

**EHS402: OPERATIONS AND SUPPLY CHAIN
MANAGEMENT (Elective)**

VIII Semester B.Tech CSE

Section B4,B5,B6/D,E,F

Lecture Notes

in

O&SCM



**Prepared and Compiled
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with
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to
authors of the prescribed textbooks as per syllabus
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online content

Module I

Introduction to Operations Management:

History of operations management

Types of manufacturing systems

Role and responsibilities of operations manager

Services operations

History of Operations Management

Definition of Operations Management:

“The science and the art of ensuring that goods and services are designed, manufactured and delivered successfully to the customers”

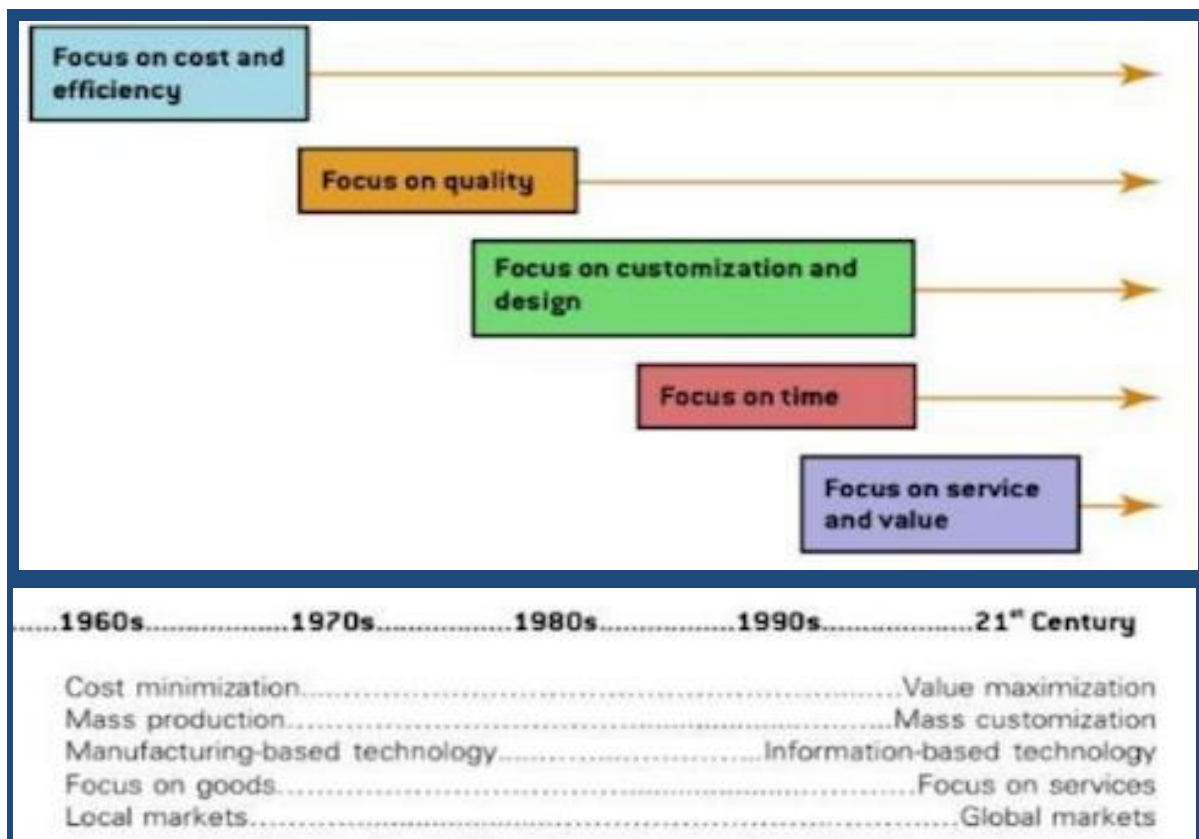
“Operations management involves planning, organizing, and supervising processes, and make necessary improvements for higher profitability.

The adjustments in the everyday operations have to support the company’s strategic goals, so they are preceded by deep analysis and measurement of the current processes.

History of Operations Management

History of operations management

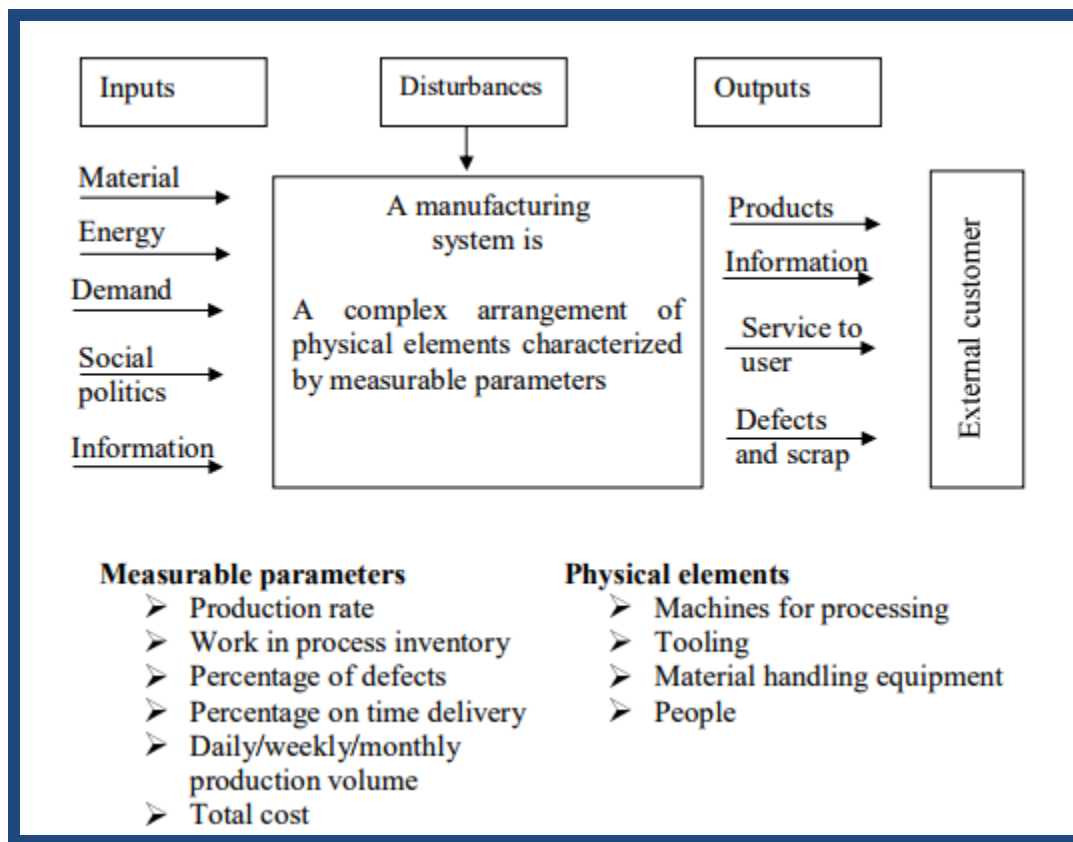
1776	Industrial Revolution	Division of labor	Adam Smith
1913	Scientific Management	Moving Assembly Line	Henry Ford
1940-1960	Human Relations	Motivation Theories	
1947	Management Science	Linear Programming	George Dantzig
1970	Quality Revolution	Just –in-Time (JIT) ; Total Quality Management (TQM)	
1970-1980	Globalization	EU	
1990	Information Age/Internet Revolution	www, ERP,E-commerce, Supply Chain Management	



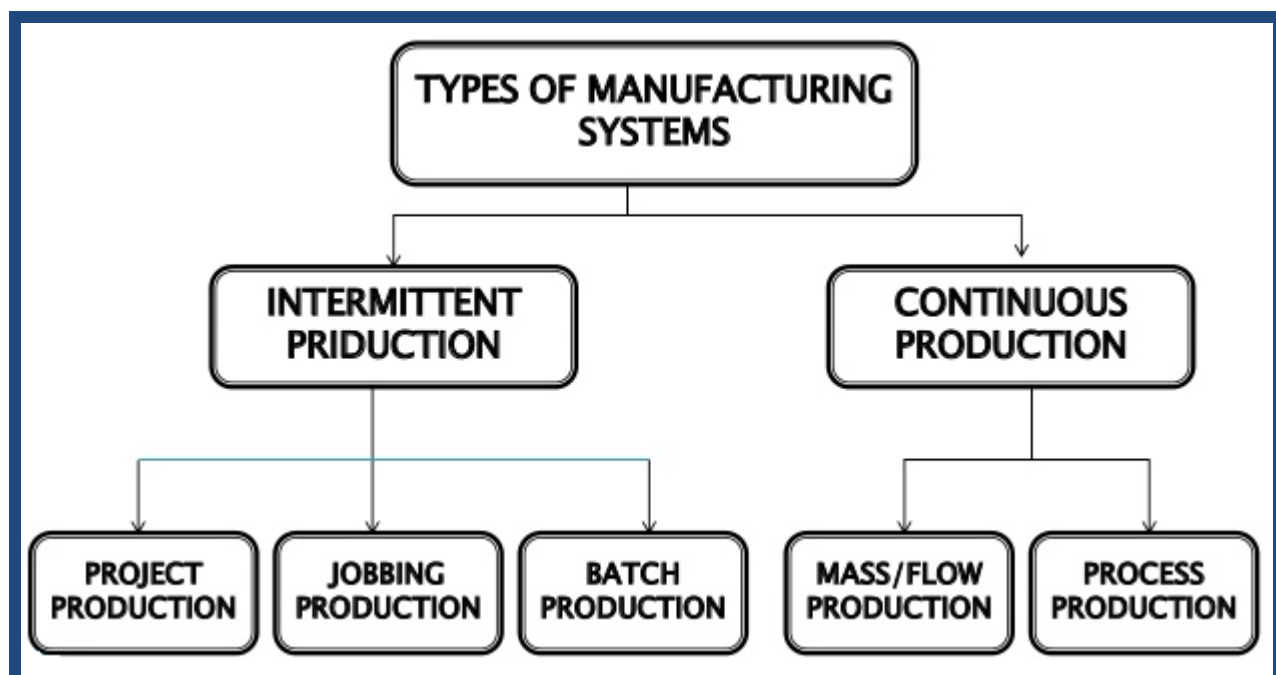
Five Eras of Operations Management [Courtesy: Wordpress.com]

Types of manufacturing systems

- The term manufacturing system refers to a collection or arrangement of operations and processes used to make a desired product or component.
- It includes the actual equipments for composing the processes and the arrangement of those processes (Fig.2).
- In a manufacturing system, if there is a change or disturbance in the system, the system should accommodate or adjust itself and continue to function efficiently.



Schematic representation of Manufacturing System [Courtesy: shodganga.inflibnet.in]



Classification of Manufacturing Systems [Courtesy: NishantW.com]

Role and responsibilities of operations manager



- **Helping organizations enhance the outcome with minimum inputs**
- **Explore and Implement technology for improving productivity**
- **Focusing on total quality of goods, services and processes**
- **Fix Schedules**
- **Create an invigorating work culture and environment**
- **Adapt the organization to global and environmental changes through continual learning**

Services operations

Service

It is a primary or complementary activity

Characteristics of services

- Intangible
- Produced/offered and consumed/received at a time
- It is often unique
- Involves high customer interaction
- Often knowledge based

Distinguishing factors between Goods and Services

Distinguishing factor	Goods	Services
Reselling	Can be resold	Unusual
Inventory	Can be stored in inventory	Difficult
Quality measurement	Possible	Not really
Selling and production	Distinct	Selling is a part of service
Transportation	Transportable	Services is provided and not transported
Automation	Easy to automate	Difficult to automate

Manufacturing operations Vs. Service operations:

Manufacturing operations	Service operations
Manufacturing operations convert inputs like materials, labour etc. into tangible outputs.	Service Operations also transform inputs into outputs but outputs are intangible.
Manufacturing Operation allow Separation between Production and Consumption	Customer receive service as it is performed. Thus, there is production as well as consumption of service at the same time.
Productivity is easily measured in manufacturing operations because manufacturing operations produce tangible products.	Productivity is not easily measured in service operations because the outputs of service operations are intangible.
Expenses required for material handling is more in manufacturing operations.	Expenses required for material handling are less as compared to manufacturing operations.
Customers have less contact with people who provide manufacturing operations.	Customers have more contact with persons who provide services.
Quality standards are relatively simple and easy to establish in manufacturing operations	Quality standards are difficult to establish and product quality is difficult to evaluate in service operations.
Manufacturing operations depend on maintenance and repair work.	Service operations do not depend on maintenance and repair work.