IE407 Total Quality Management Lecture 17

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Reminder: SA grade

- SA grade will be determined by the attendance system
- More than 8 absents will automatically lead to SA grade
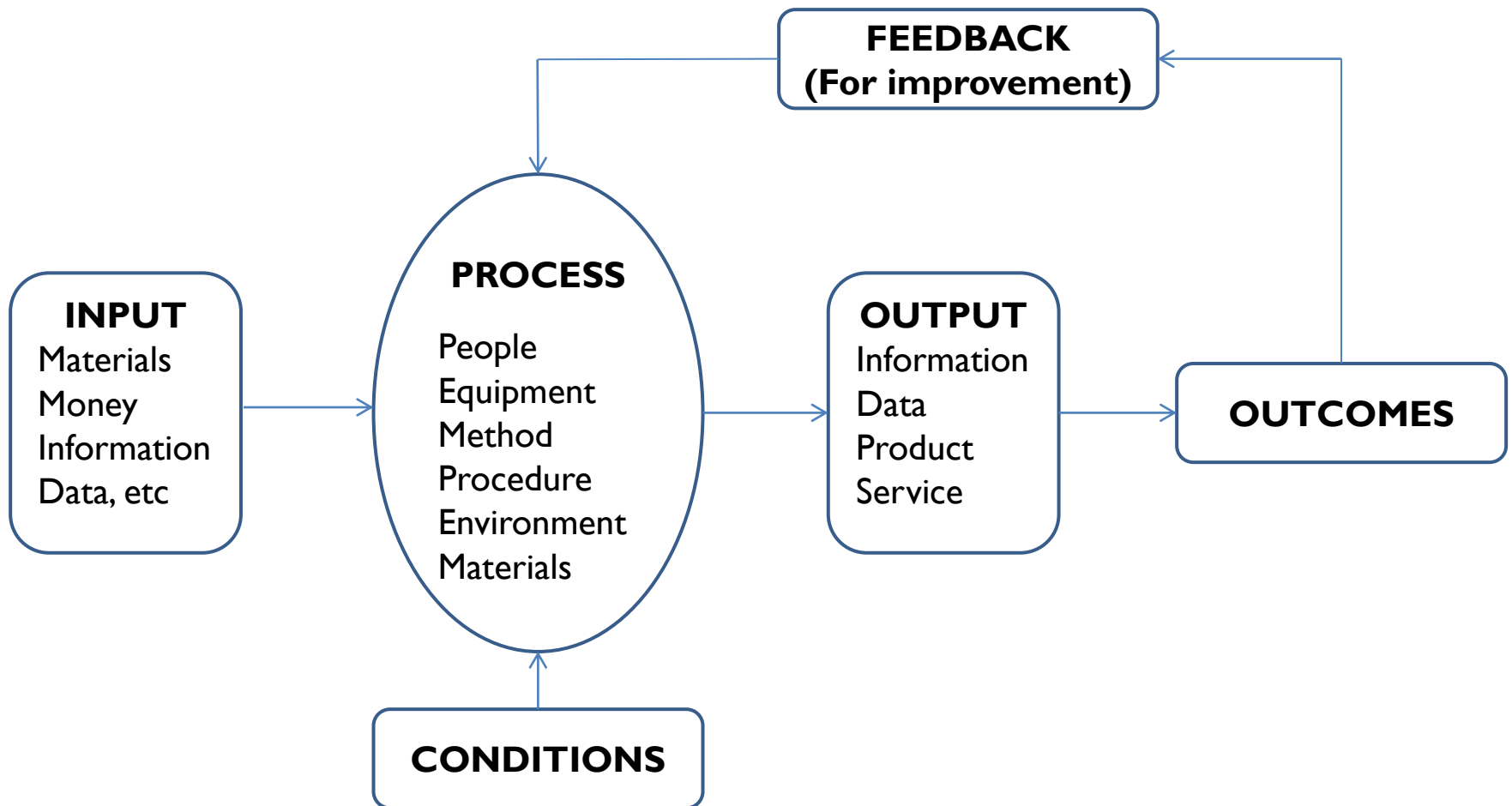- Please be careful about your attendance in lectures

Besterfield Chapter 5: Continuous Process Improvement

Process

- View all work as a process, whether it is associated with production or business activities
- Make all processes effective, efficient, under control, and adaptable

Process

Process - 2

- Process refers to business and production activities of an organization
  - **Business processes** include functions like purchasing, engineering, accounting, and marketing, among others
  - **Production processes** include activities that convert materials from one form to another, more useful, form
- A process is the interaction of some combination of people, materials, equipment, method, measurement, and environment
  - This interaction produces an outcome such as a product, a service, or an input to another process
  - A process **must have** value-added activities and repeatability

Process - 3

- A process must adhere to certain conditions imposed by policies and constraint or regulation
  - For example, legal requirement, union agreements, bio-ethical policies
- A process must be <u>effective</u>, <u>efficient</u>, <u>under control</u>, and <u>adaptable</u>

Process Improvement

- Process definition begins with defining the internal and/or external customers
    - The customer defines the purpose of the organization and every process within it
    - It is logical that all process improvements must be defined in terms of increased customer satisfaction by providing higher quality products and services
- All processes have at least one owner
- Frequently the process will cross multiple organizational boundaries and have multiple sub-processes each having its respective owner
    - Any process improvement initiative must include ownership

Process Improvement - 2

- There are five basic ways to improve a process
  - Reduce resources
    - Unnecessary use of resources is wasteful
  - Reduce errors
    - Errors lead to defects
    - Errors use further resources to correct
  - Meet or exceed expectations of downstream customers
  - Make the process safer
    - A safer workplace is a more productive one with fewer lost-time accidents and less workers' compensation claims
  - Make the process more satisfying to the person doing it
    - It will increase employee motivation

Approaches towards Continuous Process Improvement

❖ Juran's Trilogy
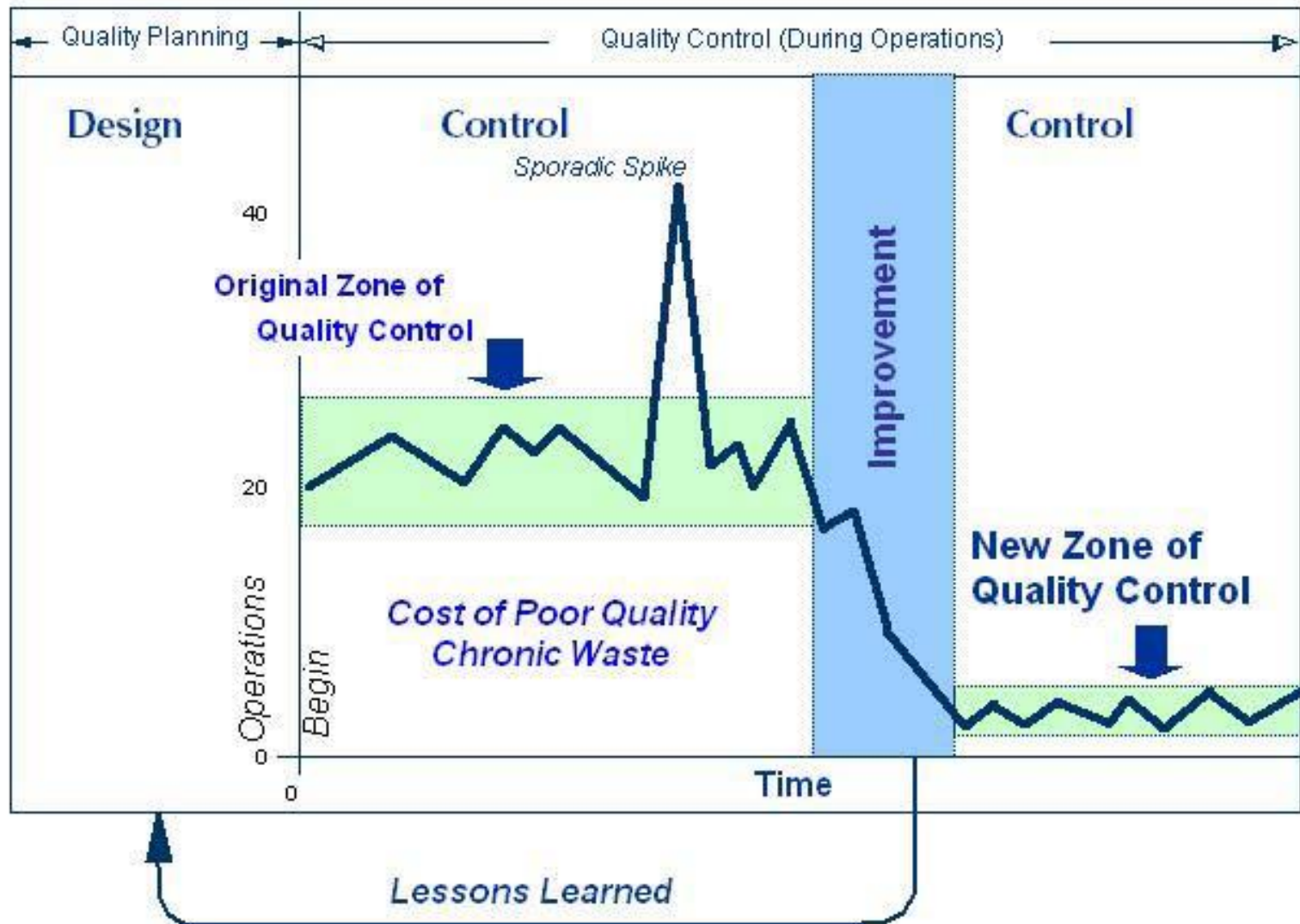
❖ Shewhart/Deming: Plan-Do-Study-Act cycle

❖ Kaizen

Juran Trilogy

Planning

Control

Improvement

THREE UNIVERSAL PROCESSES OF THE JURAN TRILOGY ®

Source: https://business901.com/blog1/does-the-juran-trilogy-pdca/

Juran Trilogy: Planning: Step 1

‣ Planning begins with identifying external customers and their requirements
  ‣ Marketing determines external customers
  ‣ Organizational personnel determine internal customers
‣ Customers' needs are discovered
  ‣ External customer might state his/her need in their own words but the real need may differ from the stated need
    ‣ For example, stated need may be an automobile, whereas the real need is transportation
  ‣ Internal customer may not state his/her need because of fear of consequences

Juran Trilogy: Planning: Step 1 (slide 2)

‣ Three ways to discover customer needs
  ‣ Being a user of the product or service
  ‣ Communicating with customers through product or service satisfaction or dissatisfaction information
  ‣ Simulation in the laboratory
‣ Customers' needs should be translated to requirements that are understandable to the organization and its suppliers

Juran Trilogy: Planning: Step 2

- Develop product and/or service features that
  - Respond to customer needs
  - Meet the needs of organization and its suppliers
  - Are competitive
  - Optimize the costs of all stakeholders
- This step is typically performed by a multifunctional team
- The team may use one or more of the following approaches
  - Quality function deployment
  - Taguchi's quality engineering
  - Quality by design

Juran Trilogy: Planning: Step 3

▸ Develop processes that are capable to produce the product and/or service features

▸ This step is also performed by a multifunctional team with a liaison to the design team

▸ This step includes the following activities

  ▸ Determination of necessary facilities

  ▸ Training, operation, control and maintenance of the facilities

  ▸ Process capability evaluation and process control type

Juran Trilogy: Planning: Final Step

▸ The final step is transfer of plans to operations for execution

▸ Once again a multifunctional team with a liaison to the other teams is used

▸ Process validation is necessary to ensure that requirements will be met continually and consistently
  ▸ Positrol and process certification are two techniques that help validate the process

References

▸ Besterfield, Dale H. and others. 2019. *Total Quality Management,* 5th edition. Pearson India