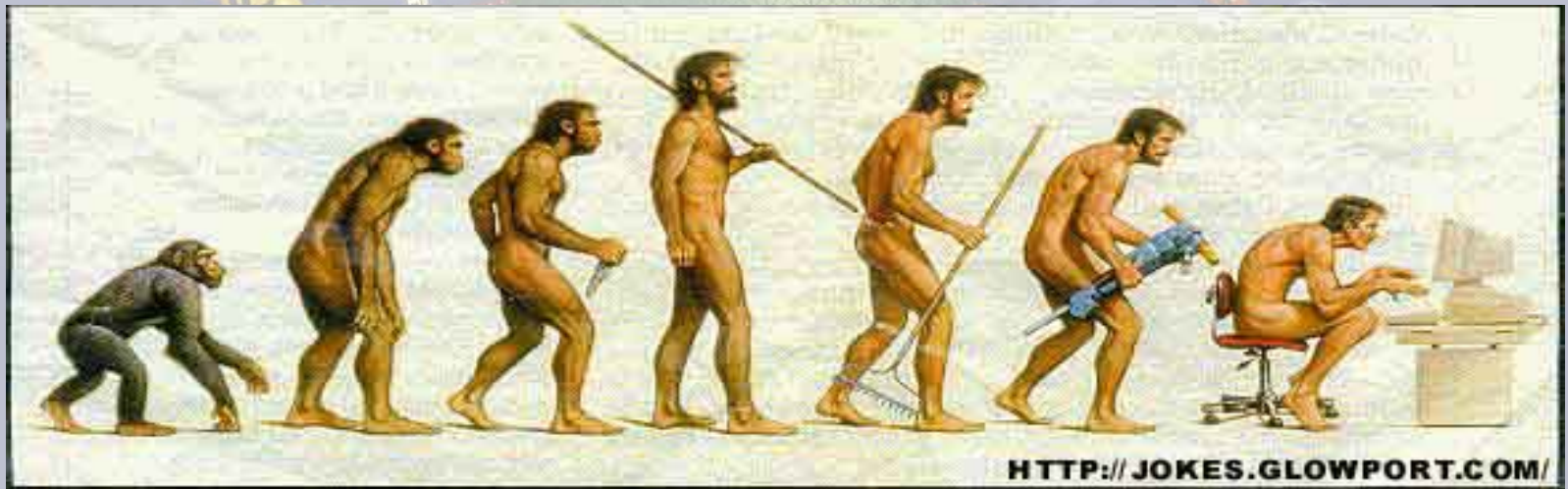


Sistem Informasi dan Teknologi Informasi



Achmad Benny Mutiara

Definisi SI dan Teknologi Informasi

- **SI** (Sistem Informasi) → sebuah sistem formal dan prosedural dalam hal pengumpulan, penyimpanan, pengelolaan, pemrosesan, analisis, penyebaran data dan informasi, baik secara elektronik ataupun manual.
- **SIM** (Sistem Informasi Manajemen / Management Information System) → metode formal yang menyediakan informasi yang akurat dan tepat waktu kepada manajemen untuk mempermudah proses pengambilan keputusan dan membuat organisasi dapat melakukan fungsi perencanaan, operasi secara efektif dan pengendalian [Stoner, 1996]

Definisi SI dan Teknologi Informasi

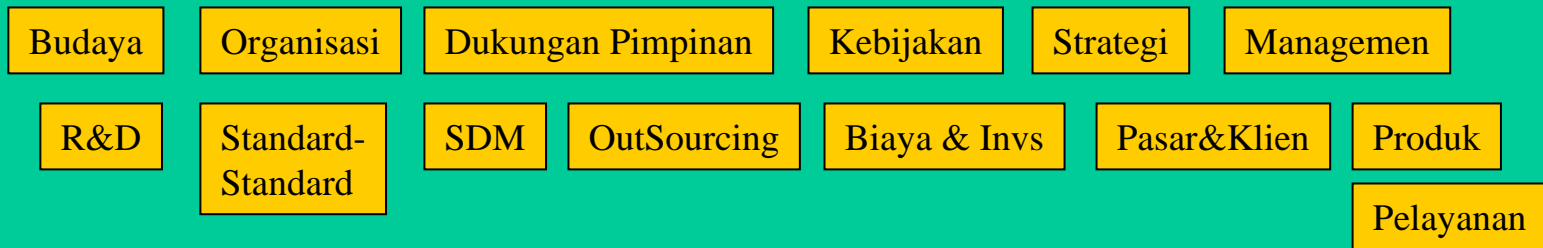
- **Teknologi Informasi** → Teknologi yang diperlukan untuk pengelolaan/pemroses **informasi**.
 - **Khususnya** penggunaan komputer dan software untuk mengkonversi, menyimpan, melindungi, memroses, mengirim dan menerima Informasi dari manapun dan kapanpun
- **Teknologi** → Pengembangan dan Aplikasi dari tools, mesin, material dan pemroses dalam rangka membantu manusia u/ memecahkan masalahnya.
- **Informasi** → kumpulan data yang diolah/diatur sedemikian sehingga bermakna.

Definisi SI dan Teknologi Informasi

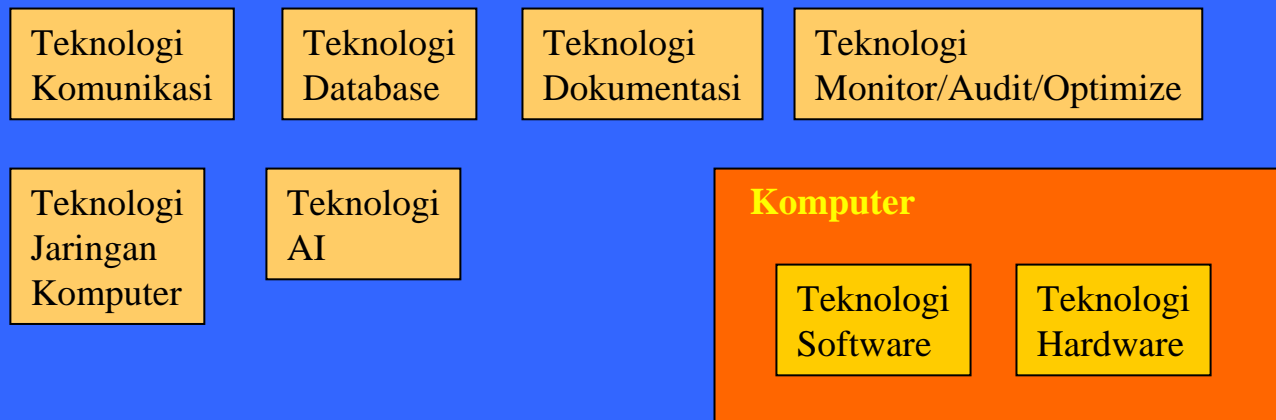
- Teknologi Informasi → Information Technology (IT)(eng.)
 - Berkembang → Information Communication Technology (ICT) → Information Communication Content Technology (ICCT)
- Konsep 3C:
 - Computer, Communication, Content

Kandungan Sistem Informasi

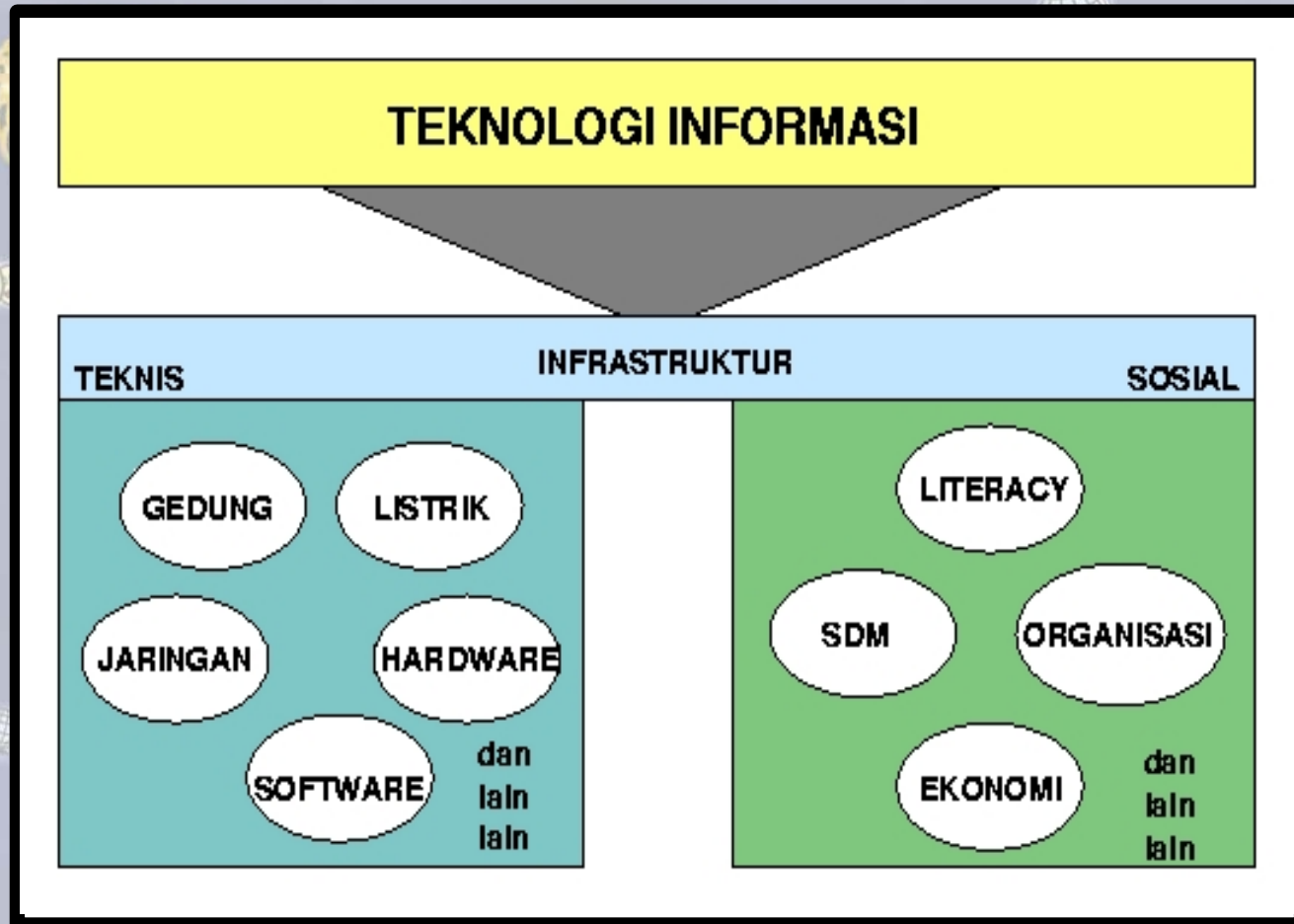
Sistem Informasi



Teknologi Informasi



Infrastruktur TI



Abad Informasi



- Berevolusi lebih cepat ketimbang abad industri
- Akan terus berlangsung di masa yang akan datang

Etos kerja



- Dari bersifat fisik menuju mental
- Dari kekuatan otot menuju kekuatan otak (berpikir)

Sifat Dasar Komputer

Karakteristik

- Kecepatan
- Kehandalan
- Kapabilitas penyimpanan

Hasil

- Produktivitas
- Decision making
- Penurunan biaya

Dimana Komputer digunakan: Grafik

Graphs dan charts

Animated graphics

Visual walk-through

Dimana Komputer digunakan: Pendidikan

- Alat bantu belajar dan test
- Learning by doing
- Computer-based instruction



Dimana Komputer digunakan: Retailing

- Bar codes for pricing and inventory
- Shipping



Dimana Komputer digunakan: Energi

- Locate oil, coal, natural gas, and uranium
- Monitor the power network
- Meter reading




Dimana Komputer digunakan: Penegakan Hukum

- National fingerprint files
- National files on criminal
- Computer modeling of DNA



Dimana Komputer digunakan: Transportasi



- Cars
- Run rapid transit systems
- Load containerships
- Track railroad cars
- Monitor air traffic

Dimana Komputer digunakan: Keuangan

- Record keeping
- Banking by phone
- Credit cards

Dimana Komputer digunakan: Pemerintah

- Forecast weather
- E-government
- Process immigrants
- Taxes
- Registration: birth, identity, car etc.

Dimana Komputer digunakan: Di rumah

- Educational tool
- Record keeping
- Letter writing
- Budgeting
- Drawing and editing pictures
- Newsletters
- Connecting with others



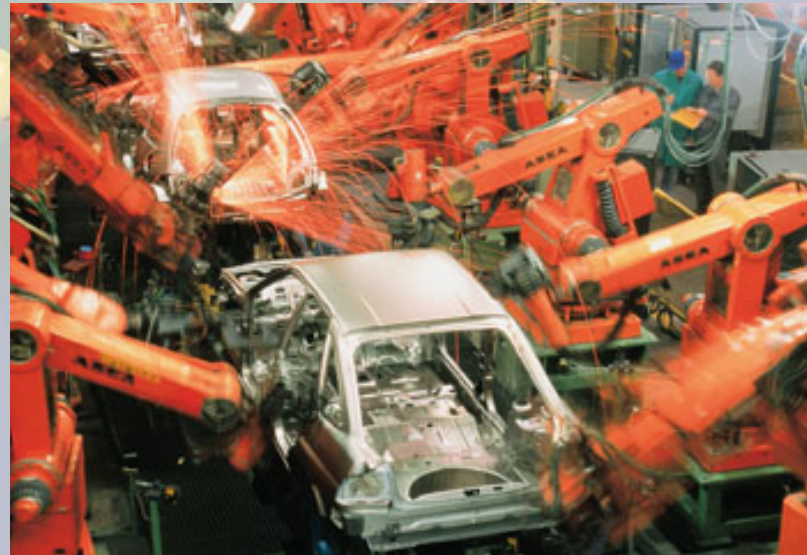
Dimana Komputer digunakan: Kesehatan dan Medis

- Monitor patients
- Electronic imaging
- Diagnose illnesses
- Tele-health



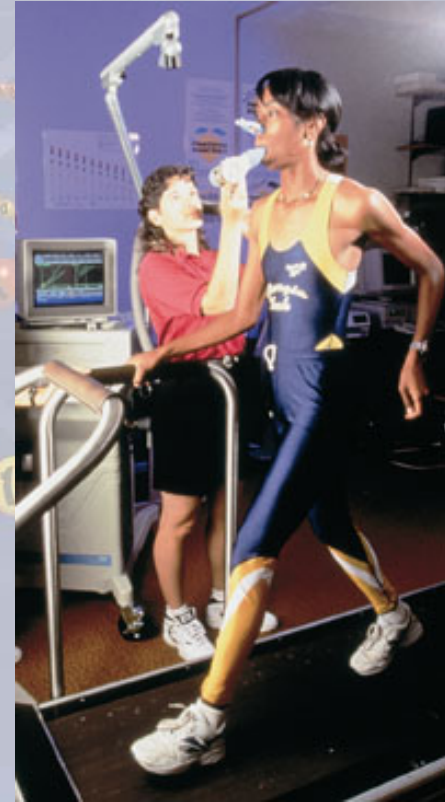
Dimana Komputer digunakan: Robotika

- Perform jobs that are dangerous for humans
- Factory work



Dimana Komputer digunakan: Koneksi antar manusia

- Assist the disabled
- Assist athletes by monitoring their movements



Dimana Komputer digunakan:

Sains

- Riset
- Simulasi

Konektivitas

- Komunikasi
- Telecommuting

Dimana Komputer digunakan:

Pelatihan

- Airline pilots
- Railroad engineers

Kertas kerja (Paper work)

- Junk mail
- Term paper
- Record keeping

Komputer di mana-mana!

- Grocery store
- Schools
- Libraries
- Bank
- Mail
- Malls



Kita berinteraksi dgn komputer setiap hari !

Apa yang tidak dapat dilakukan oleh komputer ?

Aktivitas-2 manusia yang kompleks

Sistem Komputer



Orang

Software

Hardware

Orang

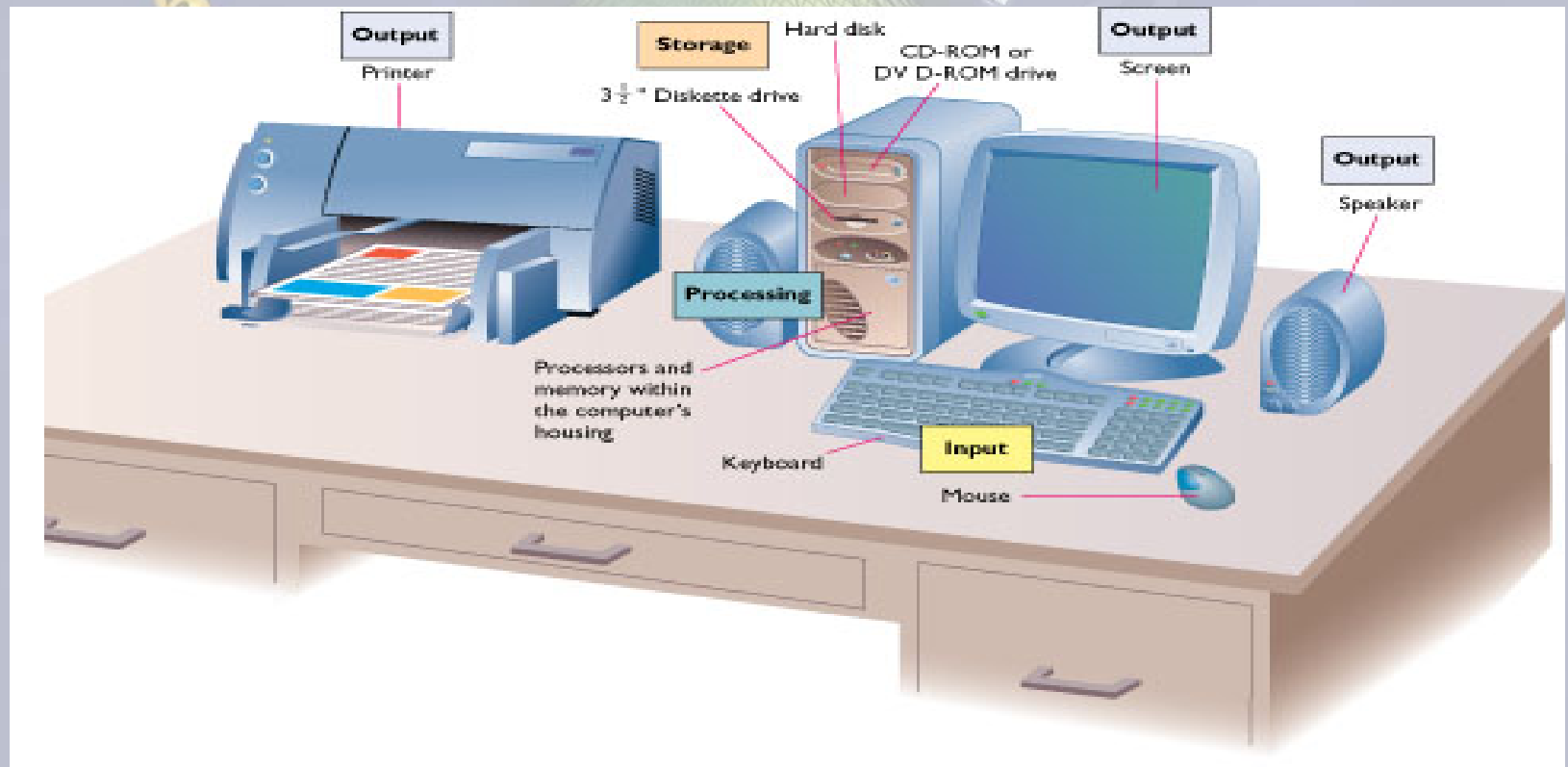
- Computer programmer – orang yang menulis/membuat program
- Users or End-users – pengguna dan pemanfaat dari kapabilitas-kapabilitas komputer

Software



- Programs
- Kumpulan instruksi yang mengatur hardware untuk melakukan tugas yang diperlukan dan menghasilkan hasil yang diharapkan

Hardware: Komponen dasar komputer



Computer Network

- Definition
 - A system that uses communications equipment to connect computers and their resources.
- Types
 - Local area network (LAN) – connects computers in close proximity
 - Metropolitan area network (MAN) – connect computers between buildings in the same geographic area
 - Wide area network (WAN) – connects computers over great distances

Home Connectivity



- Connect home PC to other computers
- Use modem to convert signals between electronic (computer) and analog (voice) formats

Internet

- Collection of networks
- No ownership
- No central source for services available
- No comprehensive index of what information is available

Connects Everyone!

Individuals

Businesses

Organizations

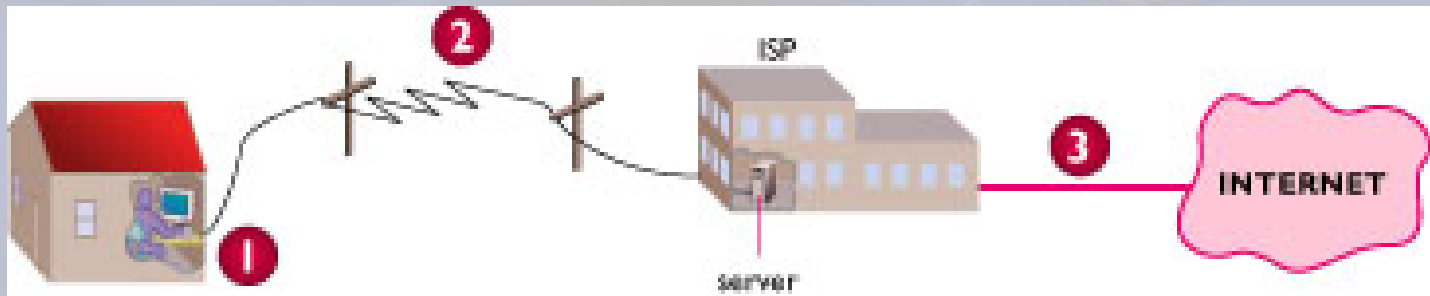
Libraries

Research labs

Government

Getting Connected

- User's computer must connect to a server
- Server must communicate using TCP/IP
- The user can purchase access to a server from an ISP (Internet Service Provider)



Internet – What Can You Do?

- WWW – World Wide Web
- FTP – File Transfer Protocol
- E-mail
- UseNet
- IRC – Internet Relay Chat
- Bulletin Boards

World Wide Web



- Browser – program that allows the user to move around and explore the Internet
- Use the mouse to point and click on text and graphics
- Web page
- Web site
- Home page

Classifications of Computers

- Use the computer that fits your needs
- Based upon
 - Size
 - Speed
 - Cost
 - Portability
 - Number of simultaneous users supported
 - Available software
 - Typical use



Personal Computers



- Other names
 - PC
 - Microcomputer
 - Home computer
- Categories
 - Low-end functional
 - Fully powered
 - Workstations
 - Net computer or net box (Web TV)
- Desktop Models

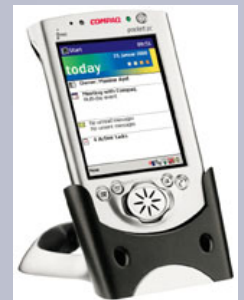
Notebook Computers

- Portable
 - Lightweight
 - Fits in a briefcase
 - Battery operated
- Laptop
 - Larger
 - Heavier
- More expensive than desktop models



Handheld Computers

- Personal Digital Assistant (PDA)
 - Scheduling
 - Addresses
 - Handwritten input
 - May offer wireless e-mail and fax
- Pocket
 - More power than PDA
 - Runs basic productivity software



Other Types of Computers



Mainframes

- High speed
- More expensive
- Used to process large amounts of data quickly
- Support multiple users
- Does server tasks

Supercomputers

- Fastest speed
- Most expensive

INFORMATION TECHNOLOGY TREND



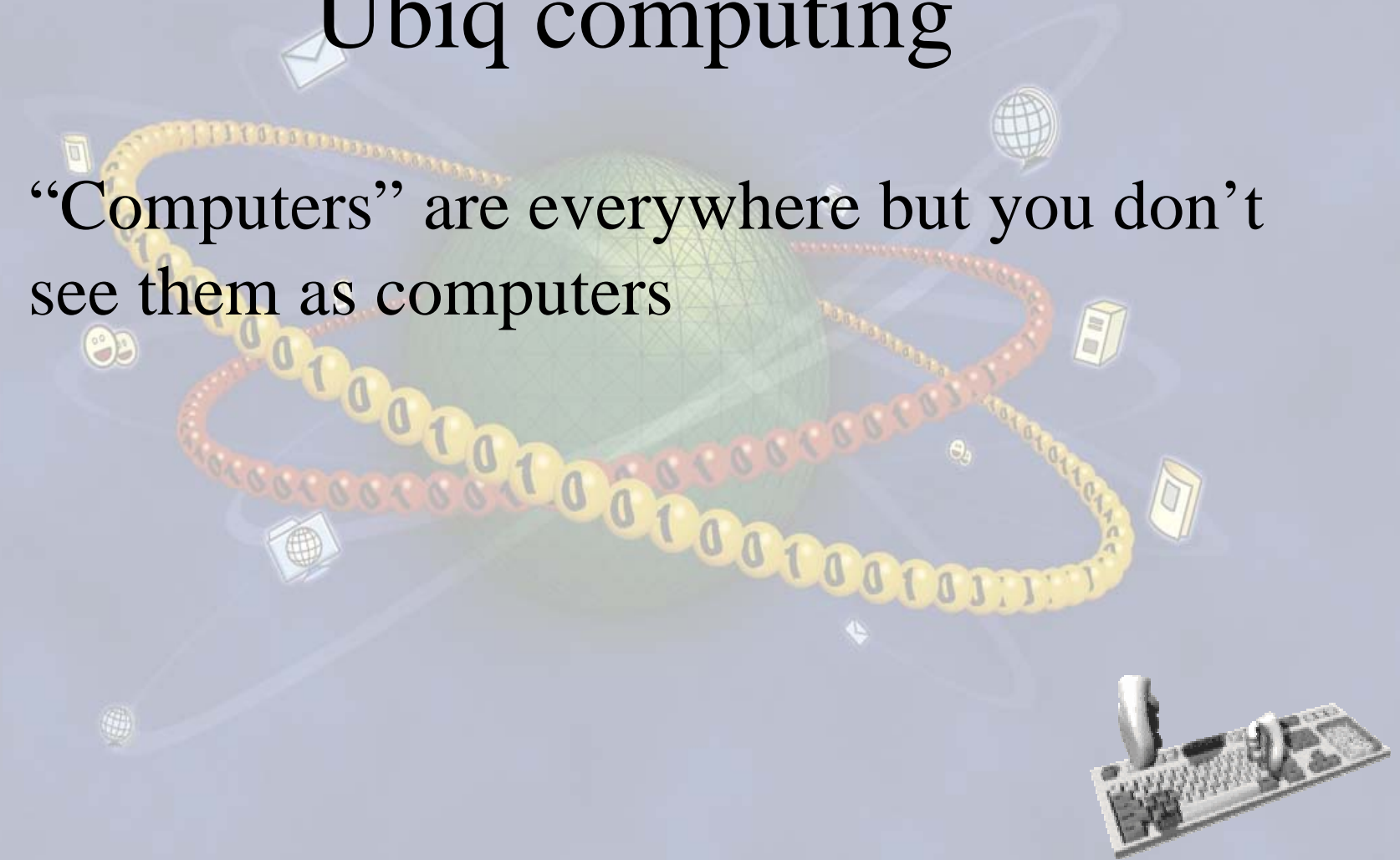
Keypoints



- Ubiquitous / pervasive computing
- Networked, wired, always on
- Wireline vs wireless
- New applications
- Other technology to watch
- New business models
- Human Resources issues

Ubiq computing

- “Computers” are everywhere but you don’t see them as computers



Networked World



- Wired, always On
 - Security issues
- Standards
 - Too many

New [smart?] Devices



- Personal Digital Assistants (PDAs)
 - Palm OS, Symbian, Windows CE, Linux

Wireline vs Wireless



- Wireless users are increasing rapidly
 - In Indonesia: more cellular phone users than Internet users

Wireline Issues

The background of the slide is a light blue gradient. It features a central green wireframe globe. A yellow and red coiled telephone cord is draped across the globe, with binary digits (0s and 1s) printed on it. Various icons are scattered around, including a white envelope, a globe, a laptop, and a mobile phone.

- Still the best technology for quality
- But more expensive and slow in adding users
- Technology: DSL vs Cable
- More homes are connected to the Internet.
Security? Personal firewall?

Wireless Issues



- Faster to implement/add users
- Cellular technologies
 - GSM, GPRS, 3G, CDMA, TDMA
- Data networking technologies
 - IEEE 802.11b, Bluetooth, IrDa
- RF spectrum regulation
- Still slow speed

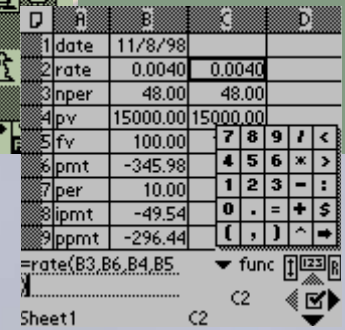
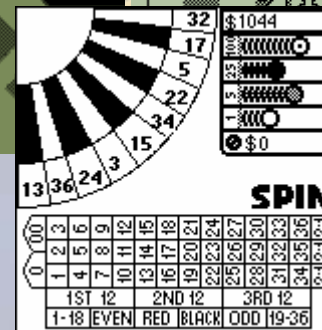
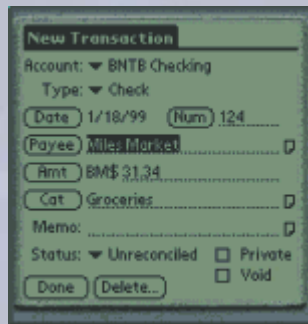
Wireless Applications



- WAP
- New applications
 - SMS is popular in Asia
 - Peer-to-peer: Bluetooth
(does not involve operator)
 - Wireless LAN IEEE 802.11b
- New social implications
 - Noise in meeting/movie theater
 - Cheating

New IT Applications

- ASP?
- M-commerce?
- Peer-to-peer applications?



Other Technologies To Watch



- Biotechnology
- Telemedicine
- Semiconductors

New Business Models



Business

- Internet Service Provider (ISP)
- Internet Content Provider
- Application Service Provider (ASP)
- Digital Cybercommunities

Model: Content Provider

Content is king, but people rules

- Portals
- Knowledge repository
 - Data warehouse, mining

Model: ASP

- Application lease, rentals
 - Users don't buy software directly
 - Free software (FSF, GNU), open source
- Implemented as web-based, downloadable Java applets, applications
- Sun's StarPortal for mobile platform

Other Issues

The background of the slide is a light blue gradient. It features a central green wireframe globe. Two thick, curved lines of binary code (0s and 1s) in yellow and orange wrap around the globe. Various small icons are scattered around, including an envelope, a server tower, a globe, and a document.

- R&D ideas worth exploring
- Lack of talented human resources!
- Link with universities
- Community

**What the future
looks like?**

The background features a light blue gradient with various digital and network-related icons. A prominent element is a glowing yellow and orange binary code (0s and 1s) that forms a circular path around the central text. Other icons include a blue envelope, a server rack, a globe, and a small blue diamond. The overall aesthetic is clean and modern, suggesting a high-tech or digital environment.

Now ...



Future ...





TERIMA KASIH



Lintang Yuniar Banowosari

lintang@staff.gunadarma.ac.id

<http://staffsite.gunadarma.c.id/lintang>