



# What is “Management of I/T”?

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**MoIT**

**ITM**

**IRM**

**MoIA**

**MoIS**



# MoIS?

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- **M** = management =

- Plan
- Organize
- Control
- Implement
  - Delegate
  - Motivate
  - Direct
- Analyze

## EASY?



# MoIS? (continued)

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- **M = NOT EASY! ... Why not?**

- Complexity & unpredictability of
  - Organizations
  - People
  - Industries
  - Economies
  - ...
- External forces, such as
  - Political
  - Technical
  - Sociological
  - ...
- All of it constantly changing
- ...

# FOUR GENERATIONS OF I/T

## ■ 4 Technology Eras *(Dates approximate)*

	1 <sup>ST</sup>	2 <sup>ND</sup>	3 <sup>RD</sup>	4 <sup>TH</sup>
	<u>'46-58</u>	<u>'59-64</u>	<u>'65-71</u>	<u>'71-PRESENT</u>
■ <u>Hardware</u>	Tubes	Transistors	IC	LSI & VLSI
■ <u>Software</u>	Machine	Assembly	3GLs	4GLs
■ <u>Storage</u>	Mag.Drum	Mag.Tape	Mag.Disk	Removeable



# FOUR GENERATIONS OF I/T

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## ■ Trends:

- More usable *Technological Roots?*
- Faster ➤ *Radar*
- Smaller ➤ *Nuclear*
- More capacity ➤ *Phone system*
- More reliability
- Hardware cheaper
- Software cheaper
  - if bought off the shelf
  - but more expensive to custom develop
- "More Bang for the Buck"



# FOUR GENERATIONS OF I/T

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Paralleling these and other developments in I/T, there were developments in the USE of these technologies in organizations...



# FOUR GENERATIONS OF I/T

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- **Management's view**

- is *not* about technology
- is about the USE of technology in organizations!

# FOUR GENERATIONS OF I/T

Technology Era:    1<sup>ST</sup>                      2<sup>ND</sup>                      3<sup>RD</sup>                      4<sup>TH</sup>

'46-58                      '59-64                      '65-71                      '71-...

"Use of" Era:    <-----Computer Era-----> <-----Information Era----->

- |                    |                 |                              |                         |
|--------------------|-----------------|------------------------------|-------------------------|
| ■ Business Focus:  | Back Office     | Front Office                 | The Business            |
| ■ Seen as:         | Cost Center     |                              | Revenue Center          |
| ■ Benefits:        | Efficiency      | Effectiveness                | Competitiveness         |
| ■ Processing Mode: | Batch           | Customers & employees online | Workgroups & Multimedia |
| ■ Leadership:      | Technical       | Managerial                   | Executive (& User)      |
| ■ Management of:   | Data            | Information                  | Knowledge/Expertise     |
|                    | Computer Center | Data/ Information            | Communications          |
|                    | Computer        | Data Center                  | Distributed Systems     |



# IMPACT of I/T – 4 FORCES

Four key trends have driven the evolution of the technologies that are central to the Information Age. These forces characterize these e-times and affect the organizations and industries in which we work, as well as the social and economic milieus in which we live. Understand and anticipate the effects of these four forces, if only a little, and you're likely to succeed. Ignore or overlook their influence only at your peril. The four defining forces of these e-times are:

- **Productivity**: Doing more with less.
- **Velocity**: Increasing the pace of almost everything.
- **Convergence**: Blurring boundaries of all kinds.
- **Brains**: Managing data, information, & knowledge, as well as change.

Leon A. Kappelman, *IS for Managers*, McGraw-Hill, 1993, & "Working In The Global Village" (*InformationWeek*, March 20, 2000, page 150).

# 4 CHARACTERISTICS/IMPACTS OF THE INFORMATION ERA



- **Productivity**: Doing more with less.
  - More efficient, effective, and competitive
  - Automation changes jobs
    - More worker productivity
    - Fewer managers & other workers
      - Wider span of control and/or responsibility
      - Jobs are more complex

# 4 CHARACTERISTICS/IMPACTS OF THE INFORMATION ERA

- **Velocity**: Increasing pace of nearly all.
  - Jobs are more information intense
  - Information overload
  - Lower information float (less time)
  - New industries, technologies, & products emerge
  - Increasing importance of education -- Brains are in
    - Multiple career paths
    - Learning is life long
  - Organizations must respond faster
    - Requires more coordination & flexibility
    - Ambiguous use of terminology (WDYMBT?)
  - Change is the only constant

# 4 CHARACTERISTICS/IMPACTS OF THE INFORMATION ERA

- **Convergence**: Blurring boundaries.
  - Among technologies: voice, data, video, ...
  - Among Industries
  - Between Manufacturing and Service
  - Between old and new
  - Globalization
  - Alliances and Mergers
  - Centralized - Decentralized Organization

# 4 CHARACTERISTICS/IMPACTS OF THE INFORMATION ERA

- **Brains**: Managing data, information, & knowledge, as well as change.
  - **Brains are in** (see notes under “Velocity”)
  - **Management of Information**
    - is about new products and services
    - is a new business function
    - is sometimes a new business
    - is sometimes a new industry



# MoIS? (continued)

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- I = information =
  - Data (i.e., facts) with
    - Meaning
    - Relevance
    - Purpose

# MoIS? (continued)

■ **ISs** = information systems =

- {Many ways to define}
- {Many different levels of abstraction}
- Singular: **1** IS, program, application, ...
  - **j** programs = application
  - **j** applications = IS
  - **j** ISs = IAoO = "MIS" = Federation of Systems
- In terms of **functions**:
  - GSM = I, P, O, S
- In terms of **components**:
  - H, S, D, P, P

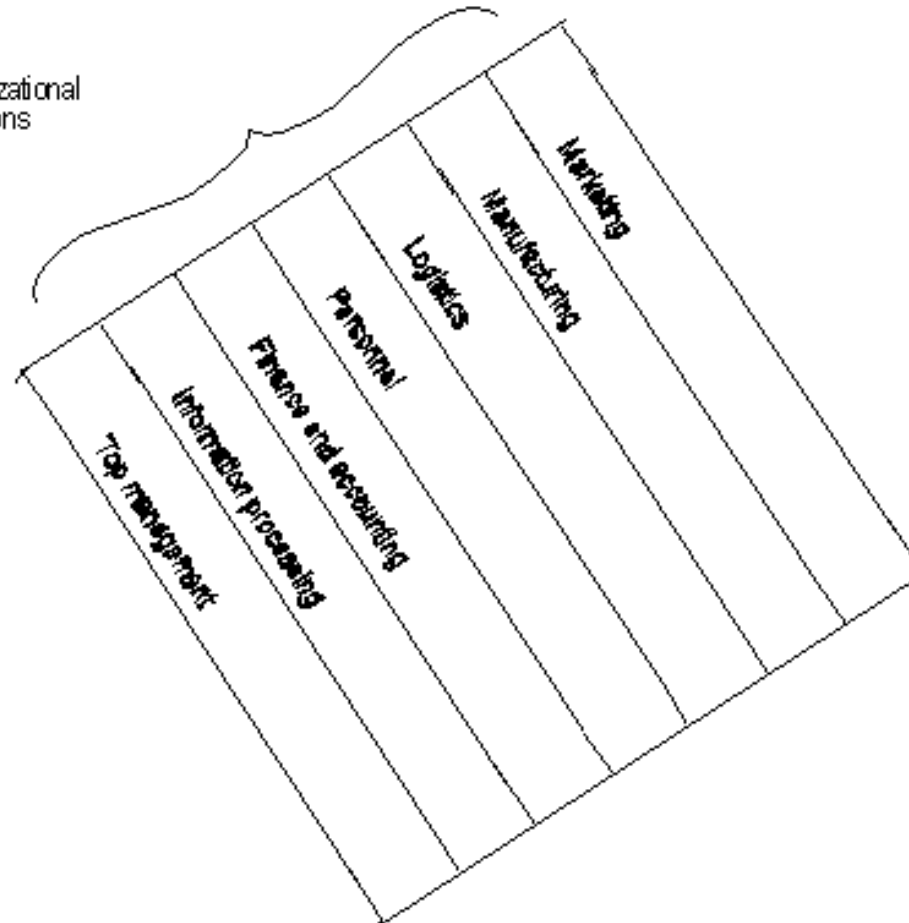
# MoIS? (continued)

**ISs** = (continued)

- In terms of **architecture**:
  - H, A, D, P, C
- In terms of **role** in the organization =
  - **Support of** organizational **functions** or processes
  - “Slices” of the organization
    - Marketing
    - Manufacturing
    - Top management
    - Logistics
    - Marketing
    - Finance
    - Accounting
    - I/S
    - ...

# Organizational Functions

Organizational  
Functions





# MoIS? (continued)

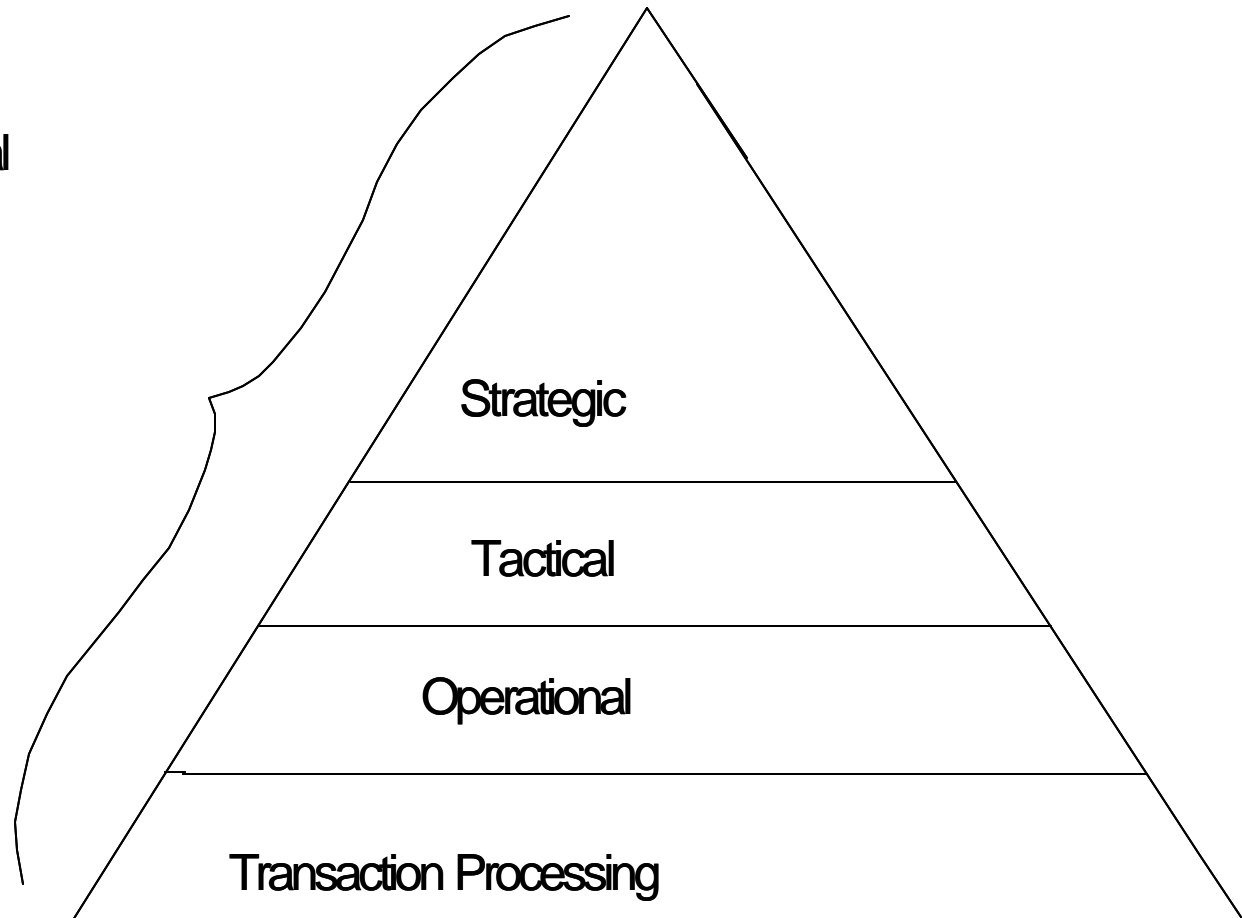
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## ■ ISS = (continued)

- In terms of **organizational activities** or **levels of management**:
  - Operational
  - Tactical
  - Strategic

# Organizational Activities (aka "levels of management")

Organizational  
Activities

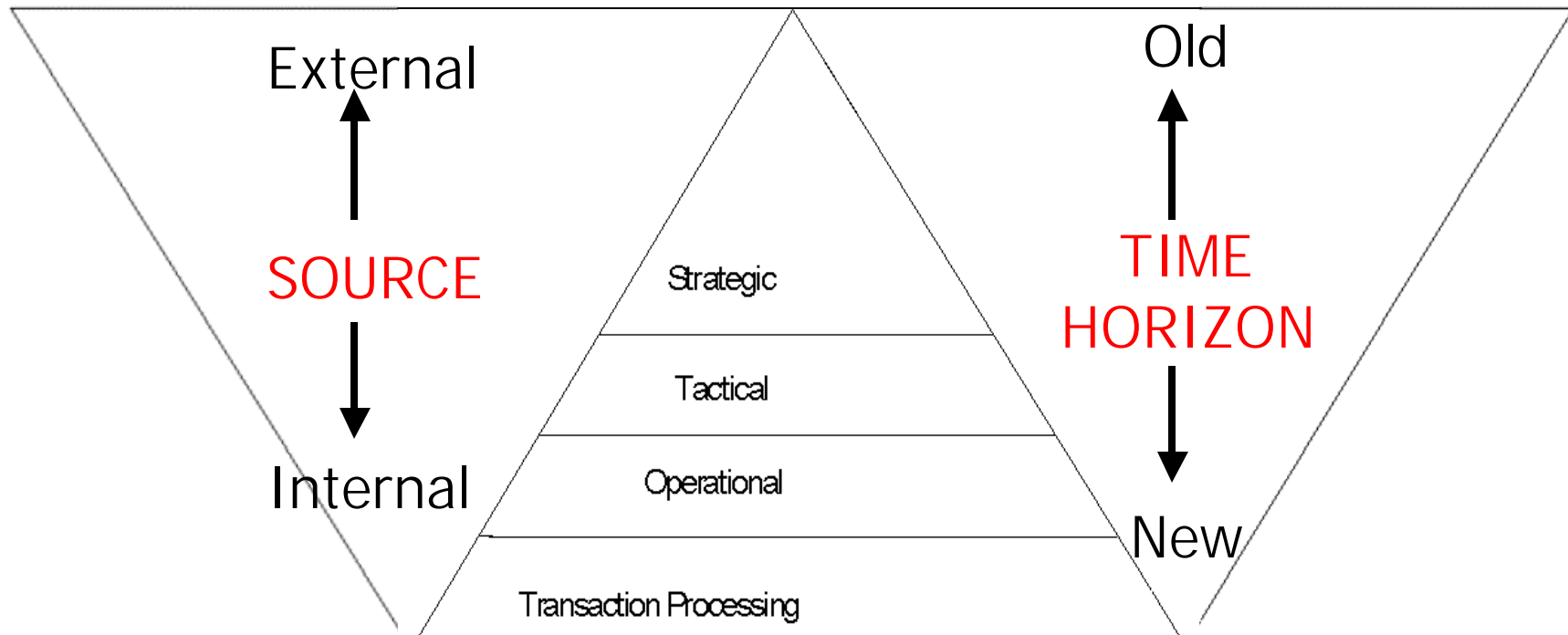


# MoIS? (continued)

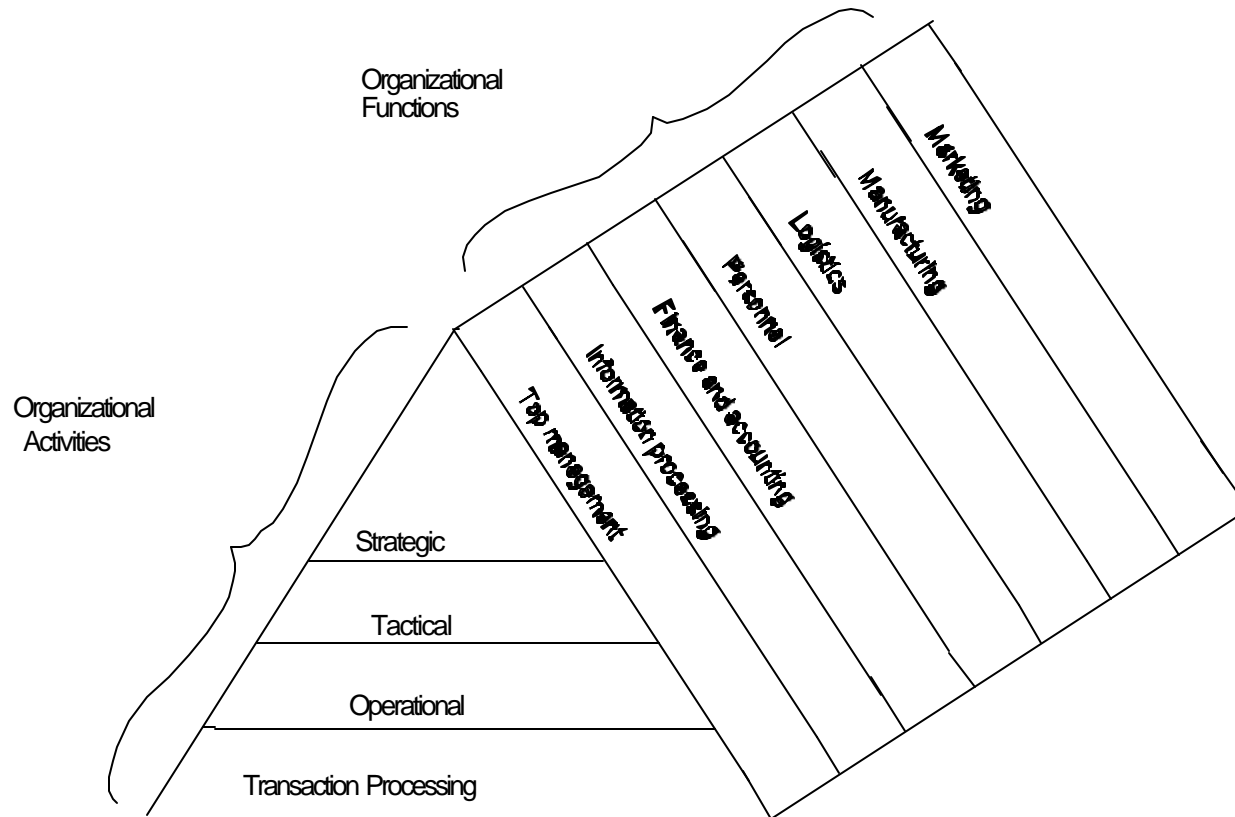
## ■ ISs = (continued)

- In terms of **organizational activities**
  - or **levels of management**: (continued)
    - Strategic
    - Tactical
    - Operational
  - Information needs vary by activity (i.e., type of information needed varies):
    - Source: internal v. external
    - Aggregation: details v. summaries
    - Planning horizon: long- v. short-term
    - Time horizon: historical v. future
    - ...

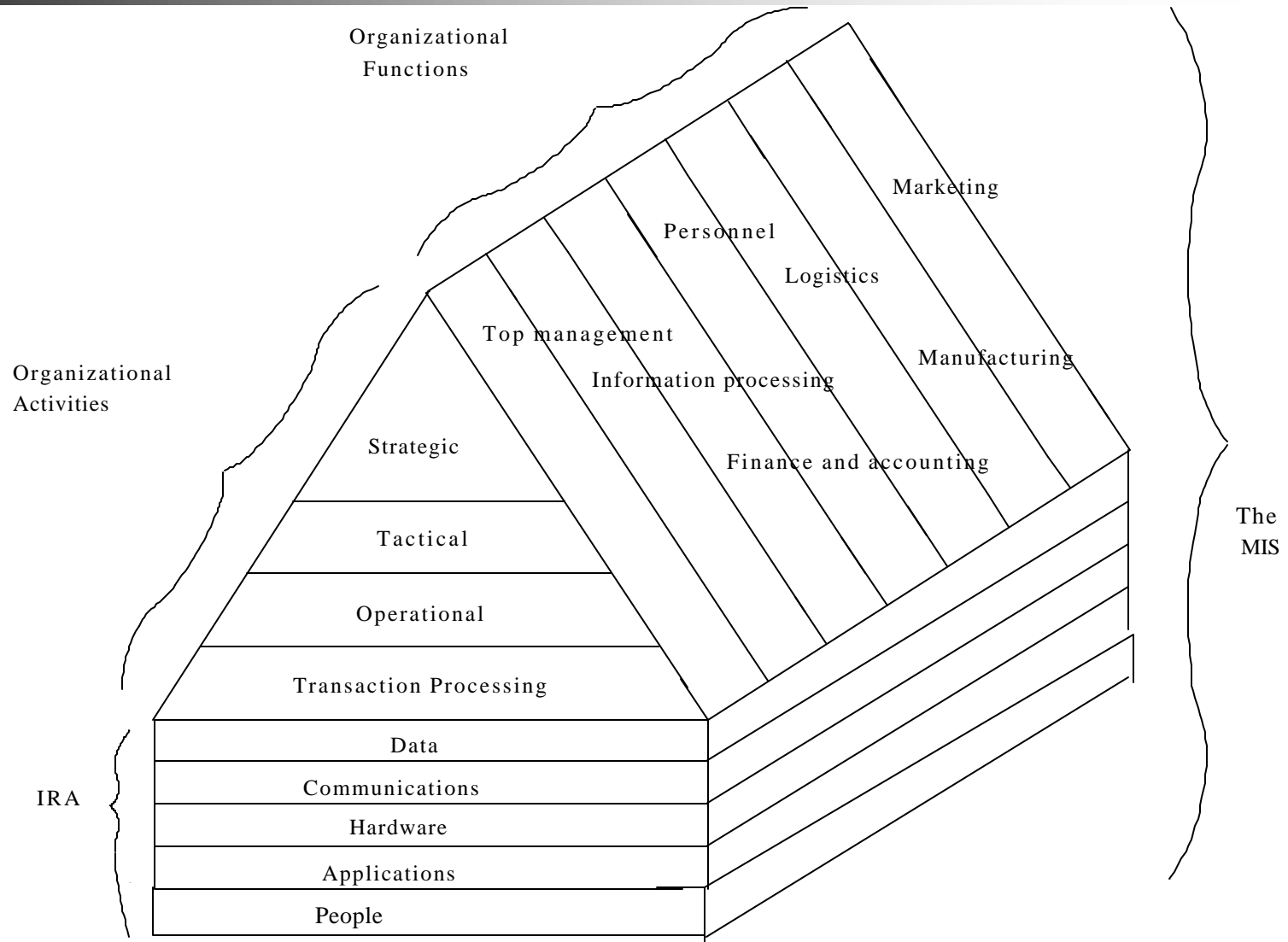
# Organizational Activities



# Activities & functions combined



# Information Assets of the Org.





# “Structure” of IS Department

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- **Driven by:**

- Architecture
  - Technology = “what we manage”
- Organization = “‘who’ we manage IT for”
  - Org. Culture
  - Management
  - Industry
  - ...

# "Structure" of IS Department

