Chapter 1:
Role of IS/IT in Organizations

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Ward & Peppard (2003)

Course Objective

- Able to evaluate several IS/IT strategies to achieve business objectives
- Understand the potential & strategic use of information technology to organization & banking industry
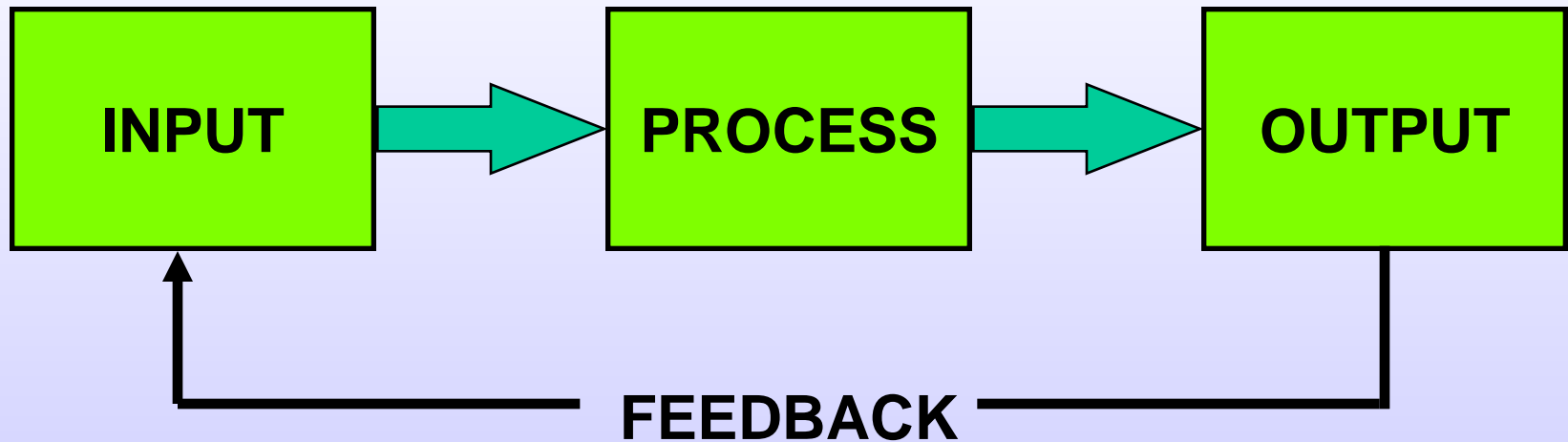- Understand the aspects of managing IS/IT from CIO's perspective
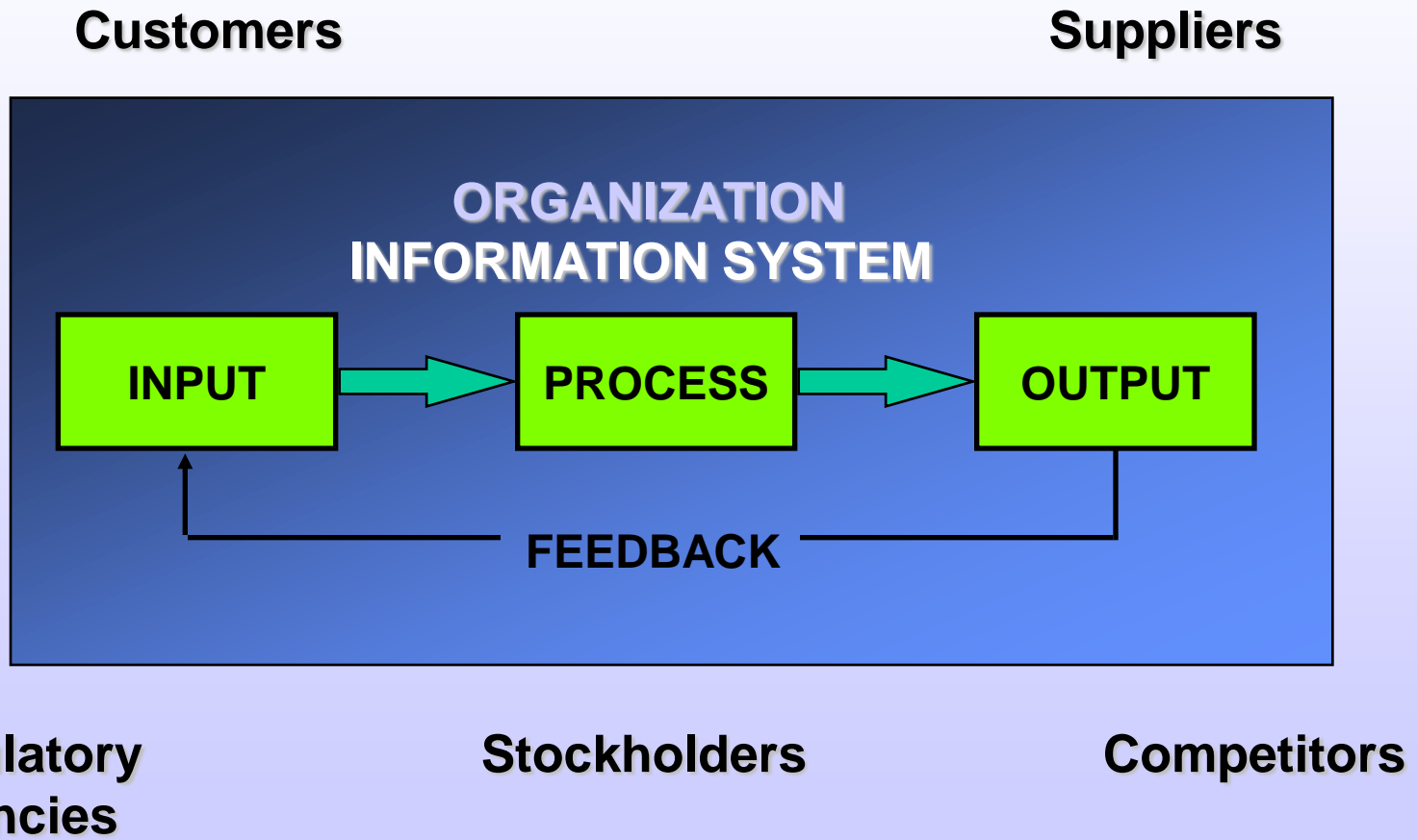
Course Outline

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Perbedaan

- Sistem Informasi?

- Teknologi Informasi?

- Application: the use of IT to address a specific business process. Maybe custome tailored, maybe generic.

- Why some organization fail to realize any benefit from IT investment?

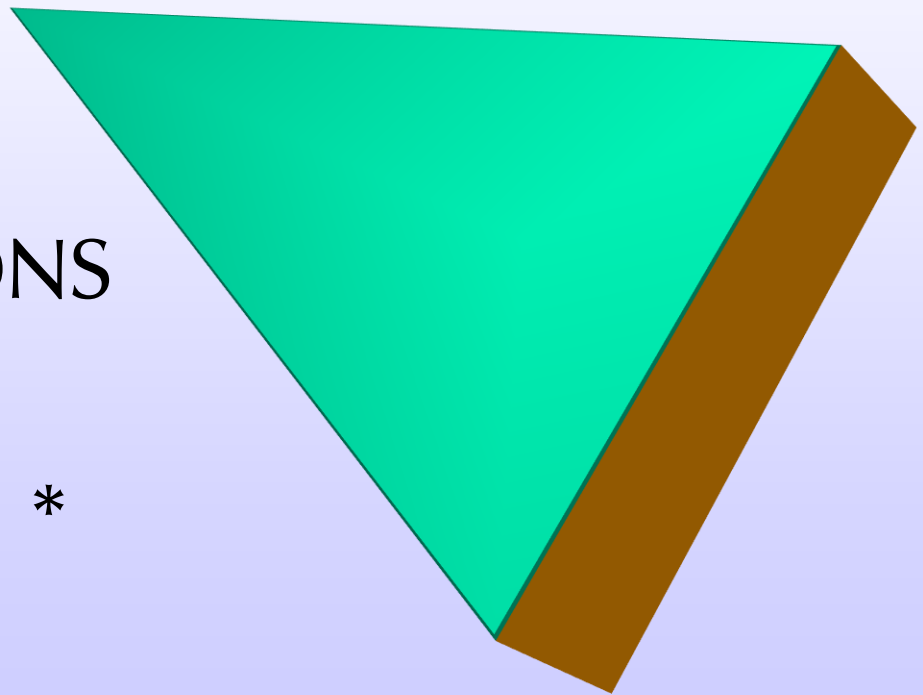# COMPUTER-BASED INFORMATION SYSTEMS (CBIS)

- FORMAL SYSTEMS

- FIXED DEFINITIONS OF DATA, PROCEDURES

- COLLECTING, STORING, PROCESSING, DISSEMINATING, USING DATA

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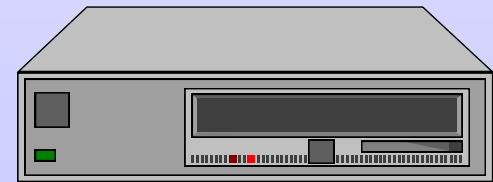
COMPUTER TECHNOLOGY

- HARDWARE
- SOFTWARE
- STORAGE
- COMMUNICATIONS
- NETWORK

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Demam "e-"

- E-business
- E-commerce
- Lantas apa bedanya dengan SI/TI? Adakah perbedaan dalam cara mengelolanya?
- Yang membuat Internet signifikan:
  - Pervasive
  - Interactive
  - Media penghubung banyak pihak

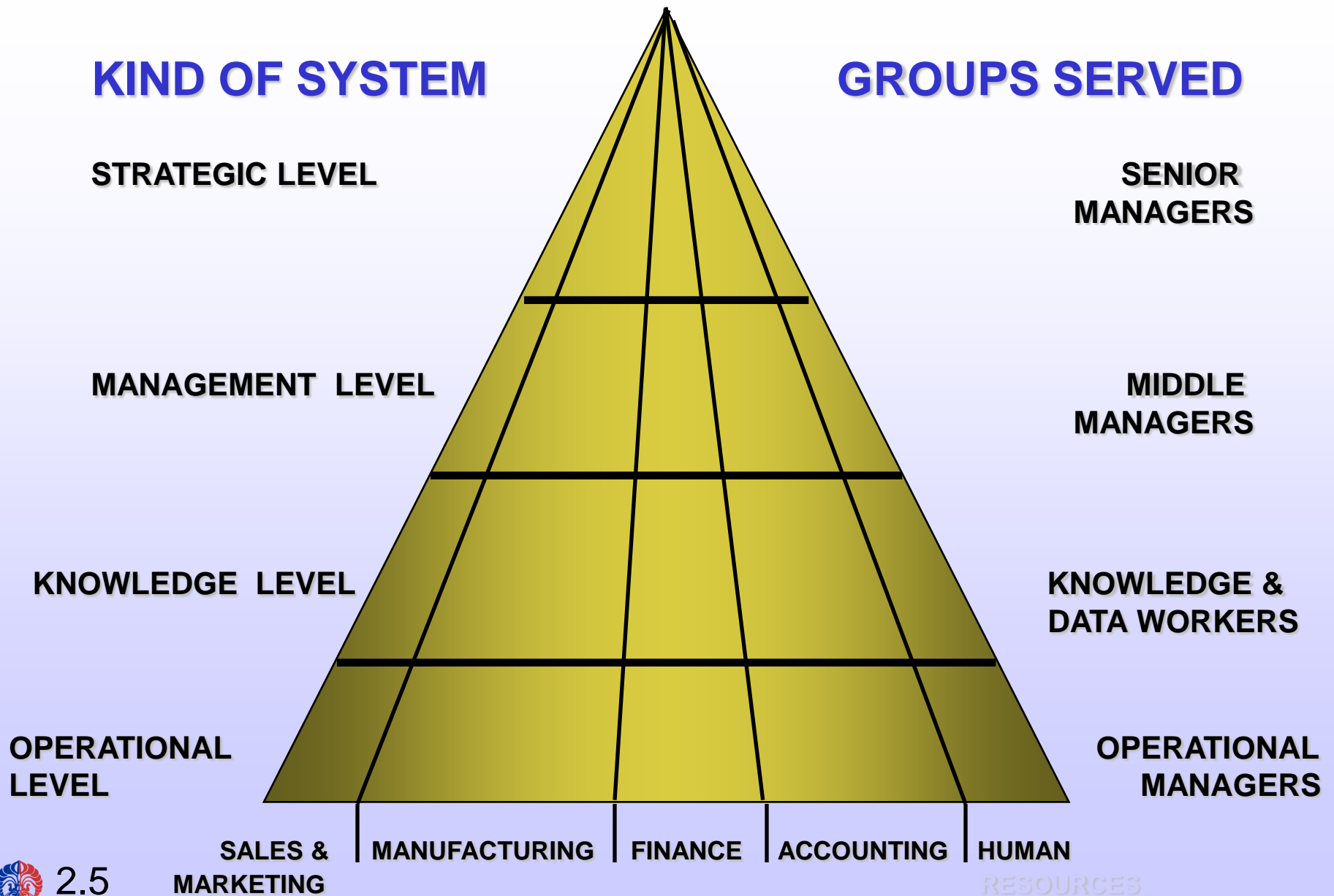# SCOPE OF INFO SYSTEMS

- 1950s: TECHNICAL CHANGES
- 60s-70s: MANAGERIAL CONTROL
- 80s-90s: INSTITUTIONAL CORE ACTIVITIES

GROWING IMPORTANCE

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MAJOR TYPES OF SYSTEMS

- EXECUTIVE SUPPORT SYSTEMS (ESS)

- MANAGEMENT INFORMATION SYSTEMS (MIS)

- DECISION SUPPORT SYSTEMS (DSS)

- KNOWLEDGE WORK SYSTEMS (KWS)

- OFFICE AUTOMATION SYSTEMS (OAS)

- TRANSACTION PROCESSING SYSTEMS (TPS)

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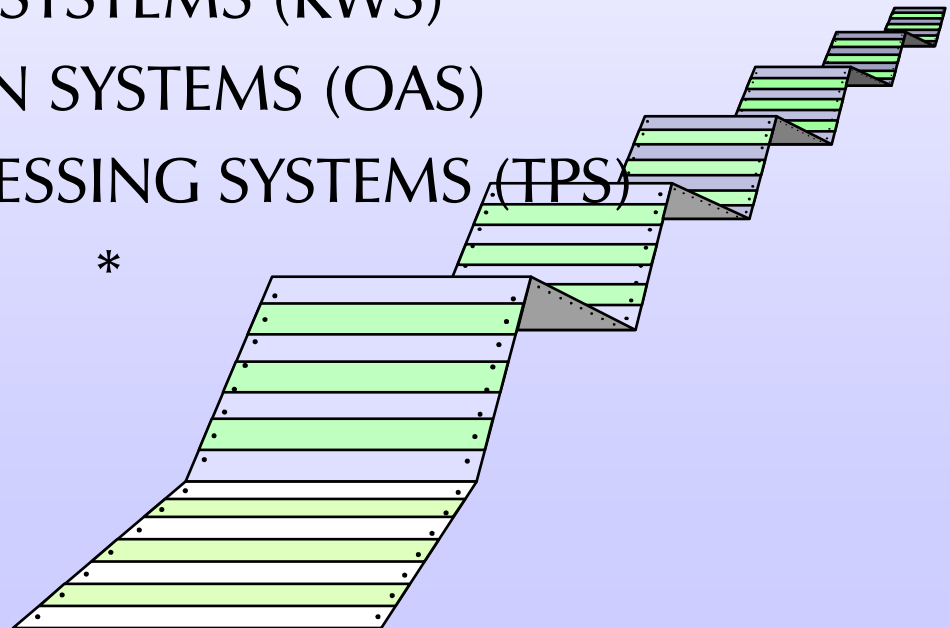
TRANSACTION PROCESSING SYSTEMS (TPS)

- Dimulai pada zaman "Data Processing"
- OPERATIONAL LEVEL
- INPUTS: TRANSACTIONS, EVENTS
- PROCESSING: UPDATING
- OUTPUTS: DETAILED REPORTS
- USERS: OPERATIONS PERSONNEL

EXAMPLE: ACCOUNTS PAYABLE
TPS

MANAGEMENT INFORMATION SYSTEMS (MIS)

- MANAGEMENT LEVEL
- INPUTS: HIGH VOLUME DATA
- PROCESSING: SIMPLE MODELS
- OUTPUTS: SUMMARY REPORTS
- USERS: MIDDLE MANAGERS

EXAMPLE: ANNUAL BUDGETING

MANAGEMENT INFORMATION SYSTEMS (MIS)

- STRUCTURED & SEMI-STRUCTURED DECISIONS
- REPORT CONTROL ORIENTED
- PAST & PRESENT DATA
- INTERNAL ORIENTATION
- LENGTHY DESIGN PROCESS

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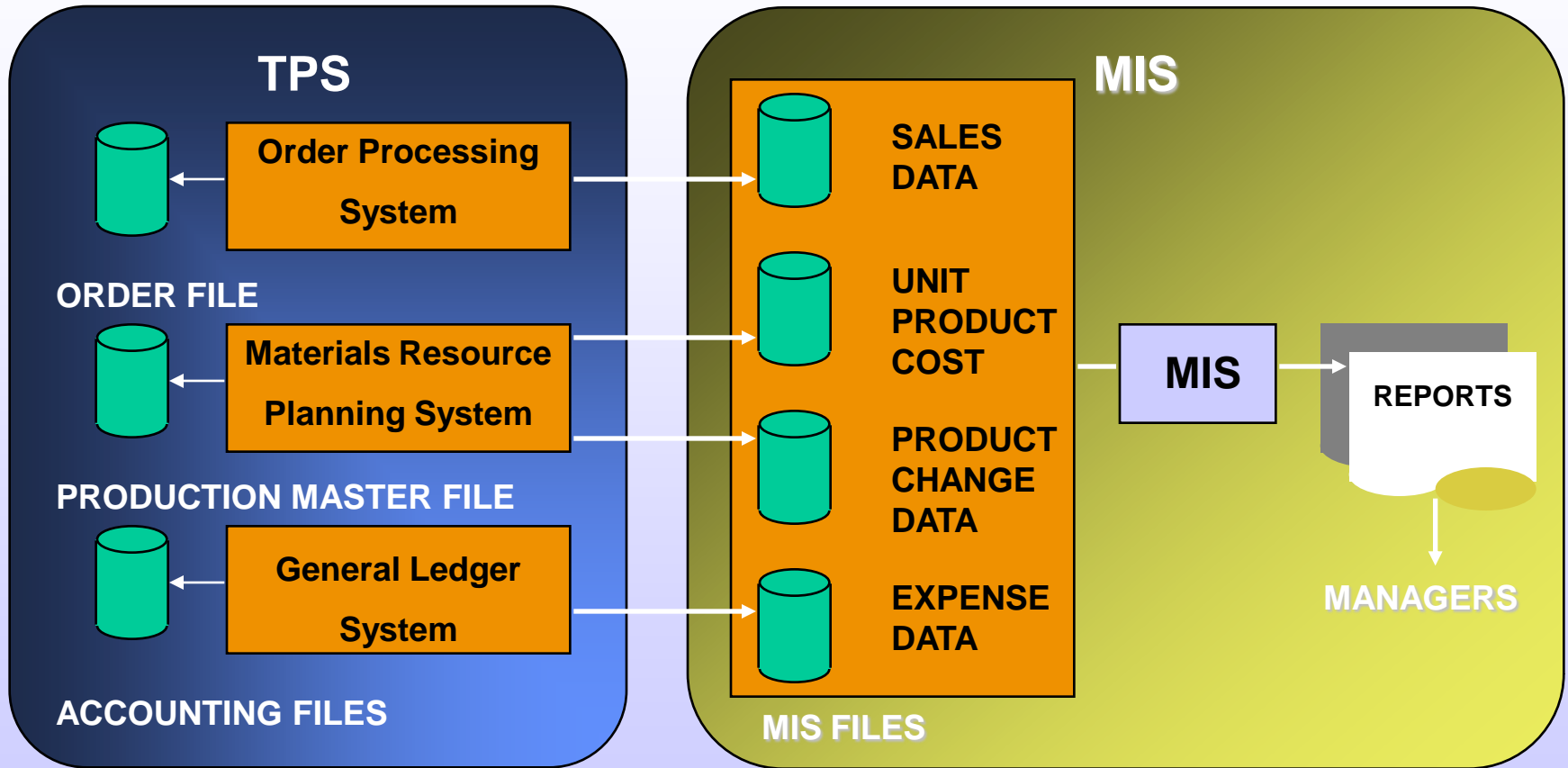
Perbedaan DP dan MIS

	TPS/DP	MIS
Objectives	Efficient transaction	Effective problem resolution & decision making support
Information sources	Internal & external transaction	Internal & external transaction + research data
Information time frame	Recent history, current & near future	Historical data, current & future
Process	Algorithmic (very predefined)	Sometimes need human intervention (esp. for decision making)
Users	Operators	Professionals & middle managers
Technology	Mainframe/mini computers	Local processing linked to information resources

Lessons from DP era

- Understanding process, not just programming
- Requirement analysis is important
- IT investment financial justification
- Disciplined software engineering process
- Project management in software development
- Planning of interrelated set of systems in organization

Lessons from MIS era

- IS/IT investment can not be justified only in financial means

- The need for organizational policy (not just DP methodology)

- From producing data to serving users

- Data integration is important: using very large database

Strategic IS/IT Management

Difference with 'traditional IT' management:

- External factors has significant pressure on the IS/IT management, not just internal factors
- Senior management is involved in making IS/IT investment decision that will drive organization's future business strategy
- IMPROVE COMPETITIVENESS BY CHANGING THE NATURE / CONDUCT OF BUSINESS

Strategic systems

- Connection to supplier & customer
- Effective use of information in the value adding process
- Enable to deliver new product/service
- Provide executive with strategic information

Revolutionary use of IT

- Business process redesign
- Business network redesign
- Business scope redefinition

Success factors in strategic IS

- External, not just internal focus
- Adding value, not cost reduction
- Sharing the benefits: internally, with supplier & customer
- Business driven not technology driven
- Incremental development
- Use information to develop business

Business, IS & IT Relationship

External & Internal Factors

Business Strategy
• Business decisions
• Objectives and direction
• Change

Where is the business going & why?

Supports business

Direction for business

IS Strategy
• Business based
• Demand orientation
• Application focused

What is required?

Infrastructure & service

Needs & priorities

IT Strategy
• Activity Based
• Supply oriented
• Technology focused

How can it be realized?

- Focusing on technology does not lead to success

- Must consider IT as part of the business solution

- Should be business driven!

- IS/IT strategy must also consider strategies of other functional units

Pertanyaan

- Apa perbedaan dari:
  - Strategic Information System, dengan
  - Information System Strategy?

Definitions

- IS strategy defines the organization's requirement or 'demand' for information & systems to support the overall strategy of the business. It includes what applications to develop in the future.
  - Defines *applications portfolio* along with its priority
- IT strategy is concerned with outlining *how* the organization's IS demand will be supported by the <u>technology</u> ('supply')
  - IT architecture, systems development, infrastructure, user support, operations, etc…
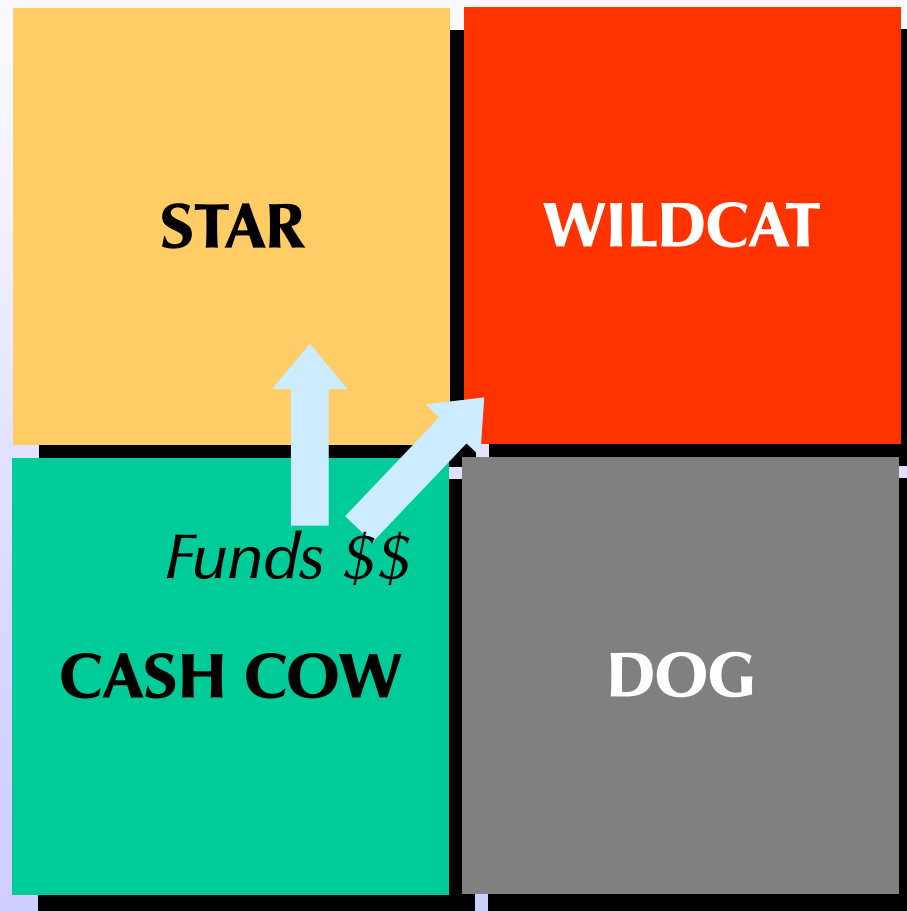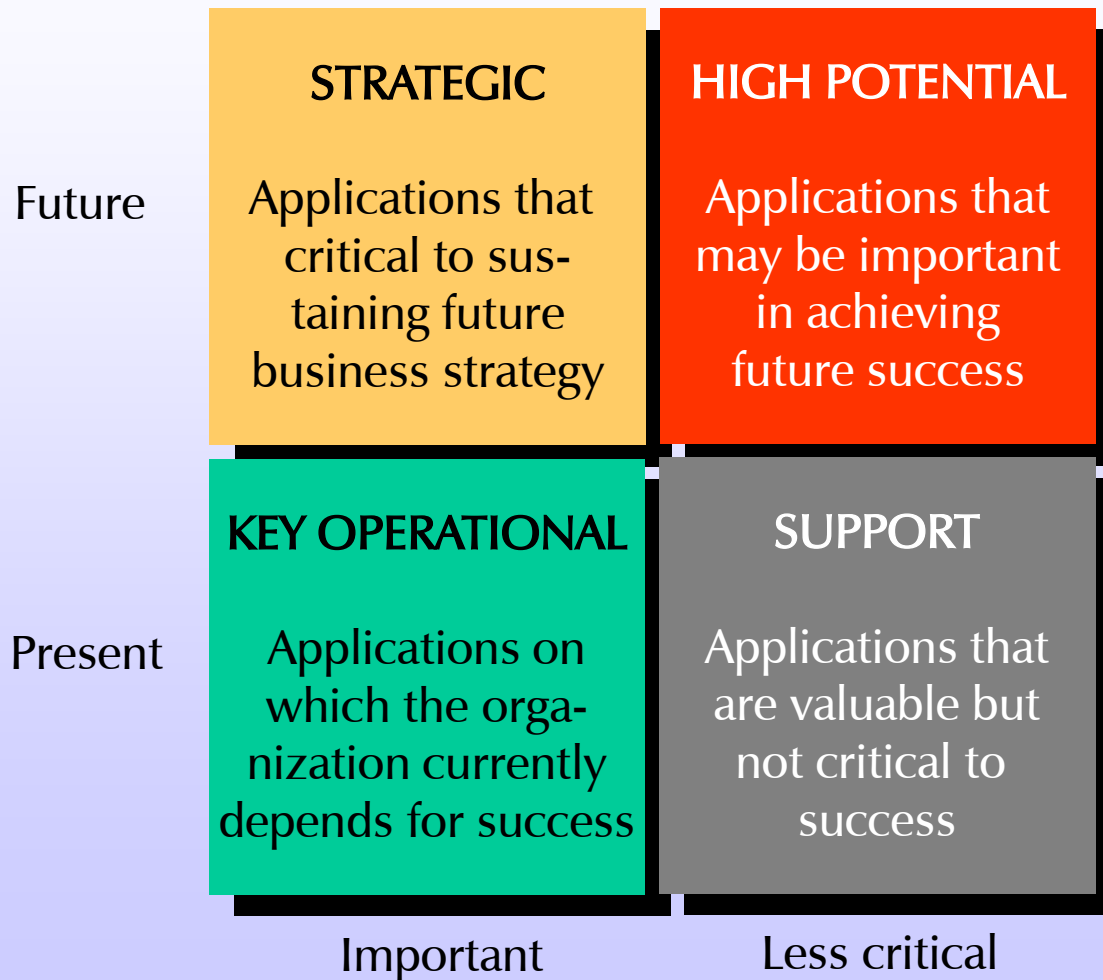
Definitions

- Strategic IS:
  - Adalah sistem informasi yang dipakai perusahaan untuk mendukung pencapaian keunggulan kompetitif mereka.

Understanding the
Boston Consulting Group (BCG) Matrix

STAR	WILDCAT
Funds $$	
CASH COW	DOG

The IS Application Portfolio

	Important	Less critical
Future	**STRATEGIC** Applications that critical to sustaining future business strategy	**HIGH POTENTIAL** Applications that may be important in achieving future success
Present	**KEY OPERATIONAL** Applications on which the organization currently depends for success	**SUPPORT** Applications that are valuable but not critical to success

Closely related and derived from "McFarlan Matrix"

Failures from not having IS/IT strategy

- Systems not integrated
- Poor management information: not readily available, inconsistent, inaccurate, too slow
- Misunderstand between users and IT specialist
- Technology strategy incoherent
- Inadequate infrastructure investment
- Localized justification of IT investment can result in inefficiency of overall business context
- Systems has shorter than expected usage

External Context of IT

Business Environment & Competitions in Industry

The Organization

Information Technology

Impact of competitor's strategy

Provides novel opportunities

Redefines

Supports

Disrupts

IT Innovations