

Vision. Value. You.

Information Systems ISM 3011

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Unit 9C (Chapter 10)

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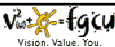

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Reading assignment for Monday

- Read and prepare case studies for chapter 10 (pages 456 – 459)

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Information and Decision Support Systems


Chapter 10

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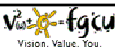

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Decision Making and Problem Solving

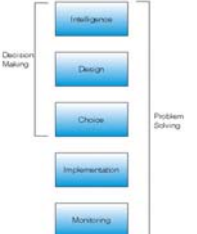


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Decision Making as a Component of Problem Solving



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FIGURE 10-1
How Decision Making Relates to Problem Solving
The three stages of decision making—intelligence, design, and choice—are augmented by implementation and monitoring to result in problem solving.


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Programmed versus Non-programmed Decisions

- Programmed decisions
 - Structured situations with well defined relationships
 - Quantifiable
 - Management information system
 - Easy to computerize
- Non-programmed decisions
 - Rules and relationships not defined
 - Problem is not routine
 - Not easily quantifiable

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Problem Solving Approaches

- **Optimization:** find the best solution
- **Satisficing:** find a good solution
- **Heuristics:** rules of thumb

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An Overview of Management Information Systems



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Inputs to an MIS



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FIGURE 40-3
Sources of Managerial Information
The MIS is just one of many sources of managerial information. Decision support systems, executive support systems, and expert systems also assist in decision making.

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Output of an MIS: Five types of reports

- Scheduled reports
- Key-indicator reports
- Demand reports,
- Exception reports,
- and drill-down reports.

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Scheduled Reports

- Repeatedly generated at a predefined time, e.g. at the end of each week.
- Examples:
 - Weekly payroll summary
 - Monthly sales

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Key-Indicator Reports

- Summarize important numbers, which reflect the overall situation.
- Examples:
 - Sales volume
 - Average margin
 - Percentage of returns, etc.

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Demand Reports

- Generated once the specific information is needed.
- Example: List of past sales to a key customer prior to visiting him

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Output of an MIS

- Exception reports list exceptional events.
- Hybrid report types are possible, e.g. a scheduled key-indicator report.

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Outputs of an MIS

(a) Scheduled Report

Order #	Customer ID	Salesperson ID	Product Ship Date	Quantity	Rate #	Amount
P12451	C00001	SALES	09/11/2001	14.8	P12451	\$2,243.00
P12452	C00001	SALES	09/11/2001	12	P12452	\$1,200.00
P12453	C00001	SALES	09/11/2001	14	P12453	\$1,400.00
P12454	C00001	SALES	09/11/2001	14.8	P12454	\$2,243.00

(b) Key-Indicator Report

Time Month	Last Month	Last Year	
Total Orders Month to Date	\$12,000	\$15,000	\$12,000
Forecasted Sales for the Month	\$12,000	\$15,000	\$12,000

(c) Demand Report

Salesperson ID	Amount
SALES	\$12,000
SALES	\$15,000
SALES	\$12,000

(d) Exception Report

Order #	Customer ID	Salesperson ID	Product Ship Date	Quantity	Rate #	Amount
P12451	C00001	SALES	09/11/2001	14.8	P12451	\$2,243.00
P12452	C00001	SALES	09/11/2001	12	P12452	\$1,200.00
P12453	C00001	SALES	09/11/2001	14	P12453	\$1,400.00
P12454	C00001	SALES	09/11/2001	14.8	P12454	\$2,243.00

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FIGURE 10.4
The five types of reports are (a) scheduled, (b) key-indicator, (c) demand, (d) exception, and (e) hybrid.

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ERP, TPS, MIS: Fuzzy Borders

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“Reports”

- Bad, but common: Printout
- Better: Machine-readable message, which can be used as input for another computer system

Bill of Materials
5 pcs ABC
2 pcs XYZ

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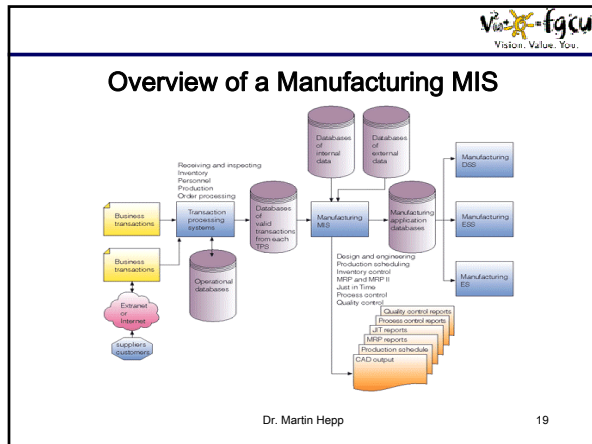
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Functional Aspects of an MIS

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FIGURE 10.5
The MIS is an integrated collection of functional information systems, each supporting particular functional areas.



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Master Production Scheduling and Inventory Control

When and how much to order?

- Economic Order Quantity (EOQ)
- Reorder Point (ROP)
- Material Requirements Planning (MRP)

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MRP – Material Requirements Planning

- Determines the amount of parts needed.
- Demand between products can be interrelated.

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MRP – Input

- Master Production Schedule (MPS)
- Bill of Material (BOM): lists the component part numbers for each part
- Inventory status data

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MRPII – Manufacturing Resource Planning

- Includes requires workstation time, employees, and other resources.
- Capacity restrictions are included in the planning process.

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Characteristics of a DSS

FIGURE 10-14

With a spreadsheet program, a manager can enter a goal, and the spreadsheet will determine the needed input to achieve the goal. (Source: Courtesy of Lotus Development Corporation.)

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Thank you!

The slides will be available on the internet at
<http://ruby.fgcw.edu/courses/mhepp/>
(-> CRN80097)

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