

Lecture #12

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Service Processes & Systems
Dept. of Mechanical Engineering - Engineering Mechanics
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Information Background

- ❖ Economy of USA:
 - “Knowledge- and information-based service economy.”
- ❖ Almost all services require information as an input.
- ❖ Almost all services generate information as part of the service.
- ❖ For some services, information is the output.
- ❖ Information is generated from data by an information system.

Service Processes & Information

❖ For some processes, information is a key component of the service process itself

- ❑ Bank

- The knowledge of customer balance in order to withdraw money and or deposit.

- ❑ University

- Database to record grades and bills in order to graduate students

Service Processes & Information

❑ Judicial System

- Evidence gathering in a case as well as the data concerning the criminal history of the person being judged

❑ Hotel

- Database that register reservations made by phone or internet

❑ Restaurant

Service Processes & Information

❑ Library

- Registration of each book or journal available, ability to give the exact location to student

❑ Electronic Store

- Records of receipts in order to know the date of purchase in case of a warranty claim.

Service Processes & Information

- ❑ Internal Revenue Service
 - Processing financial data
- ❑ Design Company
 - Manipulating CAD data
- ❑ Police Department
 - Retrieving data on vehicles, suspects, etc.
- ❑ Other?

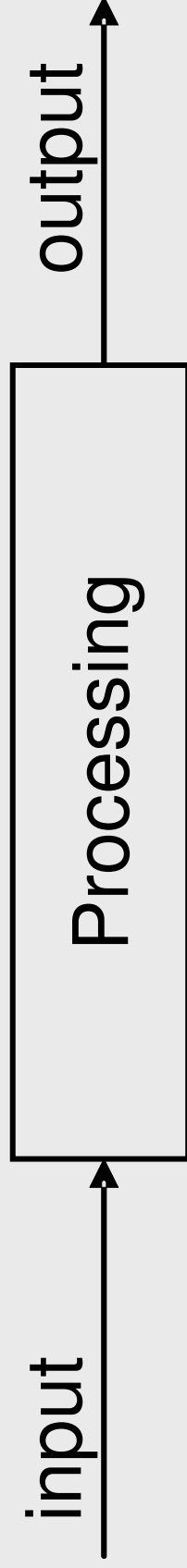
Information System

❖ An information system can be defined as a system of “interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and visualization in an organization.”
(Laudon and Laudon, 1998)

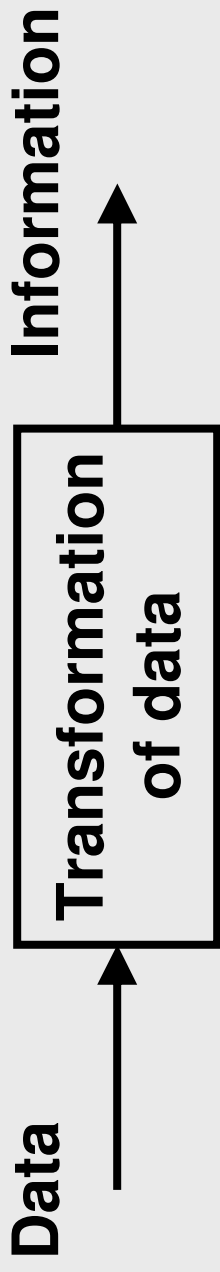
Information System

❖ An information system performs three basic activities:

- ❑ Collecting data
- ❑ Processing data
- ❑ Transmitting information



Information System Elements



Data

- ❖ Facts
- ❖ Numbers
- ❖ Words
- ❖ Strings of characters or symbols
- ❖ Un-interpreted observations
- ❖ Other?

Transformation of Data

❖ Transformation of data into information is the processing function of an information system

Information

❖ Data that has been transformed into a useful and meaningful form for human beings.

Information Systems

❖ A service organization may have separate information systems for different functions:

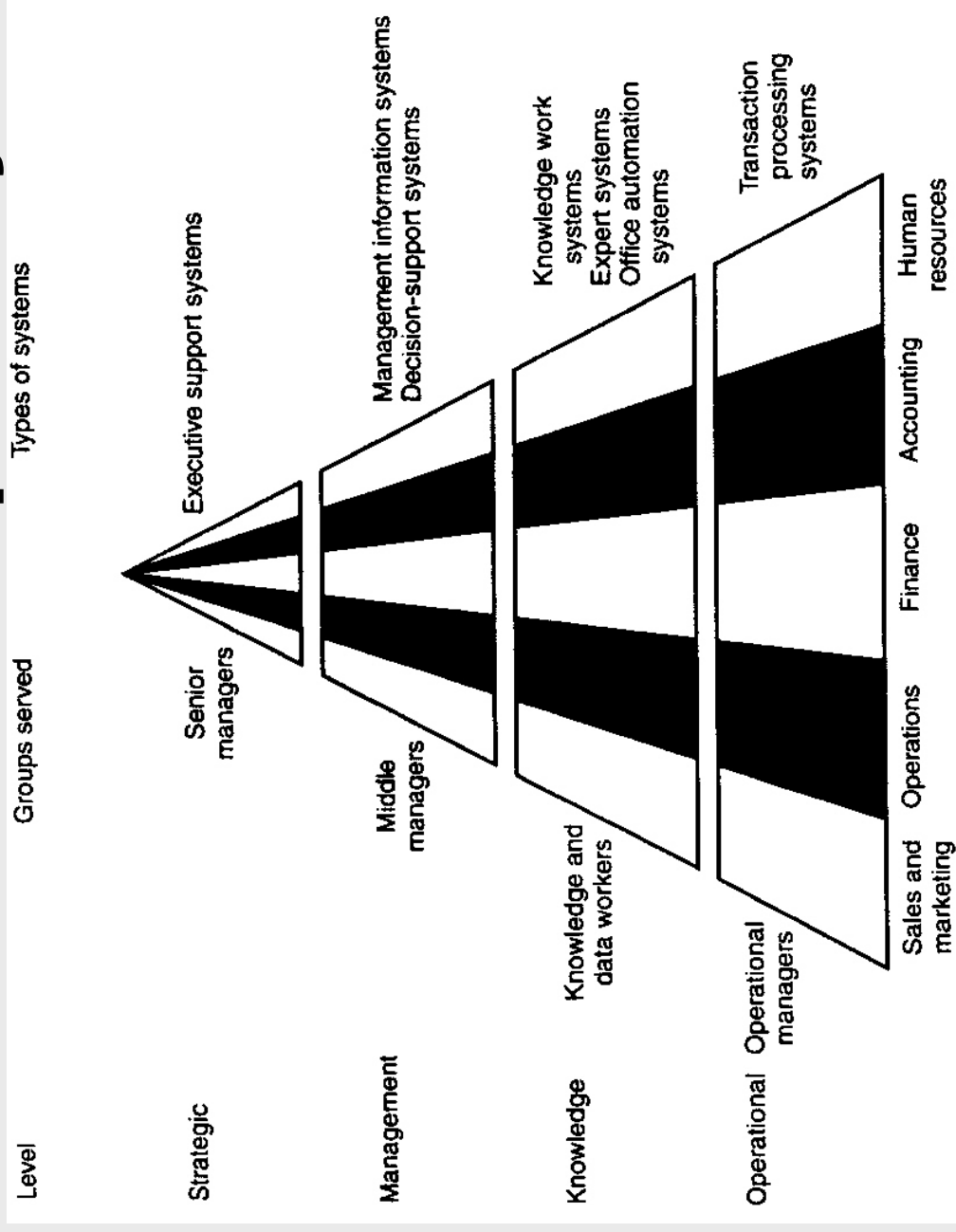
- ❑ Operations
- ❑ Marketing
- ❑ Finance
- ❑ Accounting
- ❑ Human resources

Information Systems – I.S.

❖ It may also have different information systems serving different organizational levels:

- ❑ Operational-level
- ❑ Knowledge-level
- ❑ Management-level
- ❑ Strategic-level

Types of IS & Groups They Serve



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Operational-Level Systems

❖ Designed to support operational – level managers by supplying them with information on day-to-day operations and transactions, e.g.,

- ❑ Sales
- ❑ Receipts
- ❑ Cash deposits
- ❑ Payroll

Operational-Level Systems

- ❖ They are also called transaction processes systems
- They collect data and generate information needed by operational managers to conduct their daily activities

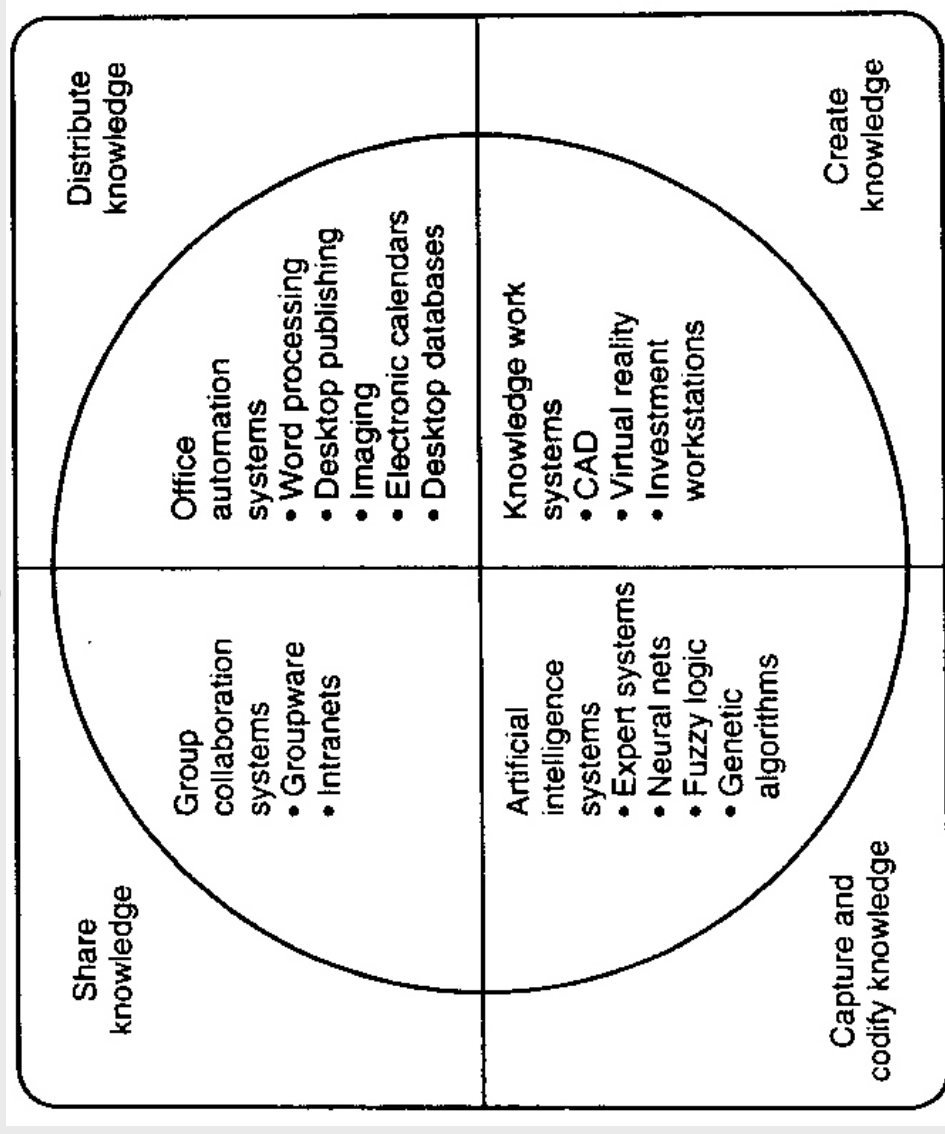
Data Workers

- ❖ They tend to have less formal educational degrees.
- ❖ They collect, record, and process relevant data.
 - Secretaries, accountants, filing clerks, data entry clerks

Knowledge-Level Systems

- ❖ These systems are designed to support knowledge and data workers.
 - Knowledge workers are those who apply their knowledge to organization's problems or by creating new knowledge
 - College degree, MS, PhD, scientists, etc.

Contemporary IS to support knowledge workers



Management-Level Systems

- ❖ They serve middle managers in planning, controlling, and decision making.
 - ❑ **Management information systems**
 - MIS provide weekly, monthly or yearly summary reports on indicators
 - ❑ **Decision support systems**
 - DSS go further by aiding the manager in making decisions, rather than just providing the information.

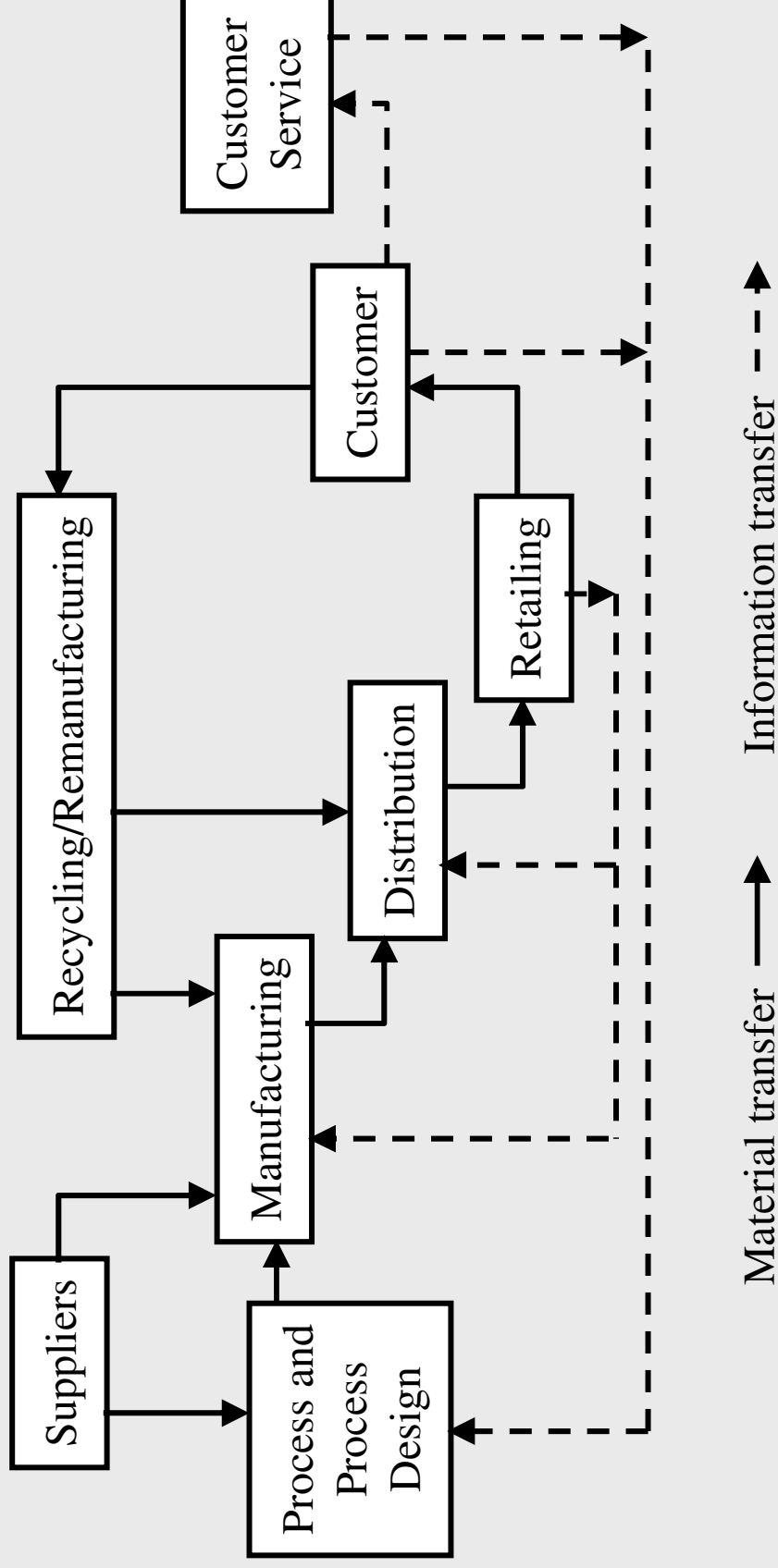
Strategic-Level Systems

- ❖ **They serve senior managers**
 - **Executive support systems (ESS)**
address unstructured decisions, and provide information both from within the organization and from outside.
 - **These systems use advanced graphics and communications software and are very user friendly.**

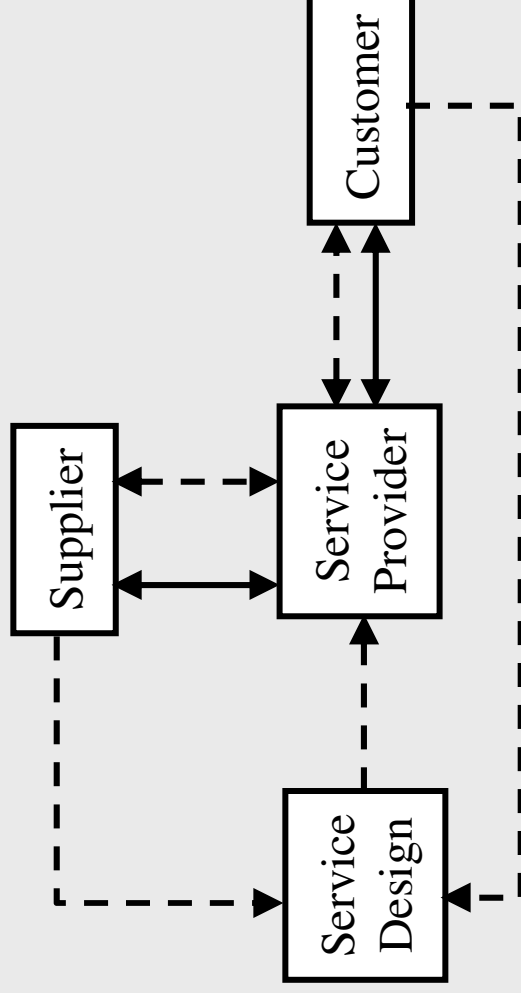
Information is Key for Services

❖ How does the Information flow in a service process? and how is it different from how it flows in a goods process?

Supply Chain for Physical Goods



Service Supply Bidirectional Relationships



Material transfer ———> Information transfer - - ->

Information

- ❖ Information – a message from a sender to one or more receivers. If information is viewed this way, it need not be accurate. It may be a truth or a lie, or the sound of a kiss. Disruptive noise used to inhibit communication flow & create misunderstanding - a form of information.
- ❖ Measuring information
- ❖ Information – as a pattern such as statistics (information) that represent an economy. “Data” in computing, engineering, and other fields – forms of information in this sense. Signals, signs, & symbols fit this category. Something not “informative” unless it has some degree of utility, value, or meaning.
- ❖ Information is not data – data are raw facts while information is processed data. An important consequence of this distinction is that information has meaning, while data does not.
- ❖ Information – as sensory input
- ❖ Information – as an influence which leads to a transformation