

Jaringan Komputer

Konsep Dasar Jaringan Komputer

Dimodifikasi:

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BIODATA

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Mata Kuliah Smt ini : PTL, Tata Tulis Karya Ilmiah, Metodologi
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ASSESSMENTS

Nilai Tugas:	40%
Mid Test:	30%
Final Exam:	30%

TOLERANSI KETERLAMBATAN MAX 30 MENIT

RPKPS

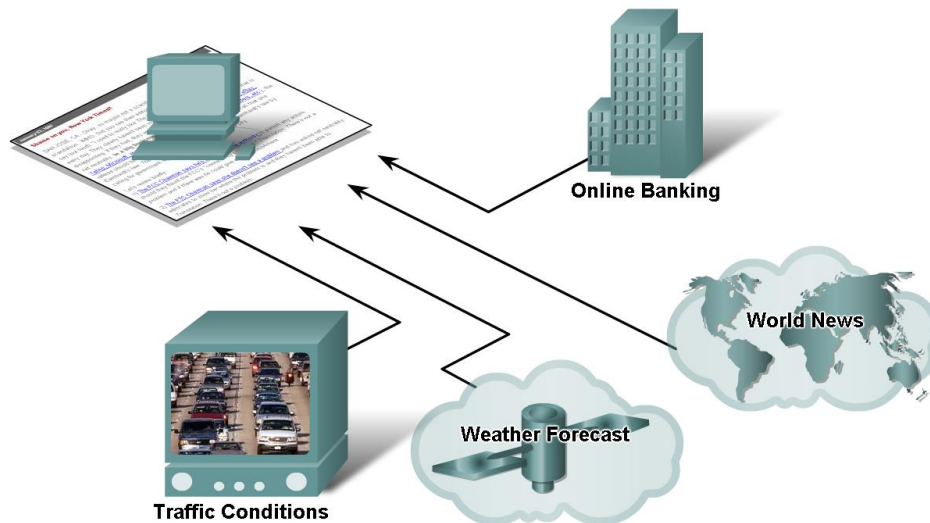
Any Questions?

Objectives



- Pengenalan Jaringan
- Teknologi Jaringan Terkini
- Pengantar Keamanan Jaringan

Bagaimana Pengaruh Jaringan dalam Kehidupan Sehari-hari



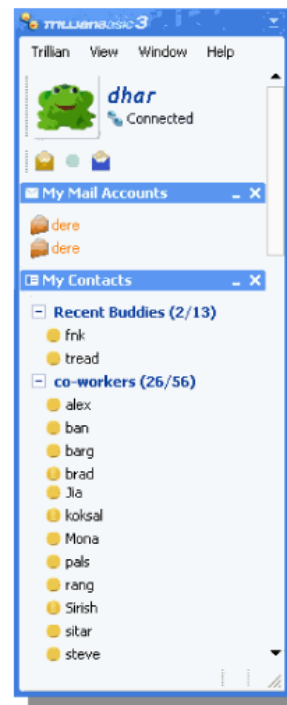
- Memeriksa **kondisi cuaca** ataupun meramalkan keadaan cuaca di kemudian hari
- Menampilkan video mengenai keadaan **lalu lintas** yang terjadi di saat tersebut
- Memeriksa **saldo di bank** dan membayar tagihan secara online.
- Mengirim dan menerima **e-mail**, melakukan **internet phone call**
- Mendapatkan **informasi kesehatan** dan nasihat dari experts di **seluruh dunia**, dan **membagikan** ke forum mengenai informasi kesehatan dan health treatment ke forum
- Memposting dan membagikan **photo**, **video dan pengalaman** dengan teman atau dengan seluruh dunia

Bagaimana Pengaruh Jaringan dalam Kehidupan Sehari-hari



- **Keberadaan** dan **adopsi** teknologi **internet** membentuk sebuah bentuk baru dalam cara **berkomunikasi**
- Instant messaging
 - Komunikasi secara **Real time** antara dua orang atau lebih melalui metode typed text
- Weblogs (Blogs)
 - Kebanyakan digunakan untuk mengekspresikan sesuatu secara online, share foto dan join ke dalam sebuah komunitas
- Wikis
- Podcasting
- Collaboration Tools

Instant Messaging



Weblog

January 03, 2007

Shame on you, New York Times!

SAN JOSE, CA - Okay, so maybe not a scandal at New York Times, but nearly scandalous...IMHO. Did you see their editorial on net neutrality today? Made me say (out loud): "I used to really like *The New York Times*." Okay, so I do read it every day. They clearly haven't been reading this blog, however...which is disappointing. If they had, they would have not fallen into the hype machine that is net neutrality. In a big business versus big business debate ([Google](#), [eBay](#), [Yahoo](#), [Microsoft](#), etc. versus [Telcos](#), [cable companies](#), [service providers](#), etc.), the referee should be the marketplace, not the government. You can call that one Earmhardt's law. *The New York Times* editorial today broke Earmhardt's law by calling for government regulation on the Internet. That's a pity.

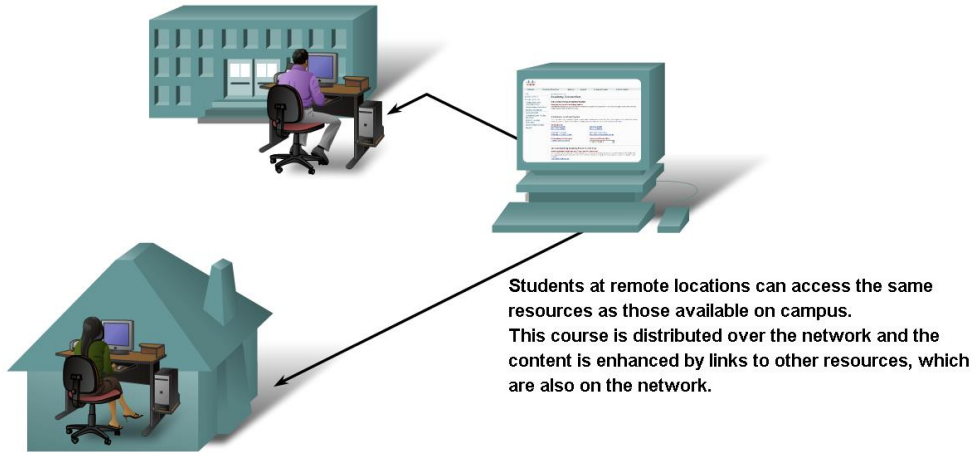
Let's review briefly:

- 1) [The FCC Chairman says he's already got the authority](#) to punish any actors should they flout the FCC's "connectivity principles." *Translation: There's not a problem and if there was he could give out any punishment.*
- 2) [The FTC Chairman says she doesn't see a problem](#), and has asked net neutrality advocates to show her where the problem is and they haven't been able to. *Translation: There's not a problem.*

Podcasting



Pengaruh Terhadap Cara Belajar



- **Current and accurate training materials.**
- **Availability of training to a wide audience.**
- **Consistent quality of instruction.**
- **Cost reduction**

A text message is sent from an instructor telling students that the next class is in the lab.



A student enrolls in classes from home.

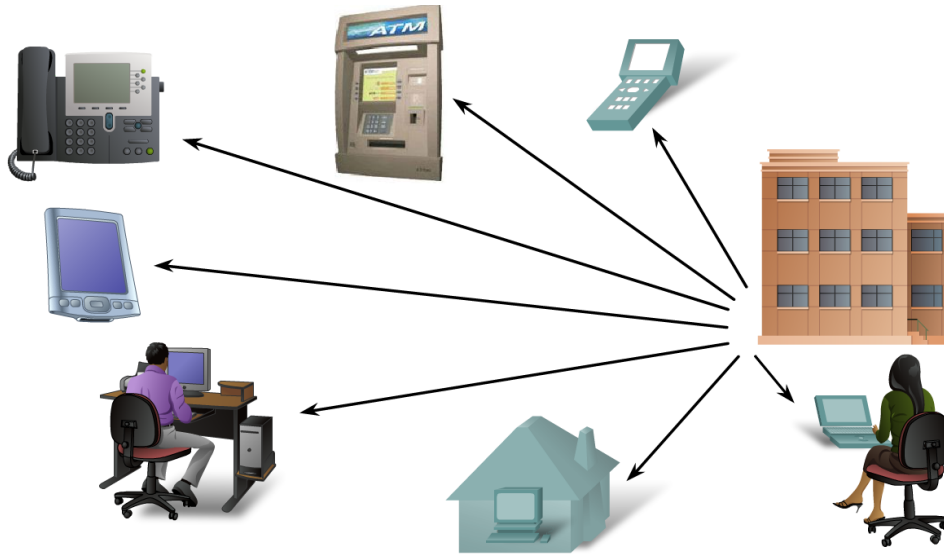


An administrator publishes the course catalog to a web site.



In addition to supporting courseware, data networks support administration, enrollment, and teacher-student communication.

Pengaruh Terhadap Cara Bekerja



- Dulu, data jaringan untuk operasi bisnis hanya digunakan
 - informasi finansial internal, informasi kustomer dan sistem penggajian pegawai.
- Sekarang, bisa meliputi
 - e-mail, video, messaging, and telephony.

- **Intranets**, jaringan **private** yang digunakan sebuah perusahaan, agar **setiap pegawai** didalamnya dapat **berkomunikasi dan melakukan transaksi** antar sesamanya di sekitar lokasi ataupun kantor cabangnya.
- **Extranets**, menyediakan akses terbatas kepada **supplier, vendors ataupun kustomer** mengenai **status order, inventaris** ataupun hal-hal yang berpengaruh kepada pelaku usaha lainnya

Ask Your Self???



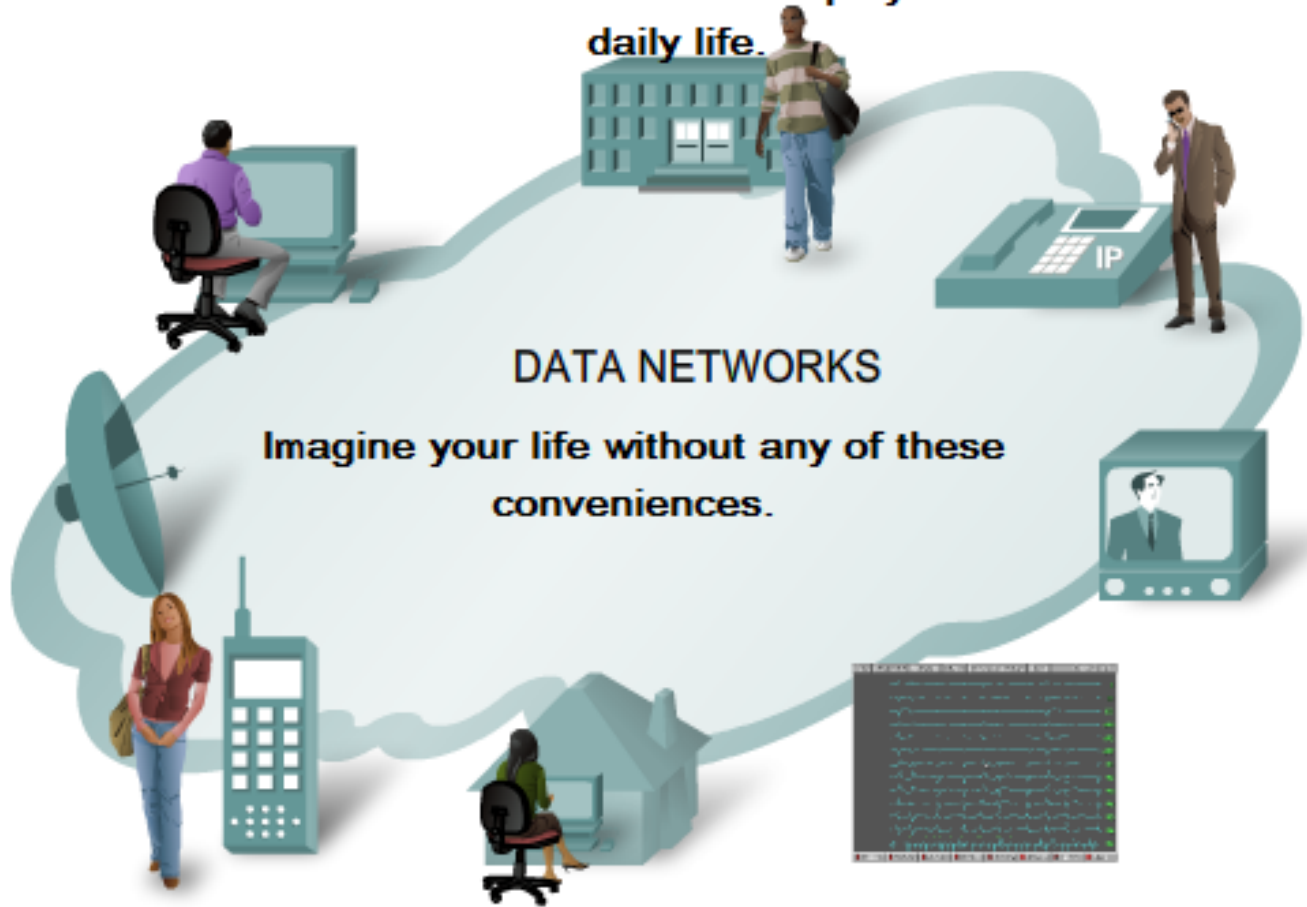
**Peranan Jaringan yang sudah
anda rasakan dalam
kehidupan sehari-hari ?**

Dampak Kerugian yang ditimbulkan?

Berkomunikasi melalui Jaringan Komputer



Communication across data networks plays a vital role in our daily life.



Rules:

Aturan umum dalam proses komunikasi manusia:

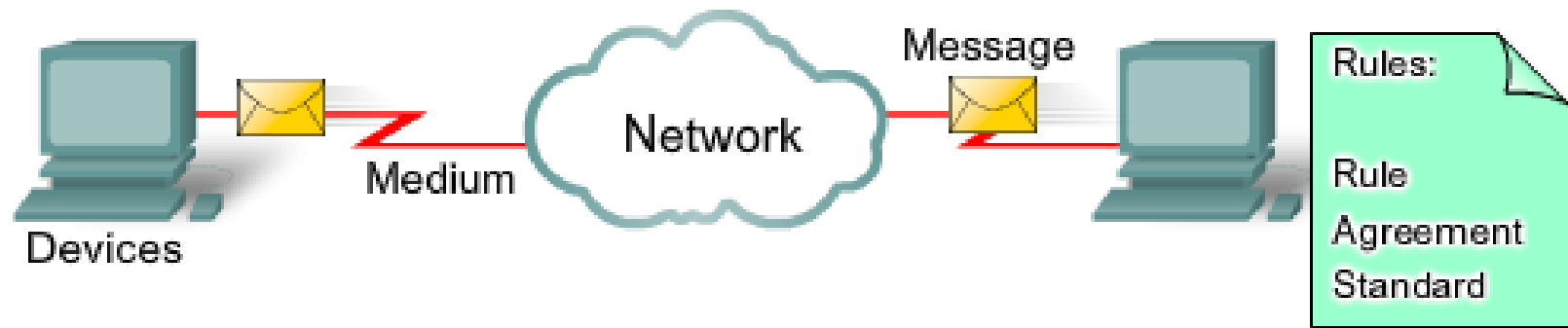
- **Identifikasi** terhadap pengirim dan penerima pesan
- **Persetujuan** terhadap metode yang digunakan (face-to-face, telephone, letter, photograph)
- **Bahasa** yang akan digunakan
- **Kecepatan** dan waktu pengiriman
- **Konfirmasi** terhadap pesan yang diterima

- Basic characteristics of communication
 - Rules or agreements are 1st established
 - Important information may need to be repeated
 - Various modes of communication may impact the effectiveness of getting the message across.



Before communication can begin, we may have to reach an agreement on the method used.

Komunikasi melalui Jaringan



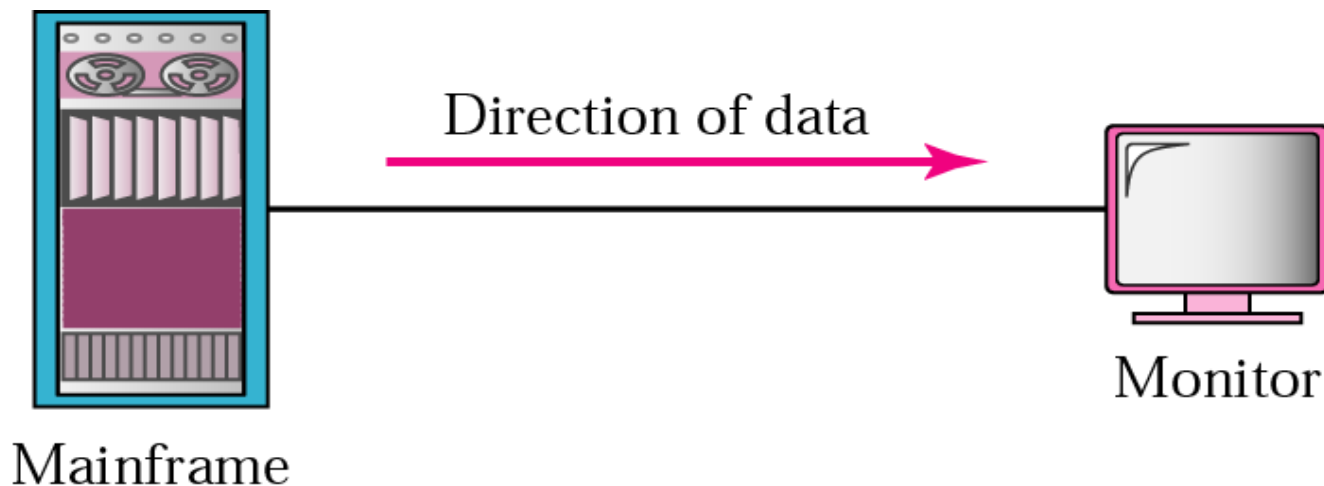
- 4 Elemen dalam komunikasi jaringan komputer:
 1. **Aturan** bagaimana pesan itu dikirim, diarahkan, diterima dan ditafsirkan
 2. **Format pesan** atau unit informasi yang berpindah dari satu perangkat ke perangkat lainnya
 3. **Medium** yang digunakan untuk menghubungkan perangkat jaringan
 4. **Perangkat** dalam jaringan yang digunakan untuk bertukar pesan

Data Flow Types

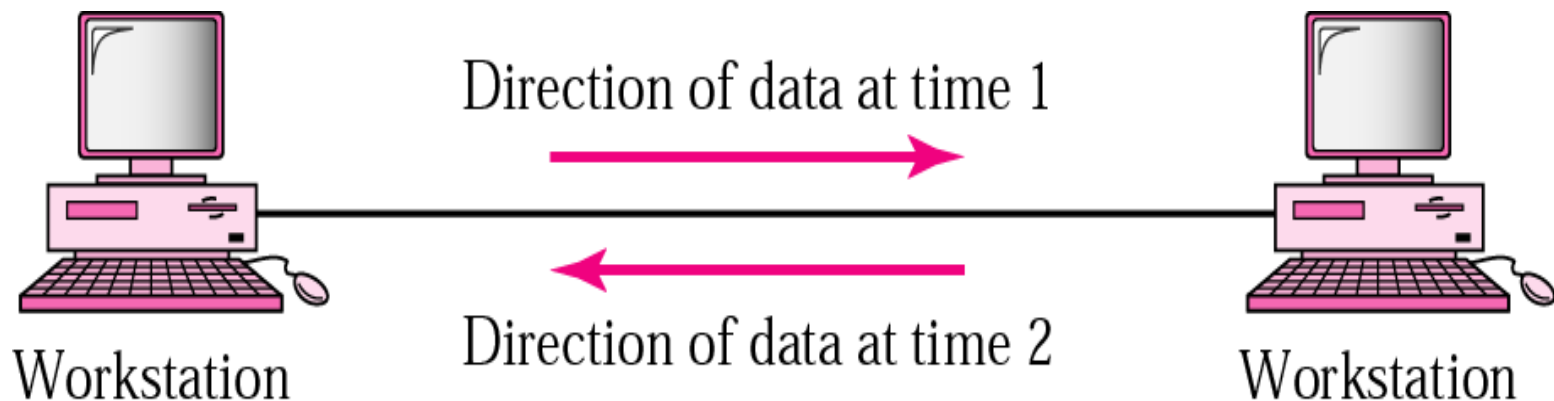


- ❑ **Simplex**
- ❑ **Half-Duplex**
- ❑ **Full-Duplex**

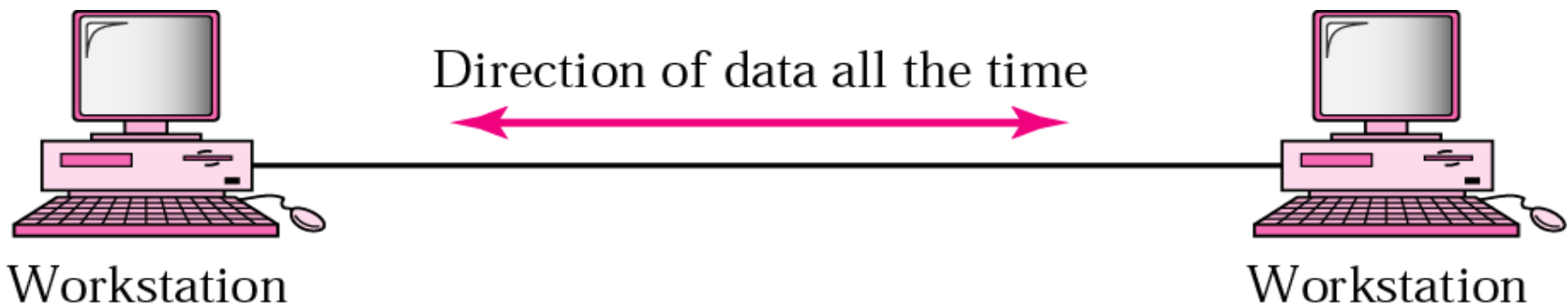
Simplex: Only one of the two devices on a link can transmit, the other can only receive. The entire capacity of a channel is taken over by the transmitting device. Examples: keyboard and traditional monitors.



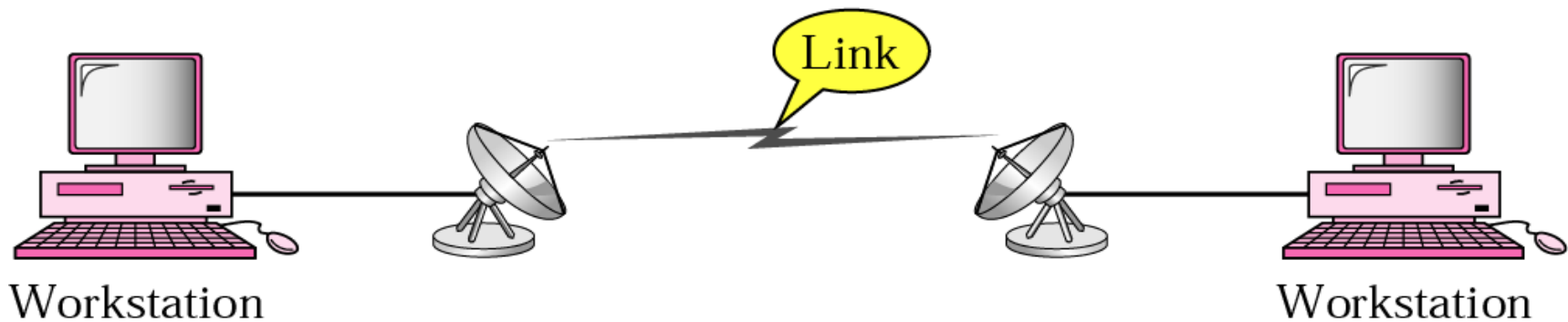
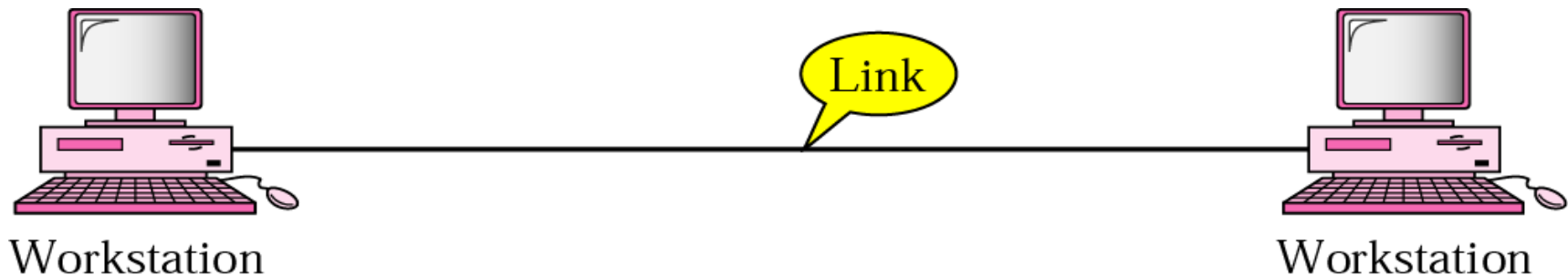
Half-Duplex: Each device can both transmit and receive, but not at the same time. When one device is sending, the other can only receive, and vice versa. The entire capacity of the channel is taken over by one of two devices that is transmitting at that time. Example Walkie-talkies



Full-Duplex (Duplex): Both devices can transmit and receive simultaneously. Signals going in either direction share the capacity of the link. Either the link must contain two physically separate transmission paths, one for sending and the other for receiving; or the capacity of the channel is divided between signals traveling in both directions. Example: Telephone network



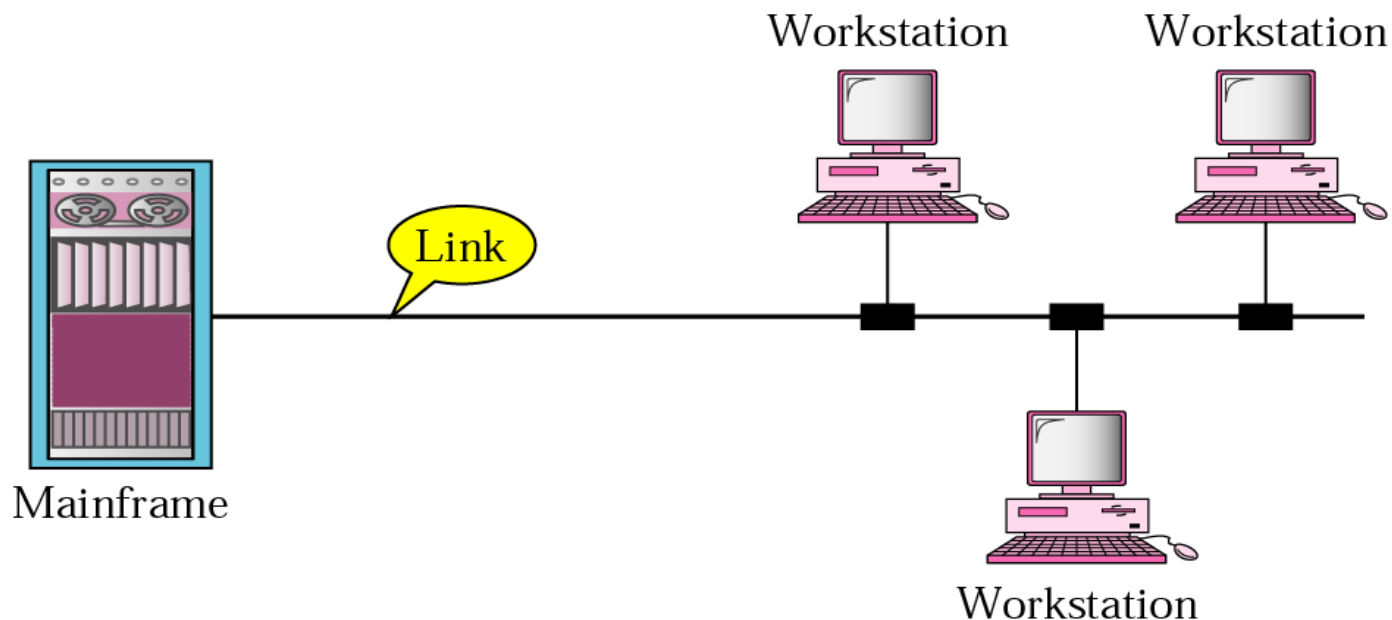
- There are two possible types of connections: point-to-point and multipoint.
- **Point-to-Point:** Provides a dedicated link between two devices. The entire capacity of the link is reserved for transmission between these two devices. The link could be a wire (cable), microwave or satellite.



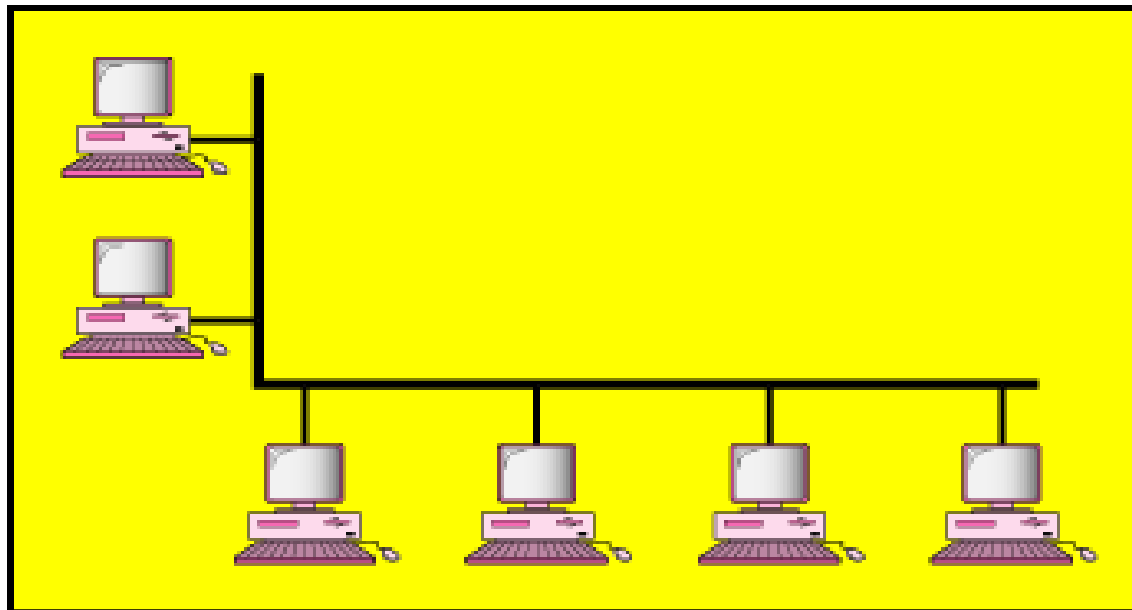
Multipoint connection



- **Multipoint (Multidrop)**: More than two specific devices share a single link. The capacity of the channel is shared, either **spatially** (devices can use the link simultaneously) or **temporally** (devices must take turn).

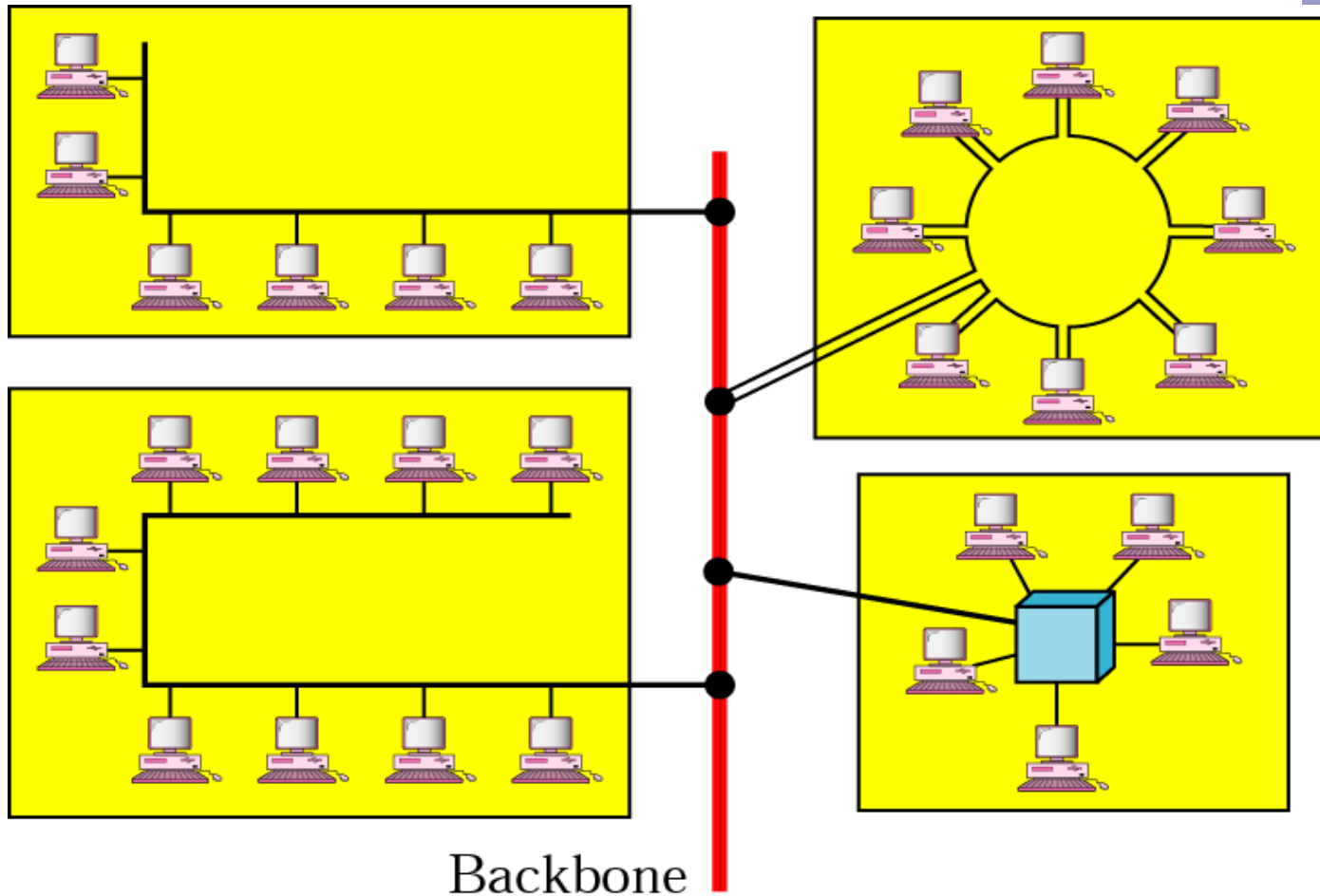


LAN



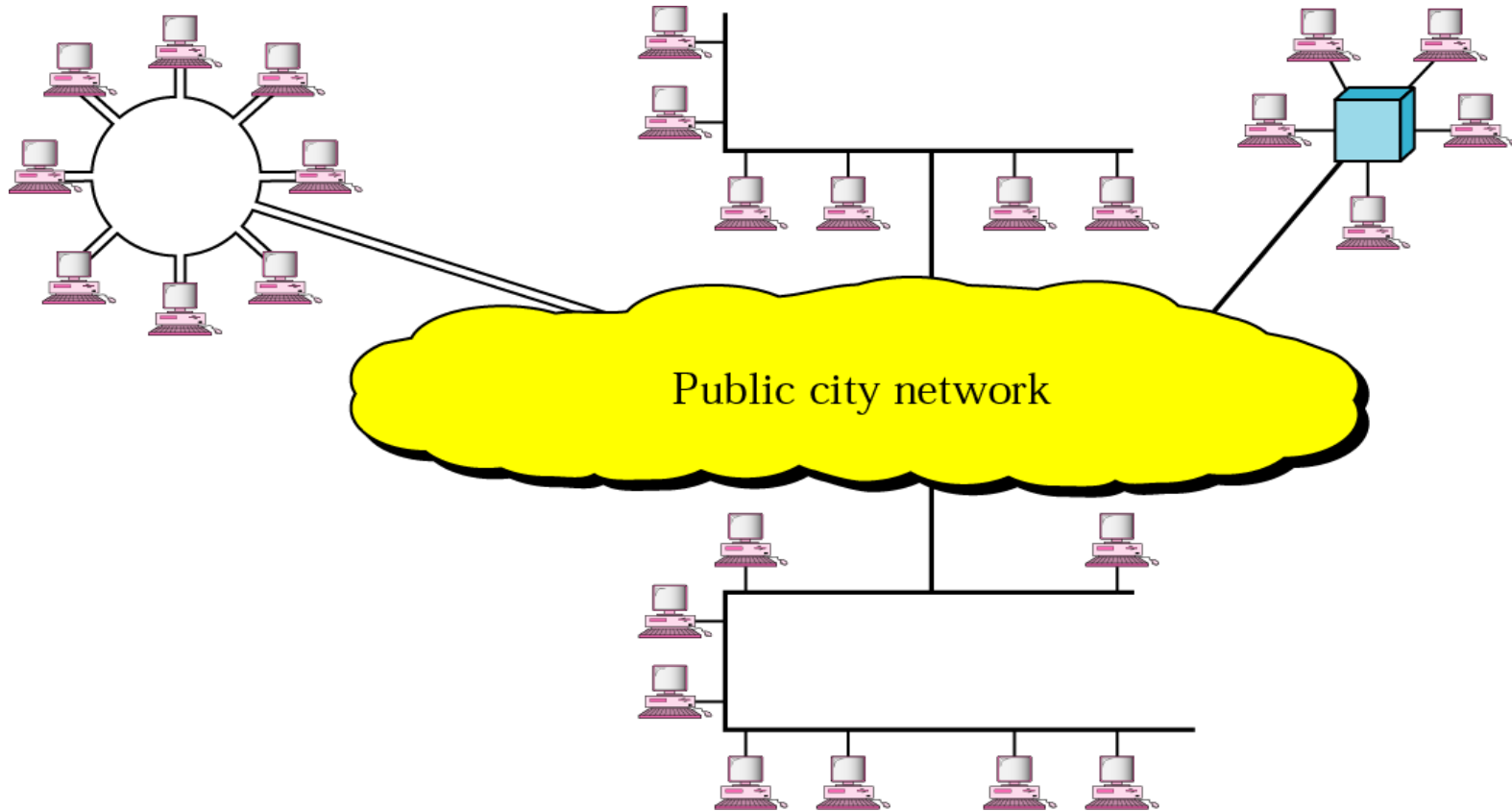
a. Single-building LAN

LAN (Continued)

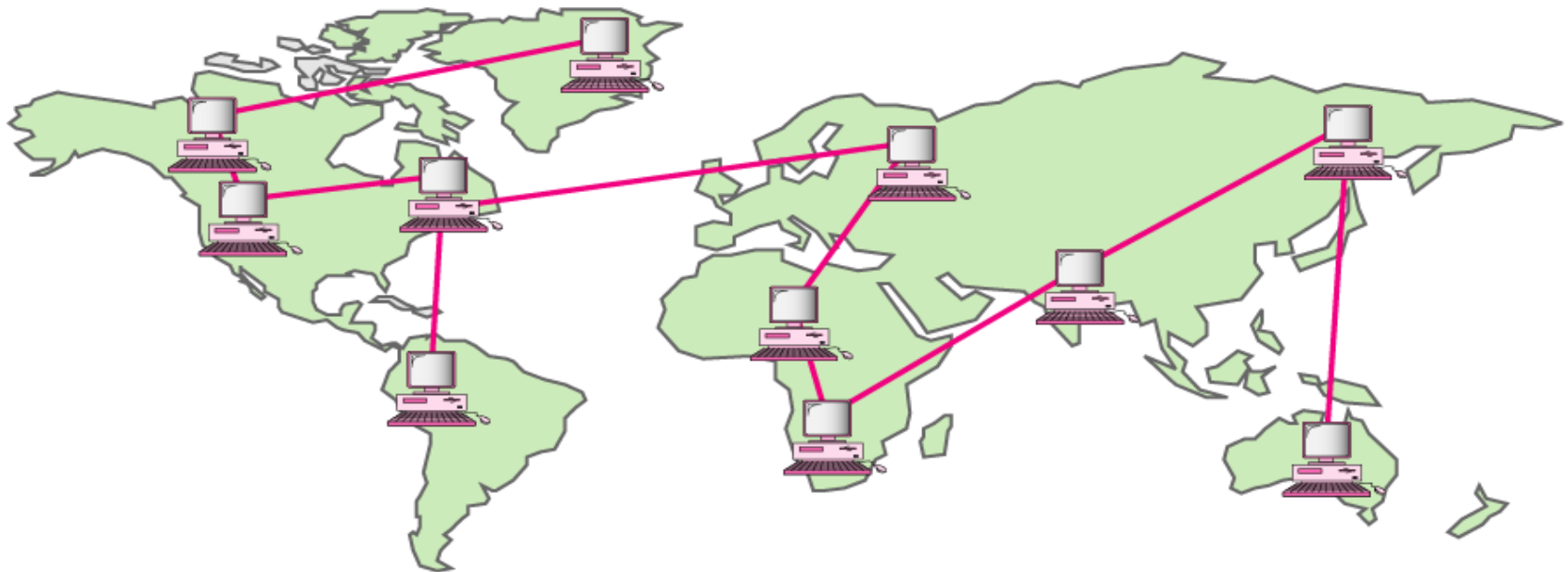


b. Multiple-building LAN

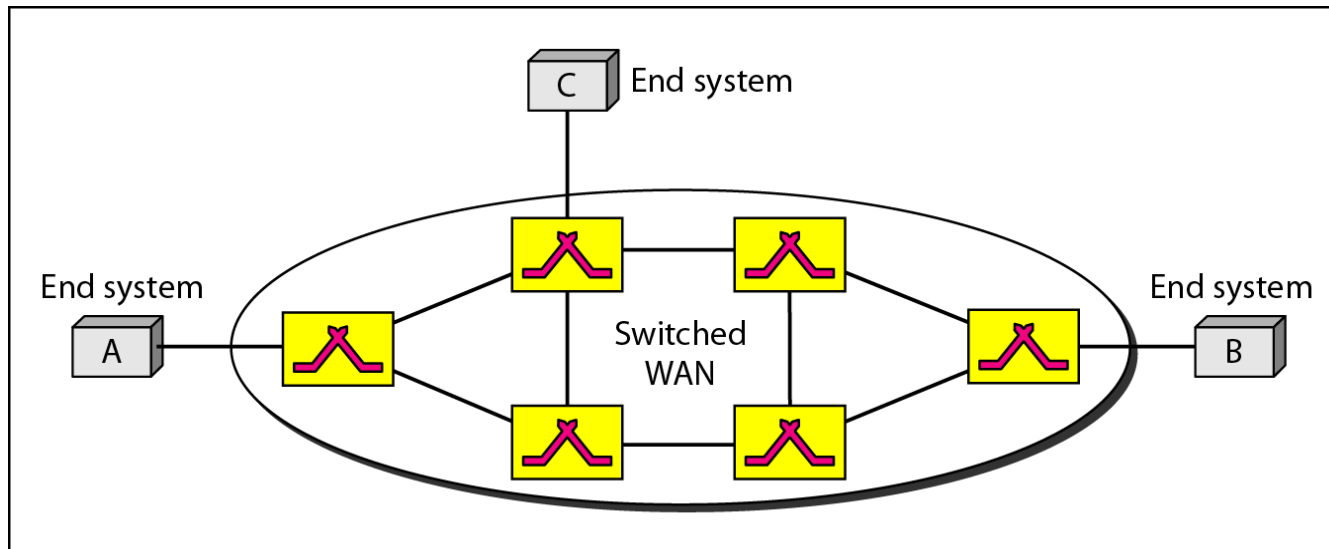
MAN



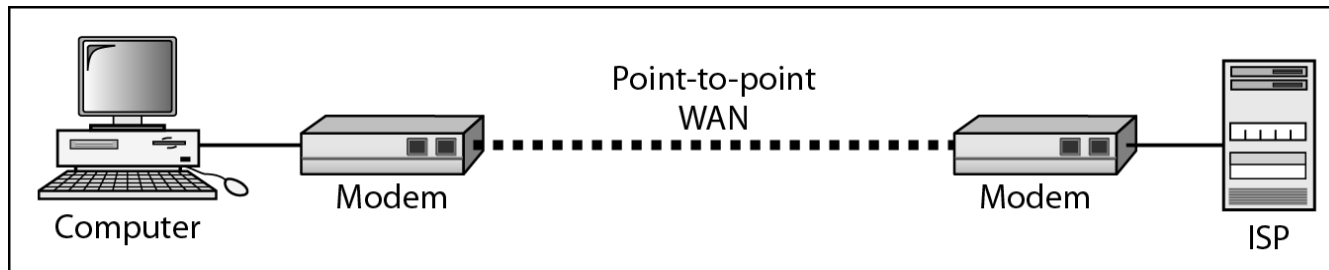
WAN



WANs: a switched WAN and a point-to-point WAN

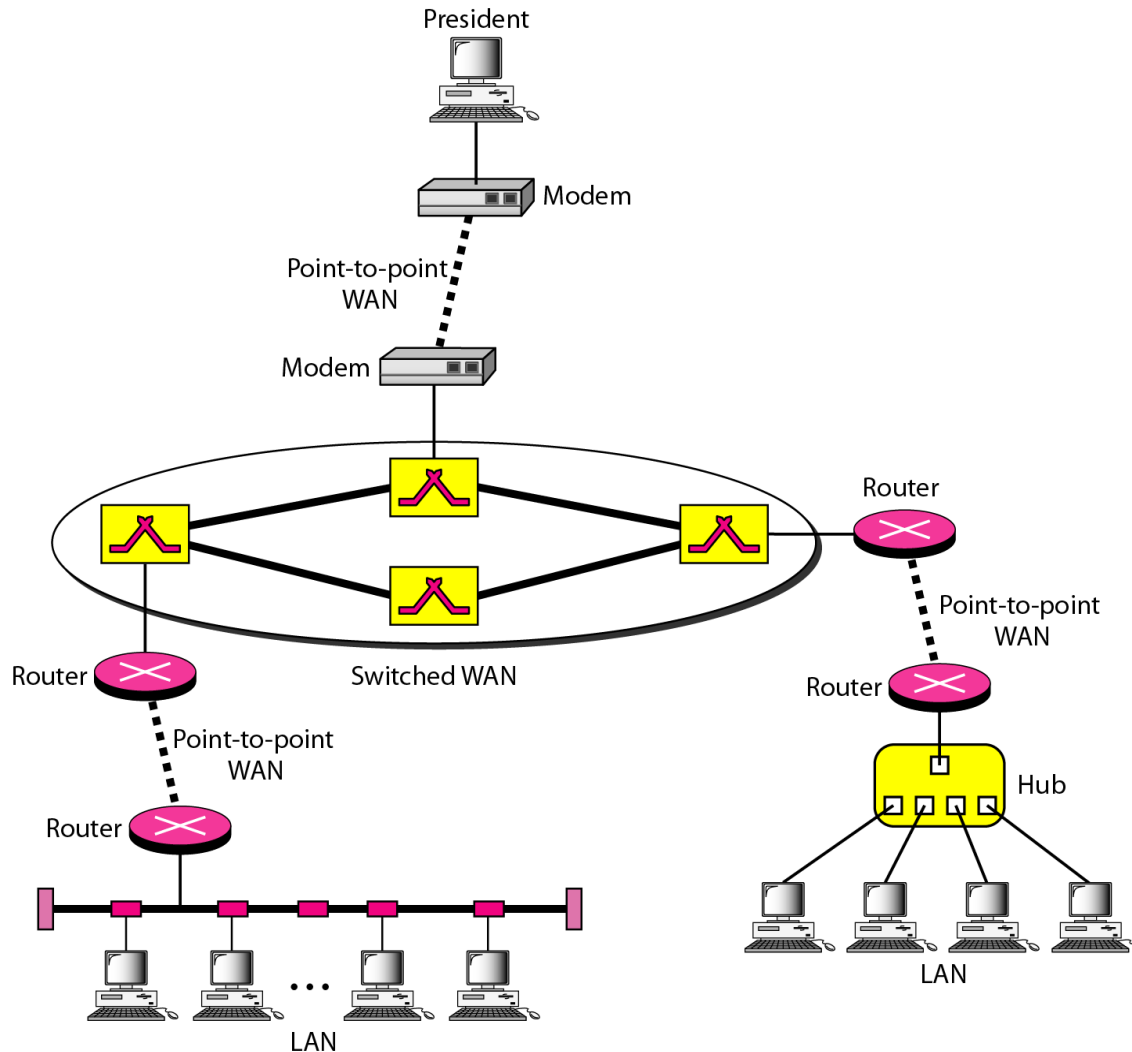


a. Switched WAN



b. Point-to-point WAN

A heterogeneous network made of four WANs and two LANs



Konvergensi Jaringan



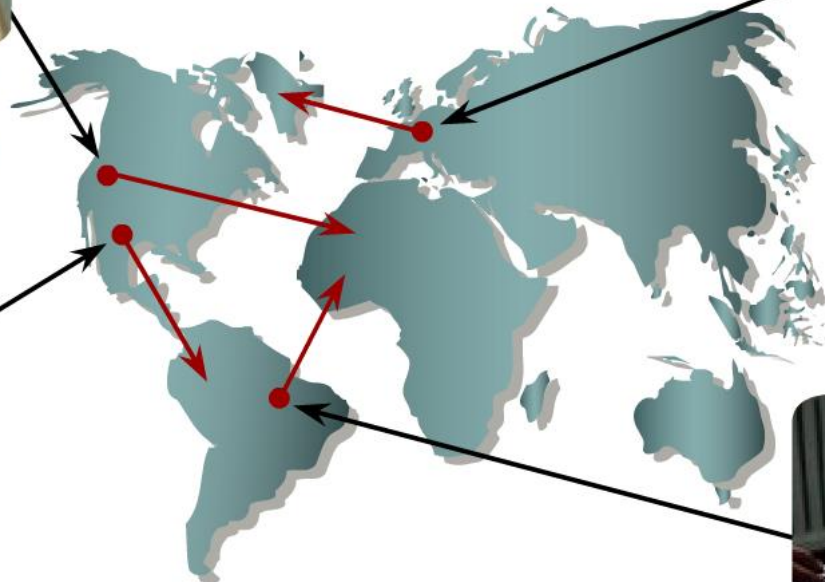
Intelligent Networks allow handheld devices to receive news, Emails, and to send text.



Video conferencing around the globe is in the palm of your hand.



Phones connect globally to share voice, text and images.



The Human Network is everywhere.





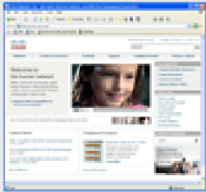
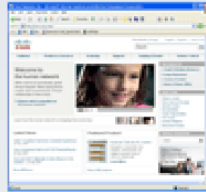
Online gaming connects thousands of people seamlessly.

Quality of Services (QoS)



- Mekanisme QoS menerapkan strategi **manajemen queue** terhadap **data network** dari berbagai aplikasi yang ada untuk mencapai hasil yang maksimal

Quality of Service Matters

Communication Type	Without QoS	With QoS
Streaming video or audio	 <p>Choppy picture starts and stops.</p>	 <p>Clear, continuous service.</p>
Vital Transactions	Time : Price 02:14:05 \$1.54 Just one second earlier...	Time : Price 02:14:04 \$1.52 The price may be better.
Downloading web pages (often lower priority)	 <p>Web pages arrive a bit later...</p>	 <p>But the end result is identical.</p>

Ancaman Keamanan



Unauthorized Transactions

1Your First Bank		CREDIT CARD STATEMENT		SEND PAYMENT TO Box 1234 Anytown, USA	
ACCOUNT NUMBER	NAME	STATEMENT DATE	PAYMENT DUE DATE		
4125-239-412	John Doe	2/13/01	3/09/01		
CREDIT LINE	CREDIT AVAILABLE	NEW BALANCE	MINIMUM PAYMENT DUE		
\$1200.00	\$1074.76	\$125.24	\$20.00		
REFERENCE	SOLD	POSTED	ACTMVTY SINCE LAST STATEMENT	AMOUNT	
489GE7382		1/25	PAYMENT THANK YOU	-168.80	
32F349ER3	1/12	1/15	RECORD RECYCLER ANYTOWN USA	14.83	
89102DIS2	1/13	1/15	BEEFORAMA REST ANYTOWN USA	30.55	
NX34FJD32	1/18	1/18	GREAT EXPECTORATIONS EIG CITY USA	27.50	
84RT3293A	1/20	1/21	DINO-GEL PETROLEUM ANYTOWN USA	12.26	
873EWS321	2/09	2/09	SHIRTS 'N SUCH TINYVILLEUSA	40.10	
Previous Balance	(+)	168.80	Current Amount Due	125.24	
Purchases	(+)	125.24	Amount Past Due		
Cash Advances	(+)		Amount Over Credit Line		
Payments	(-)	168.80	Minimum Payment Due	20.00	
Credits	(-)				
FINANCE CHARGES	(+)				
Late Charges	(+)				
NEW BALANCE	(=)	125.24			
FINANCE CHARGE SUMMARY	PURCHASES	ADVANCES	For Customer Service Call:		
Periodic Rate	1.65%	0.954%	1-800-XXX-XXXX		
Annual Percentage Rate	19.80%	19.80%	For Lost or Stolen Card, Call:		
			1-800-XXX-XXXX		
			24-Hour Telephone Numbers		

Please make check or money order payable to Your First Bank. Include account number on front.



Out of Business

- Ketidakpercayaan publik terhadap integritas, kerahasiaan dan validasi bisnis perusahaan
 - Perusahaan gulung tikar

Penanggulangan Celah Keamanan



Infrastructure Security

- Mengamankan perangkat fisik yang menyediakan layanan koneksi jaringan
- Mencegah akses yang tidak diinginkan terhadap aplikasi management perangkat

Content Security

- Pengamanan terhadap informasi yang terdapat pada paket data yang ditransmisikan melalui jaringan

