

Mohammed Khider University of Biskra

Faculty of Economics, Business and Management Sciences

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Module: Introduction to Business Management

Level: Second year LMD

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Lecture 05 : Evolution of Management thought (Modern Approaches)

Objectives :

- 1- **Understand the Quantitative Approach** by learning how mathematical models and quantitative analysis are used to optimize decision-making in management.
- 2- **Explore the Systems Approach** by :
 - a. Understanding organizations as dynamic systems with interrelated subsystems that interact with the external environment.
 - b. Grasp the Concept of Synergy
 - c. Studying the Open System Model and Learning how inputs, transformation processes, outputs, and feedback loops interact in an open system to ensure organizational adaptability.
- 3- **Comprehend the Contingency Approach:** Understand that management strategies must be flexible and adapted to specific situations and external conditions.

Structure :

- 1- Introduction
- 2- Quantitative Approach to Management
- 3- System Approach to Management
- 4- Contingency Approach to Management
- 5- Conclusion
- 6- Glossary

1- Introduction :

Modern management has evolved through various approaches that emphasize different aspects of organizational functioning.

Among these, the Quantitative, Systems, and Contingency approaches offer distinct perspectives on how management decisions should be made and how organizations should operate.

This lecture explores these approaches, highlighting how each provides valuable insights for effective decision-making and organizational growth in today's dynamic business environment.

2- Quantitative Approach to Management :

It emphasizes that the organization or decision making is a logical process and it can be expressed in terms of mathematical symbols and relationships, which can be used to solve corporate problems and conduct corporate affairs.

This approach focuses attention on the fundamentals of analysis and decision making. This brings together the knowledge of various disciplines like **Operation Research** and **Management Science** for effective solution of management problems.

The Quantitative School quantifies the problem; generate solution, tests the solution for their optimality and then it recommends. The decisions are optimum and perfect as distinguished from the human behavioural approach, in which decisions are 'satisfying'. This approach is devoid of any personal bias, emotions, sentiments, and intuitiveness.

The main postulates of the quantitative approach are as follows:

- ✓ Management is a series of decision making. The job of a manager is to secure the best solution out of a series of interrelated variables.
- ✓ These variables can be presented in the form of a mathematical model. It consists of a set of functional equation which set out the quantitative interrelationship of the variable.
- ✓ If the model is properly formulated and the equations are correctly solved, one can secure the best solution to the model.
- ✓ Organizations exist for the achievement of specific and measurable economic goals.
- ✓ In order to achieve these goals, optimal decisions must be made through scientific formal reasoning backed by quantification.
- ✓ Decision making models should be evaluated in the light of set criteria like cost reduction, return on investment, meeting time schedules etc.
- ✓ The quality of management is judged by the quality of decisions made in diverse situations.

3- System Approach to Management

It was developed after 1950 emphasising interdependance and interrelationship among various activities of organisation.

3-1- definitions :

An organized enterprise does not exist in a vacuum. Rather, it is dependent on its external environment; it is a part of larger systems such as the industry to which it belongs, the economic system, and society. Thus, the enterprise **receives inputs, transforms them, and exports the outputs** to the environment. However, this simple model needs to be expanded and developed into a model of process or operational management that indicates how the various inputs are transformed through the managerial functions of planning, organizing, staffing, leading, and controlling.

Systems thinking is the ability to see both the distinct elements of a system or situation and the complex and changing interaction among those elements.

A **system** is a set of interrelated parts that function as a whole to achieve a common purpose. **Subsystems** are parts of a system, such as an organization, that depend on one another. Changes in one part of the system (the organization) affect other parts. Managers need to understand the synergy of the whole organization, rather than just the separate elements, and to learn to reinforce or change whole system patterns.

Synergy means that the whole is greater than the sum of its parts. The organization must be managed as a coordinated whole.

Systems thinking enables managers to look for patterns of movement over time and focus on the qualities of rhythm, flow, direction, shape, and networks of relationships that accomplish the performance of the whole. When managers can see the structures that underlie complex situations, they can facilitate improvement. But doing that requires a focus on the big picture.

3-2- The main features of systems approach :

The main features of systems approach are as follows:

- a) An organisation is a system consisting of four main parts or subsystems namely **task, structure, people and environment**
- b) The subsystems of the organisation system are **interconnected** and **interdependent**. Therefore, all parts of the organisation must be in balance with one another.
- c) An organisation is an **open adaptive system** which continuously interacts with its environment. It is also **dynamic system** because the equilibrium in it always keeps on changing. The organisation system must, therefore, be in harmony with its environment.
- d) It is the responsibility of management to regulate and modify the system so as to optimise performance. Management is expected to perform **maintenance** (ensuring the stability and efficiency of the system) and **adaptation functions** (adjusting the system to the changing demands of the environment so as to make it more in tune with the organisations goals).
- e) An organisation is more than the aggregate of various parts. This is called "synergy".

- f) The position and function of each subsystem can be analyzed only in relation to other subsystem and to the organization as a whole rather than in isolation.

3-3- Open system view of organisation :

Systems are of several types.

- a) A *static system*, e.g. a petrol engine operates repetitively completing the same cycle of functions without change or deviation.
- b) On the other hand, the *dynamic system*, undergoes change, it grows or decays. Biological systems, e.g., plants, animals and human being are dynamic.
- c) A *closed system* is selfdependent and does not have any interaction with the external environment. Physical and mechanical systems are closed systems. A closed system concentrates completely on internal relationships, i.e. interaction between sub-systems only.
- d) **An open system approach** recognizes the dynamic interaction of the system with its environment in

The open system consisting of four basic elements as are indicating in the following figure:

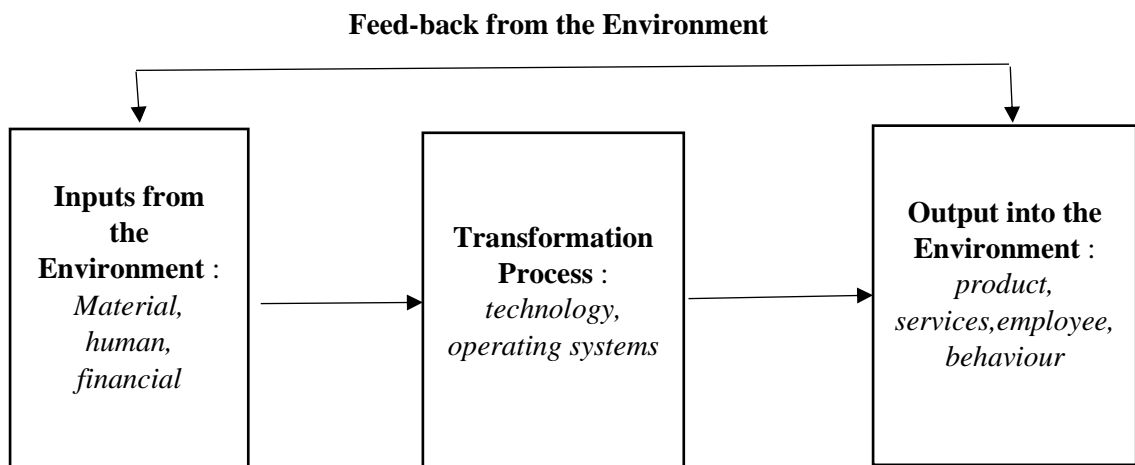


Figure 01 : Elements of Open System

Inputs: These are ingredients required to initiate the transformation process. They include human, financial, material and information resources.

Transformation process: The inputs are put through a transformation process that applies technology, operating methodologies, administrative practices and control techniques in order to produce the output.

Outputs: The output may be products and/or services, the sale of which creates profits or losses. This process also has by-product outputs such as worker behaviour, information, environmental pollution, community services and so on.

Feedback: A feedback loop is used to return the resultant environmental feedback to the system as inputs. If the environment is satisfied with the output, business operations continue. If it is not, changes are initiated within the business systems so that requirements of the customers are fully met. This is how an open system responds to the forces of change in the environment.

4- Contingency Approach to Management :

The basic theme of contingency approach is that organizations have to cope with different situations in different ways. There cannot be particular management action which will be suitable for all situations. The management must keep the functioning of an organization in harmony with the needs of its members and the external forces.

According to Kast and Rosenzweig, “The contingency view seeks to understand the interrelationships within and among sub-system as well as between the organization and its environment and to define patterns of relationships or configurations of variables. Contingency views are ultimately directed towards suggesting organizational designs and managerial actions most appropriate for specific situations”.

The approach has been used in important sub systems of management like organization, design, leadership, behaviour change and operation.

The main features of contingency approach are:

- Management is entirely situational. The application and effectiveness of any techniques is contingent on the situation.
- Management action is contingent on certain action outside the system or subsystem as the case may be.
- Management should, therefore, match or fit its approach to the requirements of the particular situation. To be effective management policies and practices must respond to environmental changes.
- Organizational action should be based on the behaviour of action outside the system so that organization should be integrated with the environment.
- Management should understand that there is no one hard way to manage. They must not consider management principles and techniques universal.

Conclusion

In conclusion, modern approaches to management, including the Quantitative, Systems, and Contingency approaches, emphasize different methods for optimizing decision-making and improving organizational efficiency.

The Quantitative approach relies on mathematical models for precise decision-making, while the Systems approach focuses on the interconnectedness of organizational subsystems. The Contingency approach, on the other hand, stresses the importance of adapting management strategies to suit specific situations.

Together, these approaches provide a comprehensive framework for understanding and improving management practices.

SUMMARY

1. Quantitative Approach to Management:

- This approach uses mathematical models and analysis to make logical decisions.
- It focuses on solving management problems scientifically, without emotions or personal biases.
- Decisions are based on generating, testing, and recommending optimal solutions.

Main Postulates of Quantitative Approach:

- Management is a series of decisions that can be modeled mathematically.
- The best solution can be achieved if models are correctly formulated and solved.
- Optimal decisions are necessary to achieve measurable economic goals.
- Management quality is judged by the quality of decisions in varied situations, evaluated by criteria like cost reduction and ROI (Return On Investment).

2. Systems Approach to Management:

- An organization is viewed as a system made up of interdependent subsystems (task, structure, people, environment).
- The organization interacts with its external environment and must adapt continuously to changes.
- Managers should focus on the synergy of the whole system, ensuring all parts work together for better performance.

Key Features of Systems Approach:

- Subsystems are interconnected and require balance.
- Organizations are dynamic, adaptive systems that interact with external forces.
- Management is responsible for maintaining system stability and adapting it to external demands for optimal performance.

Open System View of Organization:

- Organizations receive inputs (resources), transform them into outputs (products/services), and rely on feedback from the environment.
- Feedback helps organizations adapt to meet external demands or improve processes.

3. Contingency Approach to Management:

- Management actions depend on specific circumstances; there is no universal solution.
- Managers must adjust strategies based on the environment and situation.

- Management success depends on aligning organizational actions with external conditions and internal needs.

Key Features of Contingency Approach:

- ✓ Effectiveness of management techniques is situational.
- ✓ Management practices should adapt to changes in external forces for success.
- ✓ There is no one-size-fits-all management method; flexibility is essential.

GLOSSARY

English	Arabic
Quantitative approach	المقاربة الكمية
System approach	المقاربة النظامية
Contingency approach	المقاربة الموقفية
Decision-making	اتخاذ القرار
Operation research	بحوث العمليات
Bias	التحيز
Intuitiveness	الحدسية
Variables	المتغيرات
Criteria	المعايير
Return on investment	العائد على الاستثمار
vacuum	الفراغ
System / Subsystems	النظام / الأنظمة الفرعية
Synergy	التآزر
Flow	التدفق
Shape	الشكل
Networks	الشبكات
Open adaptive system	النظام المفتوح المتكيف
Harmony	التجانس
Maintenance	الصيانة
Isolation	العزل (الانعزال)
Static system	نظام ثابت
Closed system	نظام مغلق
Feedback	رجع الصدى – التغذية الراجعة
Situational	الظرفي – المرتبط بالحالة أو الموقف