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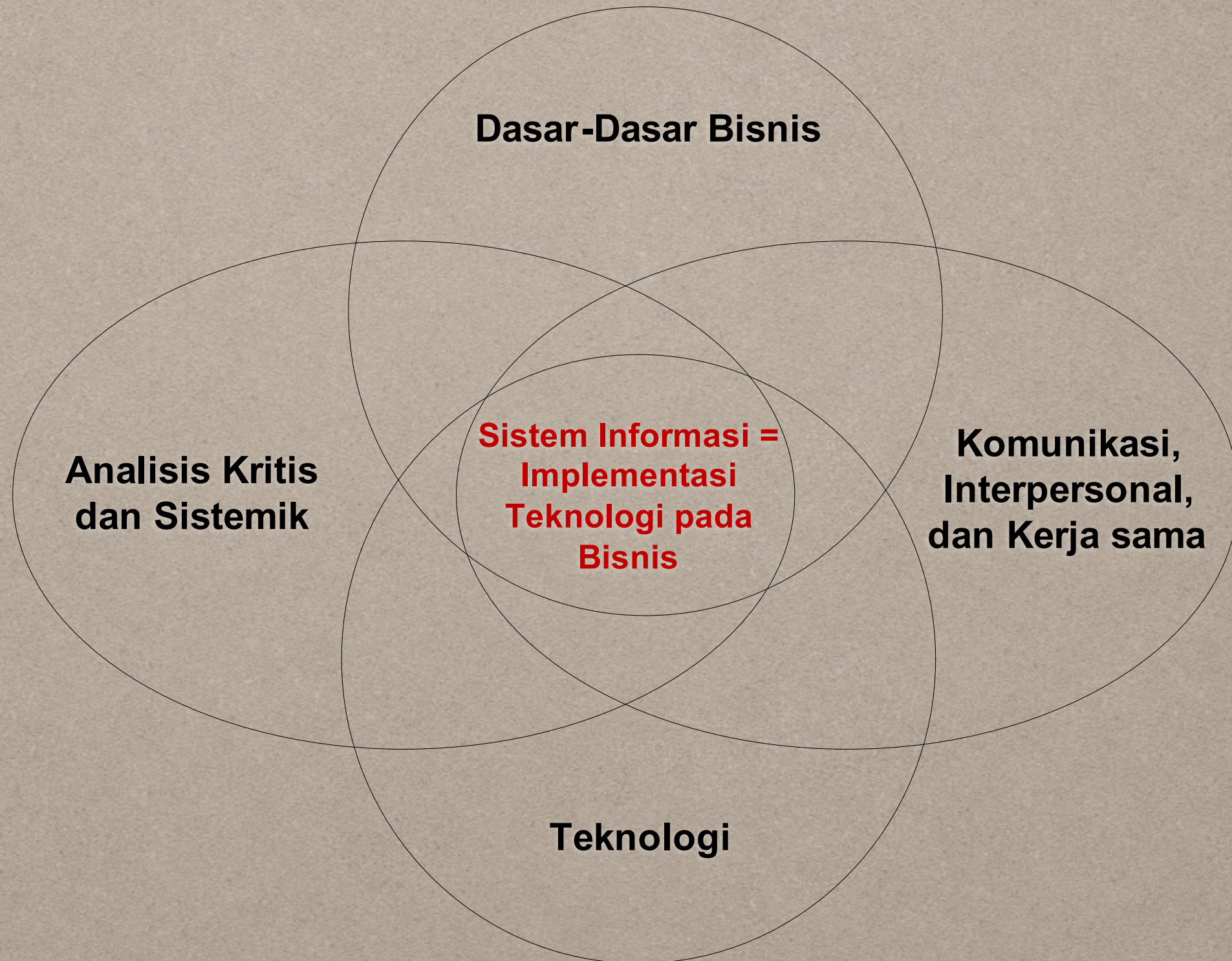# PENGANTAR SISTEM INFORMASI ISH1A3

PROGRAM STUDI SISTEM INFORMASI
FAKULTAS REKAYASA INDUSTRI
TELKOM UNIVERSITY

OUTLINE

1. Mengapa kita harus mempelajari SI ?

2. Gambaran umum SI berbasis Komputer.

3. Bagaimana dampak Organisasi TI?

4. Pentingnya SI bagi masyarakat.

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DOMAIN BELAJAR

Dasar-Dasar Bisnis

Analisis Kritis dan Sistemik

Sistem Informasi = Implementasi Teknologi pada Bisnis

Komunikasi, Interpersonal, dan Kerja sama

Teknologi

KEY CONCEPTS

Teknologi Informasi (TI) mengacu pada *tools* berbasis komputer yang digunakan orang untuk bekerja dengan informasi serta untuk mendukung informasi dan pemrosesan informasi kebutuhan organisasi.

Sistem Informasi (SI) mengumpulkan, memproses, menyimpan, menganalisa, dan menyebarkan informasi untuk tujuan tertentu.

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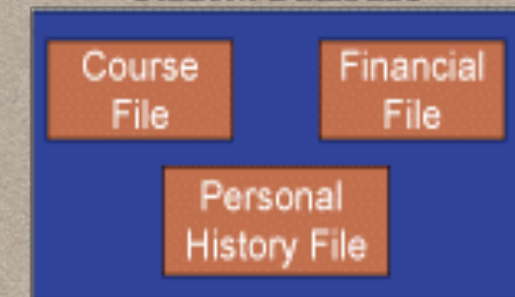# HIRARKI DATA

* Bit
    * Unit terkecil dari data
* Byte
    * Kelompok bit yang menggambarkan karakter
* Field
    * Kumpulan karakter secara logik yang terbentuk ke dalam kata, kumpulan kata atau kumpulan angka
* Record
    * kumpulan field yang saling berhubungan secara logical
* Table
    * Kumpulan dari beberapa record yang saling terhubung secara logical
* File
    * Kumpulan dari beberapa tabel yang dikelompokkan berdasarkan kategori tertentu
    * Database
    * kumpulan file yang saling terhubung secara logical

Hierarchy

Database

File

Record

Field

Byte

Bit
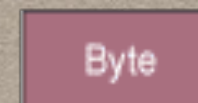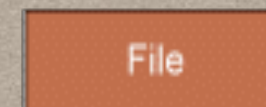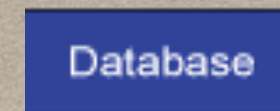
Example
Student Database

Course File | Financial File

Personal History File

Course File

NAME	COURSE	DATE	GRADE
John Stewart	IS 101	F01	B+
Karen Taylor	IS 101	F01	A
Emily Vincent	IS 101	F01	C

NAME	COURSE	DATE	GRADE
John Stewart	IS 101	F01	B+

John Stewart (NAME field)

01001010 (Letter J in ASCII)

0

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DATA-INFORMATION-KNOWLEDGE

- Data
  - Deskripsi dasar dari berbagai hal, kejadian, kegiatan, dan transaksi yang dicatat, diklasifikasikan, dan disimpan, tetapi tidak diorganisasikan untuk menyampaikan makna tertentu

- Information
  - Data yang telah diolah sehingga mereka memiliki arti dan bernilai bagi penerimanya

- Knowledge
  - Informasi yang telah diorganisir dan diproses untuk menyampaikan pemahaman, pengalaman, dan keahlian yang diterapkan pada masalah atau kegiatan saat ini

- Wisdom
  - Penerapan sekumpulan knowledge pada suatu kegiatan

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CONTOH

Data	Information	Knowledge
[No context]		**[University context]**
3.16	3.16 + John Jones = GPA	* Job prospects
2.92	2.92 + Sue Smith = GPA	* Graduate school prospects
1.39	1.39 + Kyle Owens = GPA	* Scholarship prospects
3.95	3.95 + Tom Elias = GPA	
[No context]		**[Professional baseball pitcher context]**
3.16	3.16 + Ken Rice = ERA	
2.92	2.92 + Ed Dyas = ERA	* Keep pitcher, trade pitcher, or send pitcher to minor leagues
1.39	1.39 + Hugh Carr = ERA	* Salary/contract negotiations
3.95	3.95 + Nick Ford = ERA	

GPA = grade point average (higher is better)

ERA = earned run average (lower is better); ERA is the number of runs per nine innings that a pitcher surrenders

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WHY SHOULD I STUDY INFORMATION SYSTEMS?

- You will:
- Memahami apa yang ada "di balik" aplikasi mereka.
- Dapat memberikan masukan terhadap aplikasi TI organisasi kita, sehingga meningkatkan kualitas aplikasi tersebut.
- Merekomendasikan atau berpartisipasi pada pemilihan aplikasi TI yang akan digunakan oleh sebuah organisasi.
- Dapat mengikuti perkembangan yang pesat dalam teknologi informasi yang ada, serta mengenal teknologi baru.
- Memahami dampak potensial dari teknologi yang "baru dan lebih baik" yang akan dimiliki organisasi dengan mengelompokkannya untuk membuat rekomendasi mengenai adopsi dan penggunaannya.
- Memainkan peran kunci dalam mengelola sistem informasi dalam organisasi Anda.
- Berada dalam posisi untuk menggunakan TI jika memutuskan untuk memulai bisnis sendiri.

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IT JOBS

Position	Job Description
Chief Information Officer	Highest-ranking IS manager; is responsible for all strategic planning in the organization
IS Director	Manages all systems throughout the organization and the day-to-day operations of the entire IS organization
Information Center Manager	Manages IS services such as help desks, hot lines, training, and consulting
Applications Development Manager	Coordinates and manages new systems development projects
Project Manager	Manages a particular new systems development project
Systems Manager	Manages a particular existing system
Operations Manager	Supervises the day-to-day operations of the data and/or computer center
Programming Manager	Coordinates all applications programming efforts
Systems Analyst	Interfaces between users and programmers; determines information requirements and technical specifications for new applications
Business Analyst	Focuses on designing solutions for business problems; interfaces closely with users to demonstrate how IT can be used innovatively
Systems Programmer	Creates the computer code for developing new systems software or maintaining existing systems software
Applications Programmer	Creates the computer code for developing new applications or maintaining existing applications

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IT JOBS

Emerging Technologies Manager	Forecasts technology trends; evaluates and experiments with new technologies
Network Manager	Coordinates and manages the organization's voice and data networks
Database Administrator	Manages the organization's databases and oversees the use of database-management software
Auditing or Computer Security Manager	Oversees the ethical and legal use of information systems
Webmaster	Manages the organization's World Wide Web site
Web Designer	Creates World Wide Web sites and pages

OVERVIEW OF COMPUTER BASED INFORMATION SYSTEMS

Hardware terdiri dari perangkat seperti prosesor, monitor, keyboard, dan printer. Secara bersama-sama, perangkat ini menerima, proses, dan menampilkan data dan informasi.

Software adalah program atau kumpulan program yang memungkinkan perangkat keras untuk mengolah data.

Network adalah sistem yang menghubungkan (wireline/wireless) dan memungkinkan komputer yang berbeda untuk berbagi sumber daya.
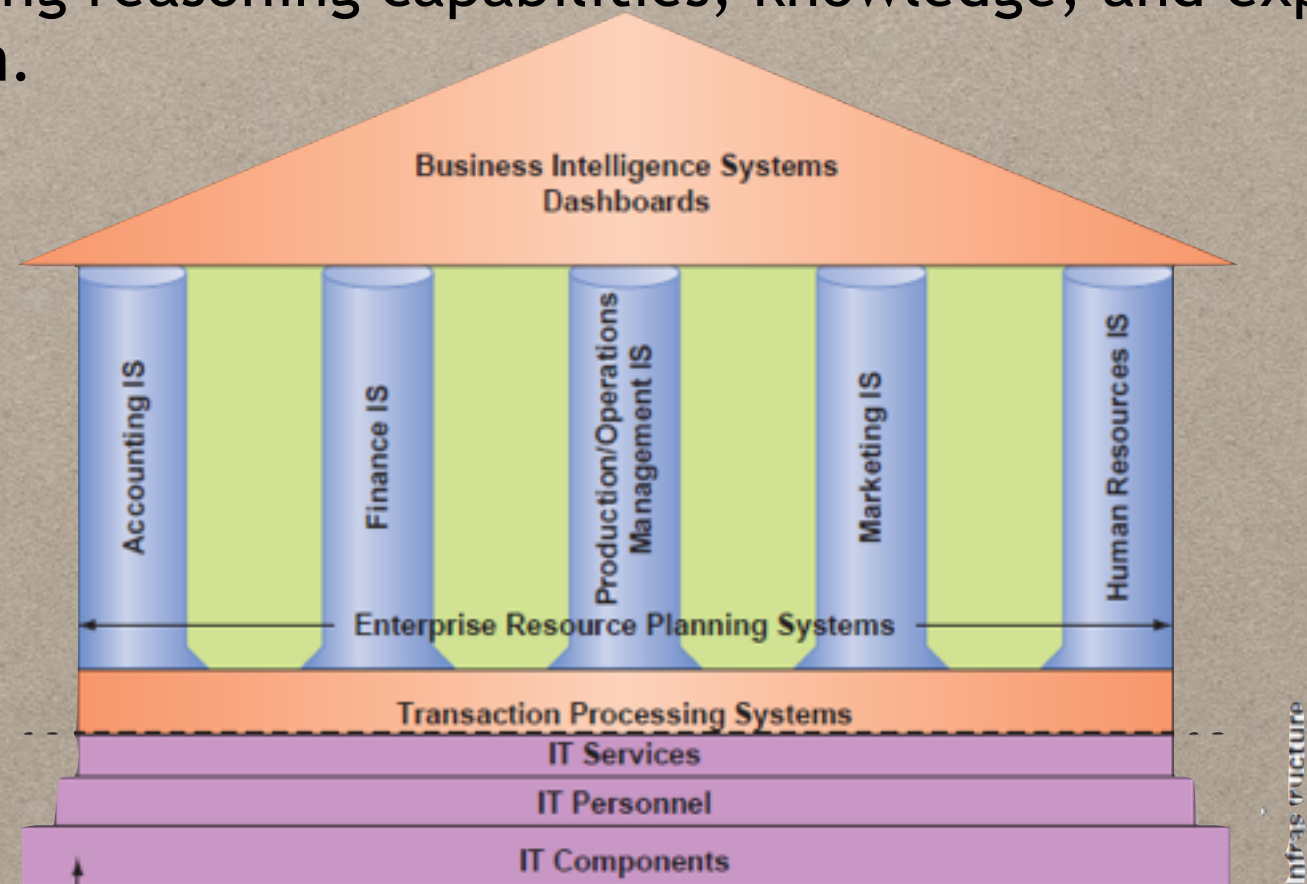
Database adalah kumpulan file yang saling terkait atau tabel yang berisi data.

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OVERVIEW OF COMPUTER BASED INFORMATION SYSTEMS

1. **TPS** mendukung pemantauan, pengumpulan, penyimpanan, dan pengolahan data dari transaksi bisnis dasar organisasi, yang masing-masing menghasilkan data.

2. **FAISs** mendukung area fungsional tertentu dalam organisasi.

3. **IOSs** mendukung beberapa operasi interorganizational, menggunakan supply chain management terbaik.

4. **ERP** sistem yang memperbaiki kekurangan komunikasi antara FAISs dengan mengintegrasikan area fungsional ISs melalui common database.

5. **e-Commerce** systems enable organizations to conduct transactions with other organizations (called business-to-business (B2B) electronic commerce), and with customers (called business-to-consumer (B2C) electronic commerce).

6. **OASs** typically support the clerical staff, lower and middle managers, and knowledge workers, by enabling them to develop documents (word processing and desktop publishing software), schedule resources (electronic calendars), and communicate (e-mail, voice mail, videoconferencing, and groupware).

OVERVIEW OF COMPUTER BASED INFORMATION SYSTEMS

1. **Business intelligence (BI)** systems provide computer-based support for complex, nonroutine decisions, primarily for middle managers and knowledge workers.

2. **Expert systems (ESs)** attempt to duplicate the work of human experts by applying reasoning capabilities, knowledge, and expertise within a specific domain.

Business Intelligence Systems Dashboards

Accounting IS

Finance IS

Production/Operations Management IS

Marketing IS

Human Resources IS

Enterprise Resource Planning Systems

Transaction Processing Systems

IT Services

IT Personnel

IT Components

IT Infrastructure

IT Platform

IT inside your organization.

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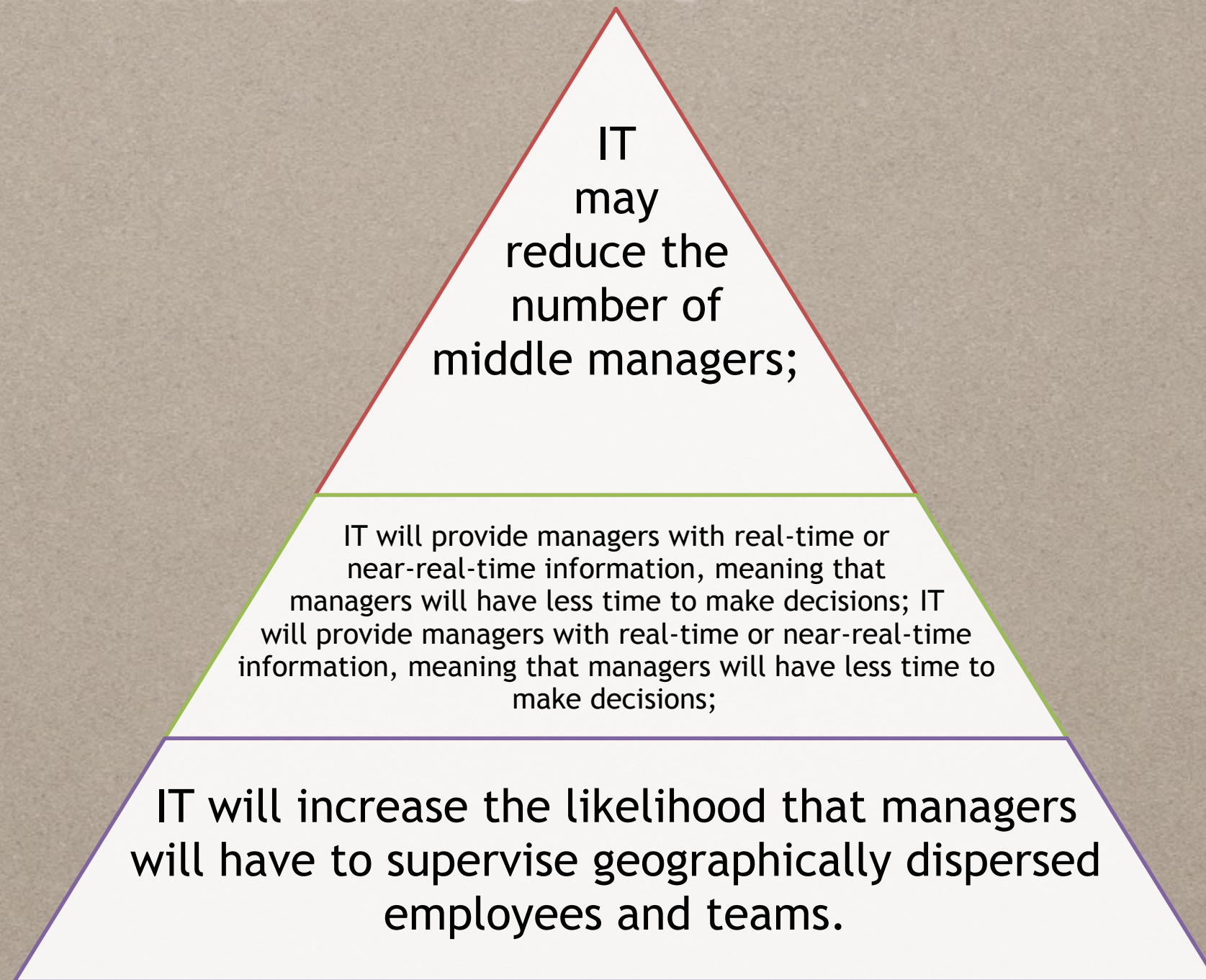# TYPES OF ORGANIZATIONAL INFORMATION SYSTEMS

Type of System	Function	Example
Functional area IS	Supports the activities within specific functional area.	System for processing payroll
Transaction processing system	Processes transaction data from business events.	Walmart checkout point-of-sale terminal
Enterprise resource planning	Integrates all functional areas of the organization.	Oracle, SAP system
Office automation system	Supports daily work activities of individuals and groups.	Microsoft® Office
Management information system	Produces reports summarized from transaction data, usually in one functional area.	Report on total sales for each customer
Decision support system	Provides access to data and analysis tools.	"What-if" analysis of changes in budget
Expert system	Mimics human expert in a particular area and makes decisions.	Credit card approval analysis
Executive dashboard	Presents structured, summarized information about aspects of business important to executives.	Status of sales by product
Supply chain management system	Manages flows of products, services, and information among organizations.	Walmart Retail Link system connecting suppliers to Walmart
Electronic commerce system	Enables transactions among organizations and between organizations and customers.	www.dell.com

IS THAT FUNCTION AMONG MULTIPLE ORGANIZATIONS.

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HOW DOES IT IMPACT ORGANIZATIONS?

IT may reduce the number of middle managers;

IT will provide managers with real-time or near-real-time information, meaning that managers will have less time to make decisions; IT will provide managers with real-time or near-real-time information, meaning that managers will have less time to make decisions;
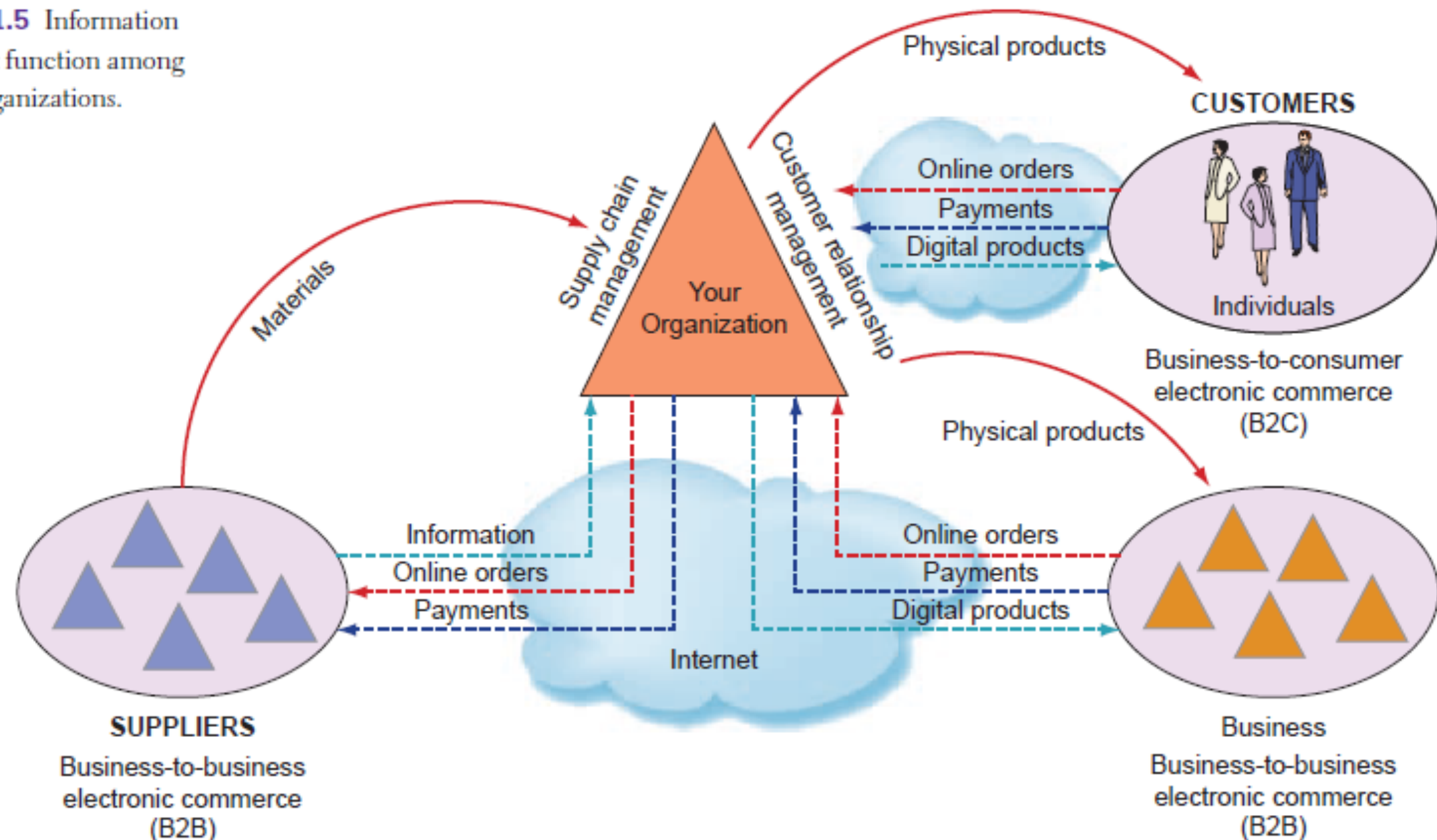
IT will increase the likelihood that managers will have to supervise geographically dispersed employees and teams.

Potential IT impacts on managers

HOW DOES IT IMPACT ORGANIZATIONS?

Perform high-speed, high-volume numerical computations.
Provide fast, accurate communication and collaboration within and among organizations.
Store huge amounts of information in an easy-to-access, yet small space.
Allow quick and inexpensive access to vast amounts of information, worldwide.
Interpret vast amounts of data quickly and efficiently.
Automate both semiautomatic business processes and manual tasks.

Major Capabilities of Information Systems

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HOW DOES IT IMPACT ORGANIZATIONS?

IT may eliminate jobs;

IT may cause employees to experience a loss of identity;

IT can cause job stress and physical problems, such as repetitive stress injury

Potential IT impacts on nonmanagerial workers

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IMPORTANCE OF INFORMATION SYSTEMS TO SOCIETY. (+)

IT can provide opportunities for people with disabilities;

IT can provide people with fl exibility in their work (e.g., work from anywhere, anytime);

Robots will take over mundane chores;

IT will enable improvements in healthcare.

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IMPORTANCE OF INFORMATION SYSTEMS TO SOCIETY. (-)

IT can cause health problems for individuals;

IT can place employees on constant call;

IT can potentially misinform patients about their health problems.

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REFERENSI

1) R. Kelly Rainer, Brad Prince and Casey G. Cegielski-*Introduction to Information Systems Supporting and Transforming Business*-Wiley (2013)