks on objectives**

## Employees / Organization Column

- **Right skills (soft, technical) and competencies per position,**
- **Leadership needs firstly to incorporate the organizational principles,**
- **Leadership needs to assure that directors are bound to take their tasks seriously,**
- **Right teams,**
- **Training and supporting employees, depending on their duties,**
- **Empowerment and recognition, increase employees' motivation,**
- **Engagement**

## Design & Development - Plan

- **Processes,**
- **Procedures (if necessary),**
- **Work instructions (if necessary)**

## Operations – Do

- Processes,
- Procedures,
- Work instructions,
- Verifications ( confirming that design output meets the design output requirements for each design element and design package, individually),
- Validations (making final product or service officially approved by meeting the trial requirements),
- Reviews,
- Evidences

## Controls - Check

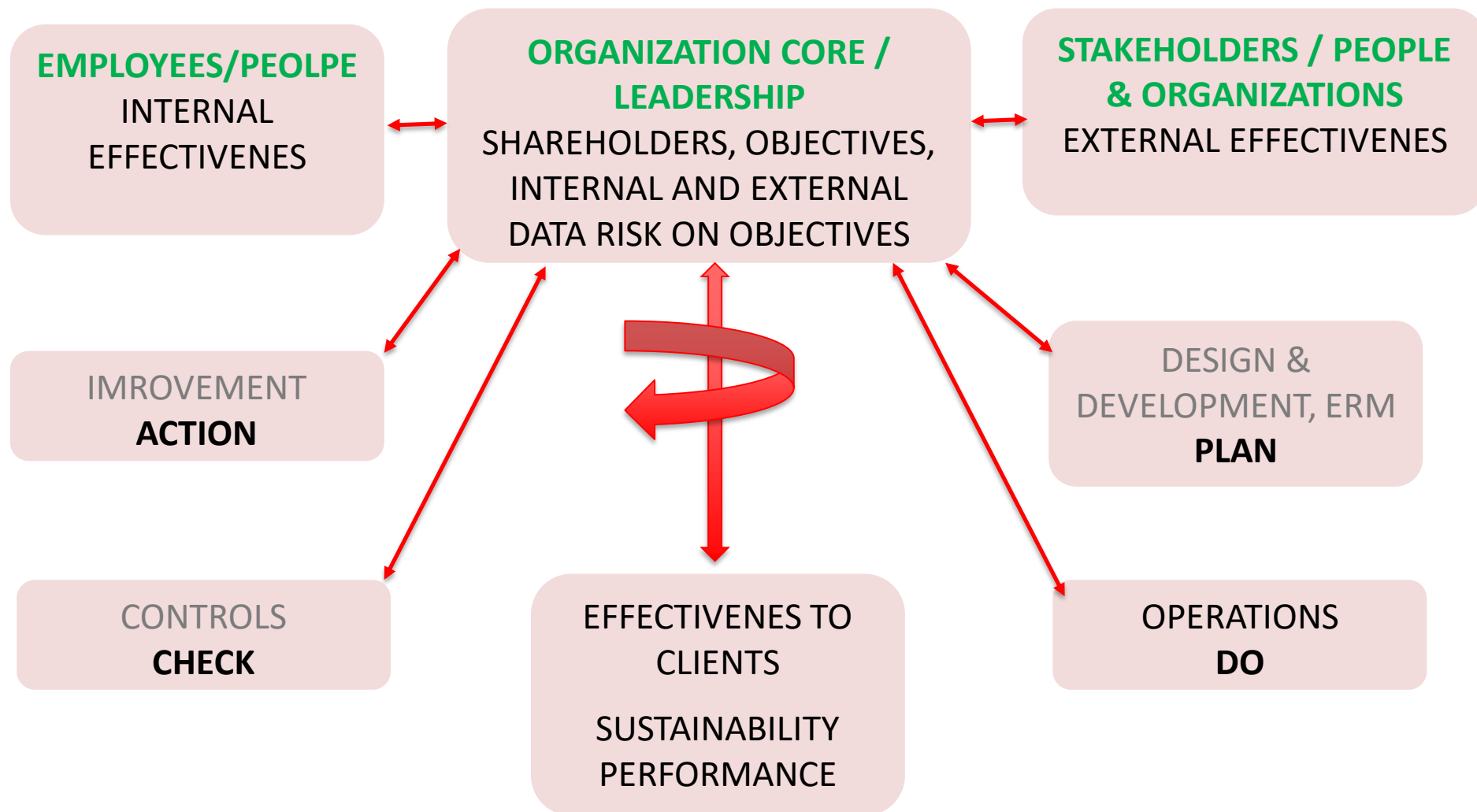
- **Internal auditing (1<sup>st</sup> party audit),**
- **Daily reports and observations,**
- **External auditing performed on suppliers by the organization (2<sup>nd</sup> party audit – contracted relationship),**
- **External auditing performed on the organization by customers (2<sup>nd</sup> party audit – contracted relationship),**
- **Customers' feedback,**
- **Leadership practices for the internal control system**



## Improvement – Action

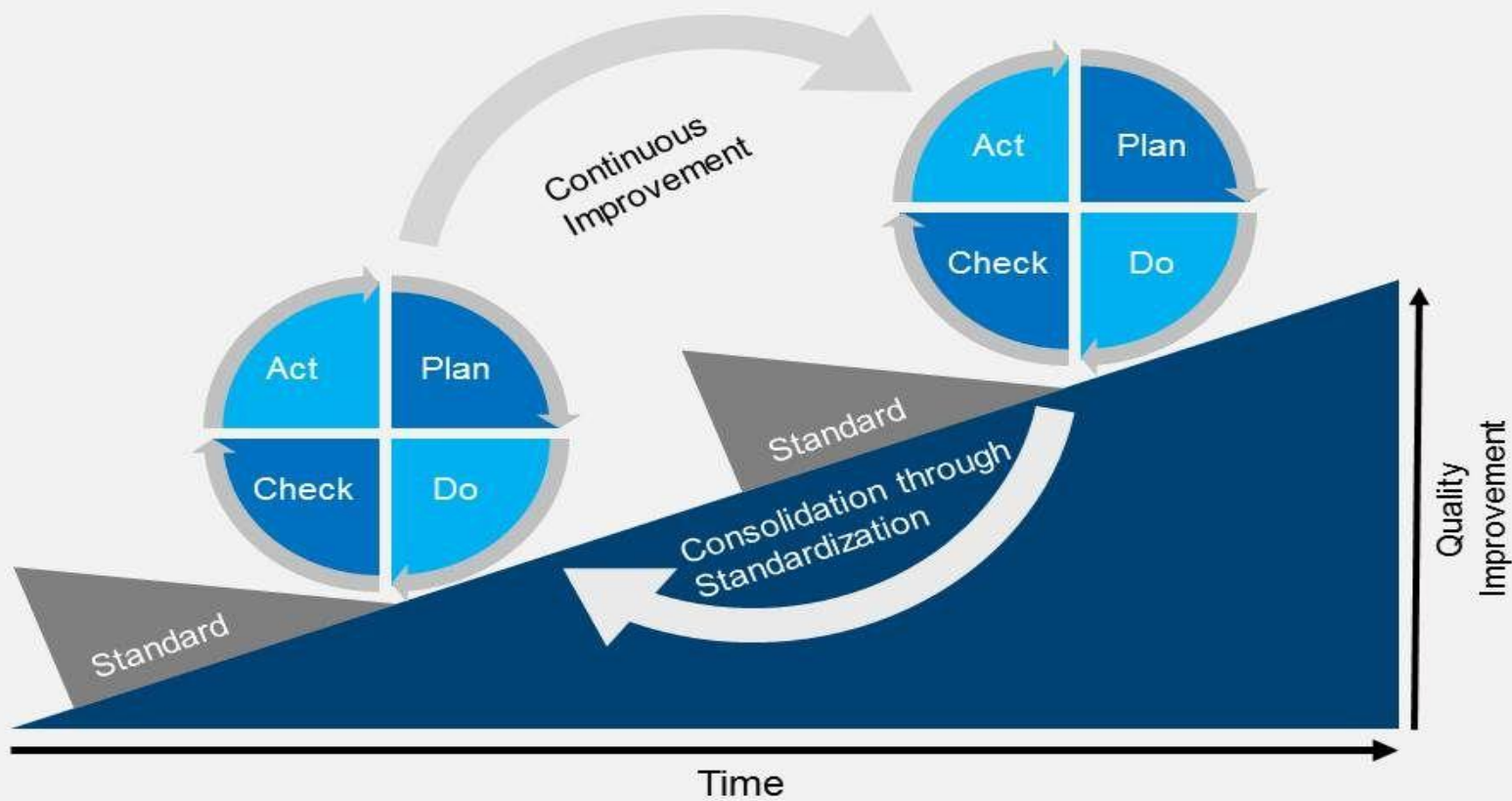


## Business Diagram For Quality Performance



## PDCA – E.DEMING Cycle

### PDCA Process Chart Continuous Improvement Cycle



## The three pillars every organization



## The four pillars for business sustainability





# ACI – Quality System Guideline for concrete construction

## Questions need to be answered

- What is a quality manual?
- What does “controlled” mean? (regarding documents),
- Which documents need to be controlled?
- What about electronic documents?
- How much detail is needed in process documentation?
- What does the customer want?

Understanding the customer requirements:

The requirements are understood ?

The requirements can be met?

The project management system can deliver?

- What is customer property?

# ACI – Quality System Guideline for concrete construction

## Questions need to be answered

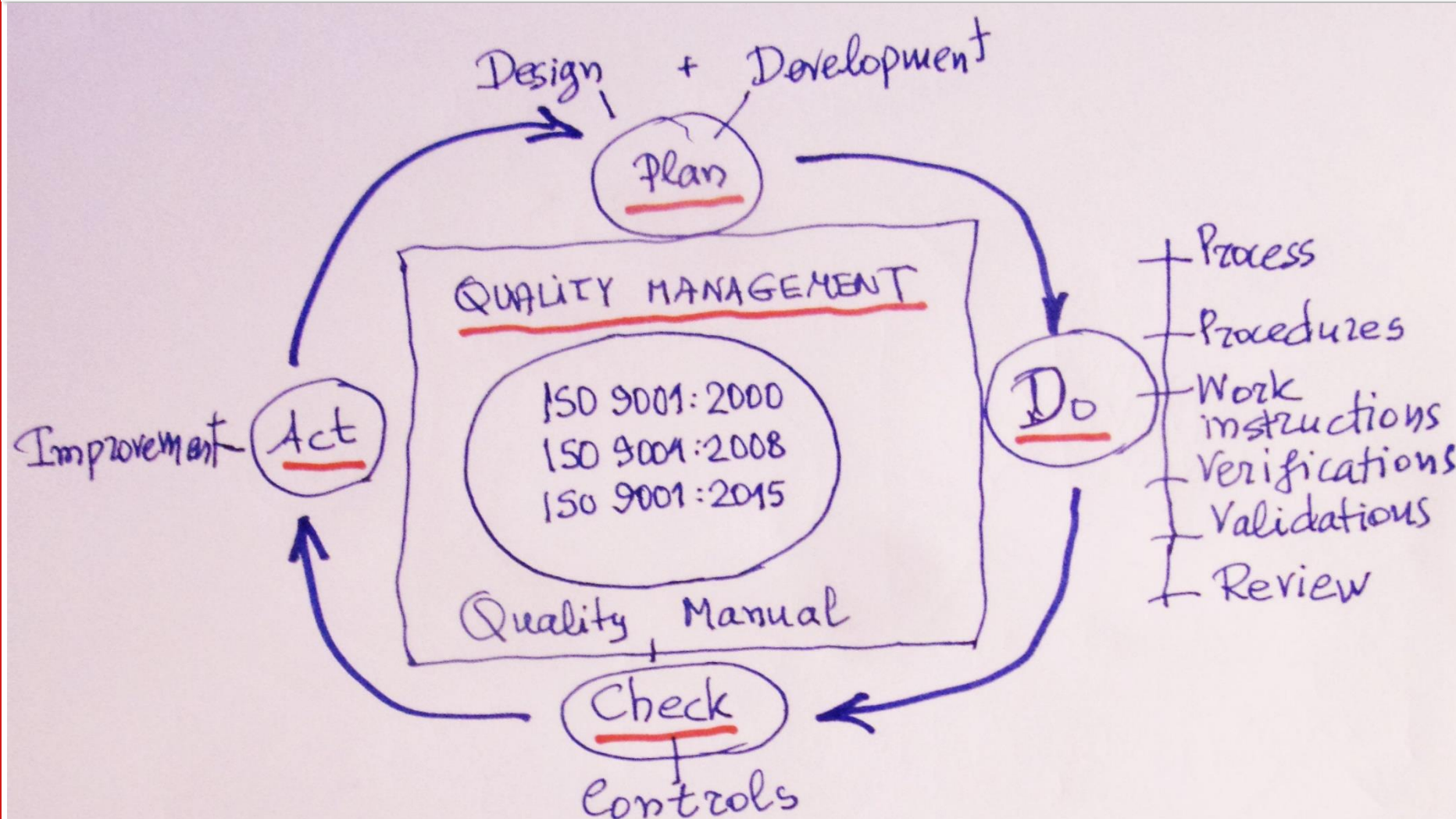
- What about setting quality objectives on projects?
- What about project planning?
- Who does what?
- Who looks after the quality management system?
- Is the quality management system working?
- What is needed?
- Are the people able to do what is required?
- How is employee awareness raised?

# ACI – Quality System Guideline for concrete construction

## Questions need to be answered

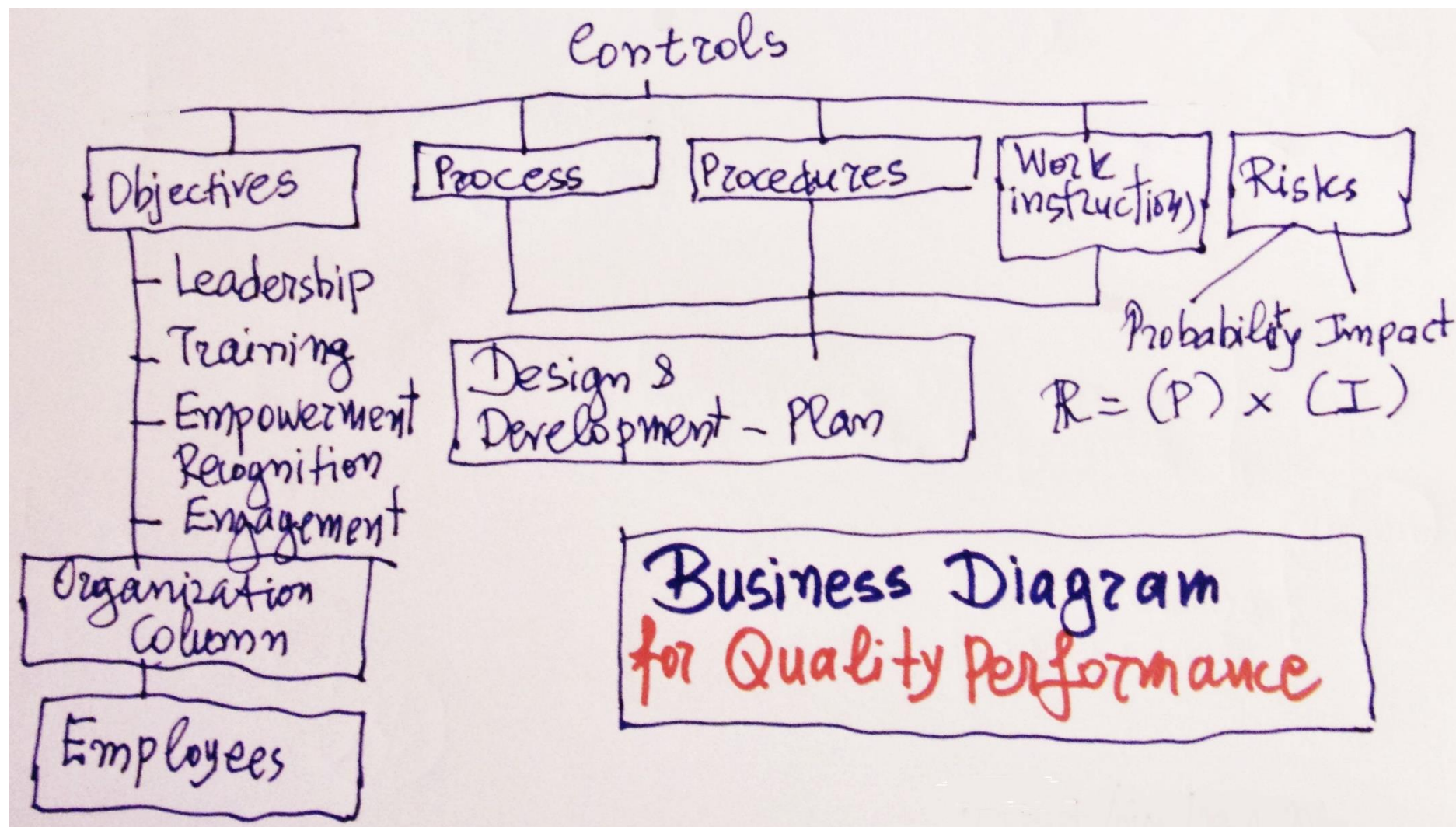
- what need to be considered on design and development processes?
- What is the design and development result (output)?
- Comparing design planning / input and result (output), do the pieces fit?
- Who is involved in design reviews?
- Is design process right after verification?
- What is the difference between design review and design verification?
- Is the final product or service right after validation?
- Are you giving the customer what they want?
- Did you get what was ordered?
- What constitutes a nonconforming product?
- What is an audit?

## Quality Cycle





## Business Diagram for Quality Performance





Thank you