

Teknologi Web

[MI2413]

Management Informatika | Fakultas Ilmu Terapan | 2016

WIU | TFN | SKS | MBS

Sejarah dan Teknologi Internet



Kajian #1

Minggu	Ke	Jenis	Kajian	Kompetensi Dasar	Pokok Bahasan	Sub Pokok Bahasa	Materi Bahasan	Metode	Media	Pustaka
1	1	Teori	<i>Sejarah Perkembangan Web</i>	Menunjukkan sejarah perkembangan internet	Sejarah perkembangan internet	Sejarah internet berdasarkan tahun	<ul style="list-style-type: none"> - Kontrak perkuliahan - Tujuan mata kuliah - Sekilas sejarah internet 	Ceramah Diskusi	Multimedia projector, papan tulis, komputer	1,2
2	2	Teori				Sejarah internet berdasarkan tokoh dan teknologi yang dihasilkan	<ul style="list-style-type: none"> - Tokoh-tokoh yang berperan dalam sejarah perkembangan internet - Teknologi penting yang dihasilkan oleh tokoh-tokoh tersebut - Sejarah dan latar belakang munculnya teknologi yang dihasilkan oleh tokoh-tokoh tersebut. - Manfaat internet bagi masyarakat luas 	Ceramah Diskusi	Multimedia projector, papan tulis, komputer	1,2
3	3	Teori		Menunjukkan sejarah perkembangan web	Sejarah perkembangan web	Generasi web dan Jenis-jenis web	<ul style="list-style-type: none"> - Pendahuluan tentang generasi web dan jenis-jenis web - Client-side-scripting - Karakteristik Web 1.0 - Teknologi yang digunakan pada Web 1.0 - Contoh nyata Web 1.0 - Kelebihan dan kekurangan Web 1.0 	Ceramah Diskusi	Multimedia projector, papan tulis, komputer	1,2,3
4	4	Teori					<ul style="list-style-type: none"> - Latar belakang munculnya Web 2.0 - Server-side-scripting - Karakteristik Web 2.0 - Teknologi yang digunakan pada Web 2.0 - Contoh nyata Web 2.0 - Kelebihan dan kekurangan Web 2.0 	Ceramah Diskusi	Multimedia projector, papan tulis, komputer	3,4,5, 6
5	Assessment Kajian 1									



Tahu kah Anda Apa itu?

- Internet atau internet
- URL dan DNS
- 5 Browser terpopuler
- HTTP atau HTTPs
- Web e-Commerce
- Social Media
- Web e-Auction



Bagaimana sejarah Internet?

The History of the Internet



USSR launches Sputnik into space.

In response, the USA creates the Advanced Research Projects Agency (ARPA) with the mission of becoming the leading force in science and new technologies.



1947



RAND Paul Baran, of the proposed a packet switched network.



1962



Email started

as a way for multiple users of a time-sharing mainframe computer to communicate.

1965

BBN had selected a **Honeywell** mini-computer as the base on which they would build the switch.



1968



The physical network was constructed in 1969, linking four nodes: University of California at Los Angeles, SRI (in Stanford), University of California at Santa Barbara, and University of Utah. **The network was wired together via 50 Kbps circuits.**

1969

Ray Tomlinson created what was to become the standard Internet e-mail address format, using the **@ sign** to separate user names from host names.



1971



The first e-mail program was created by Ray Tomlinson of BBN. ARPANET was currently using the Network Control Protocol or NCP to transfer data. This allowed communications between hosts running on the same network.

1972

Development began on the protocol later to be called **TCP/IP**; it was developed by a group headed by Vinton Cerf from Stanford and Bob Kahn from DARPA. This new protocol was to allow diverse computer networks to inter-connect and communicate with each other.

1973



First use of term **"Internet"** by Vint Cerf and Bob Kahn in

1974





First use of term **"Internet"** by Vint Cerf and Bob Kahn in paper on Transmission Control Protocol.



USENET (the decentralized news group network) was created by Steve Bellovin and programmers Tom Truscott and Jim Ellis. **IBM introduces BITNET** to work on emails and listserv systems.

Internet Activities Board released; TCP/IP becomes the standard for internet protocol; Domain Name System introduced to allow domain names to automatically be assigned an **IP number**.



The National Science Foundation began deploying its **new T1 lines**, which would be finished by 1988.



The new network **CERN** forms; **the number of hosts breaks 10,000**.



CERN opened its first external TCP/IP connections; the number of hosts breaks 100,000; **Arpanet ceases to exist**.

CSNET (which consisted of 56Kbps lines) was discontinued; U.S. greenlight for commercial enterprise to take place on the Internet; the National Science Foundation (NSF) creates the National Research and Education Network (NREN); **CERN releases the World Wide Web publicly**.

1973

TCP/IP, it was developed by a group headed by Vinton Cerf from Stanford and Bob Kahn from DARPA. This new protocol was to allow diverse computer networks to interconnect and communicate with each other.

1974

Dr. Robert M. Metcalfe develops Ethernet, which allowed **coaxial cable** to move data extremely fast. This was a crucial component to the development of **LANs**; Elizabeth II sends out an email on 26 March from the Royal Signals and Radar Establishment (RSRE) in Malvern; AT&T Bell Labs develops UUCP and UNIX.

1976

1979

The National Science Foundation releases **CSNET 56** to allow computers to **network without being connected** to the government networks.

1981

1983

MCI creates T1 lines to allow for faster transportation of information over the internet; **the number of Hosts breaks 1,000**.

1984



1985

The Internet Engineering Task Force or IETF was created to serve as a forum for technical coordination by contractors for DARPA working on ARPANET, US Defense Data Network (DDN), and the Internet core **gateway system**.

1986

1987

Soon after the completion of the T1 NSFNET backbone, traffic increased so quickly that plans immediately began on upgrading the network again.

1988

1989

A hypertext system is created and implemented by Tim Berners-Lee while working for CERN; **the first search engine is created** by McGill University, called the **Archie Search Engine**.

1990

1991

Internet Society is chartered; **World-Wide Web** released by CERN; NSFNET backbone upgraded to T3 (44.736Mbps); number of hosts breaks

1992



Internet; the National Science Foundation (NSF) creates the National Research and Education Network (NREN); **CERN releases the World Wide Web publicly.**

InterNIC released to provide general services, a database and Internet directory. **The first web browser, Mosaic (created by NCSA), is released.** Mosaic later becomes the Netscape browser which was the most popular in the mid 1990's. Marc Andreessen and NCSA and the University of Illinois develop a graphical user interface to the WWW, called "Mosaic for X".



NSF contracts out their access to four Internet providers; **NSF sells domains for a \$50 annual fee;** Netscape goes public with 3rd largest ever Nasdaq ipo share value; registration of domains is no longer free.



Arin is established to handle administration and registration of IP numbers, now handled by Network Solutions (InterNic).



A wireless technology called 802.11b, more commonly referred to as Wi-Fi, is standardized; Napster became the first peer-to-peer file sharing system.



Blackberry releases first Internet cell phone in the United States; P2P file sharing spread across the Internet.



The French Ministry of Culture bans the use of the word "e-mail" by government ministries, and adopts the use of the more French sounding "courriel".



Estonia offers Internet Voting nationally for local elections;

1990

1992

Internet Society is chartered; **World-Wide Web** released by CERN; NSFNET backbone upgraded to T3 (44.736Mbps); number of hosts breaks 1,000,000.



1993

1994

Many new networks were added to the NSF backbone; hundreds of thousands of new hosts were added to the INTERNET during this time period; Pizza Hut offers pizza ordering on its Web page; first Virtual, the first cyberbank, opens; **Yahoo! was founded.**



1996

1996

Internet2 project is initiated by 34 universities; Internet Service Providers begin appearing such as Sprint and MCI; Nokia releases first cell phone with Internet access.

NOKIA



1997

1998

Google was founded; Netscape releases source code for Navigator; Internet Corporation for Assigned Names and Numbers (ICANN) created to be able to oversee a number of Internet-related tasks.



1999

2000

The dot-com bubble burst, with the technology heavy NASDAQ Composite index peaking at 5,048.62 on March 10.



2001

2002

Internet2 now has



2003

2004

The Term **Web 2.0** rises in popularity when O'Reilly and MediaLive host the first Web 2.0 conference; Mydoom, the fastest ever spreading email computer worm is released; estimated 1 in 12 emails are infected.



2005

Search engine rankings are more important than ever, so





Siapakah Penemu Internet ??

Tokoh Penemuan Teknologi Internet

- Leonard Kleinrock
 - Packet Switching Theory, paper 1961
 - Communication Nets, book, 1964
 - Network Measurement Center at UCLA,
 - ARPANET measurement, 1968
- J.C.R. Licklider
 - Online man computer communication, paper, 1962
 - ARPA Computer program, 1962
 - First ARPA IPTO director, 1962



On the Shoulders of Giants

- 1961: Leonard Kleinrock published a work on packet switching
- 1962: J. Licklider described a worldwide network of computers called Galactic Network
- 1965: Larry Roberts designed the ARPANET that communicated over long distance links
- 1971: Ray Tomilson invents email at BBN
- 1972: Bob Kahn and Vint Cerf invented TCP for reliable packet transport



Internet?

Internet (kependekan dari interconnection-networking) adalah seluruh jaringan komputer yang saling terhubung menggunakan standar sistem global Transmission Control Protocol/Internet Protocol Suite (TCP/IP) sebagai protokol pertukaran paket (*packet switching communication protocol*) untuk melayani miliaran pengguna di seluruh dunia.

Rangkaian **internet** yang terbesar dinamakan **Internet**.

Cara menghubungkan rangkaian dengan kaidah ini dinamakan internetworking ("antarjaringan").



Diskusi tentang Internet?

Silahkan baca beberapa link referensi berikut,

- <https://id.wikipedia.org/wiki/Internet>
- https://id.wikipedia.org/wiki/Sejarah_Internet
- https://id.wikipedia.org/wiki/Internet_di_Indonesia

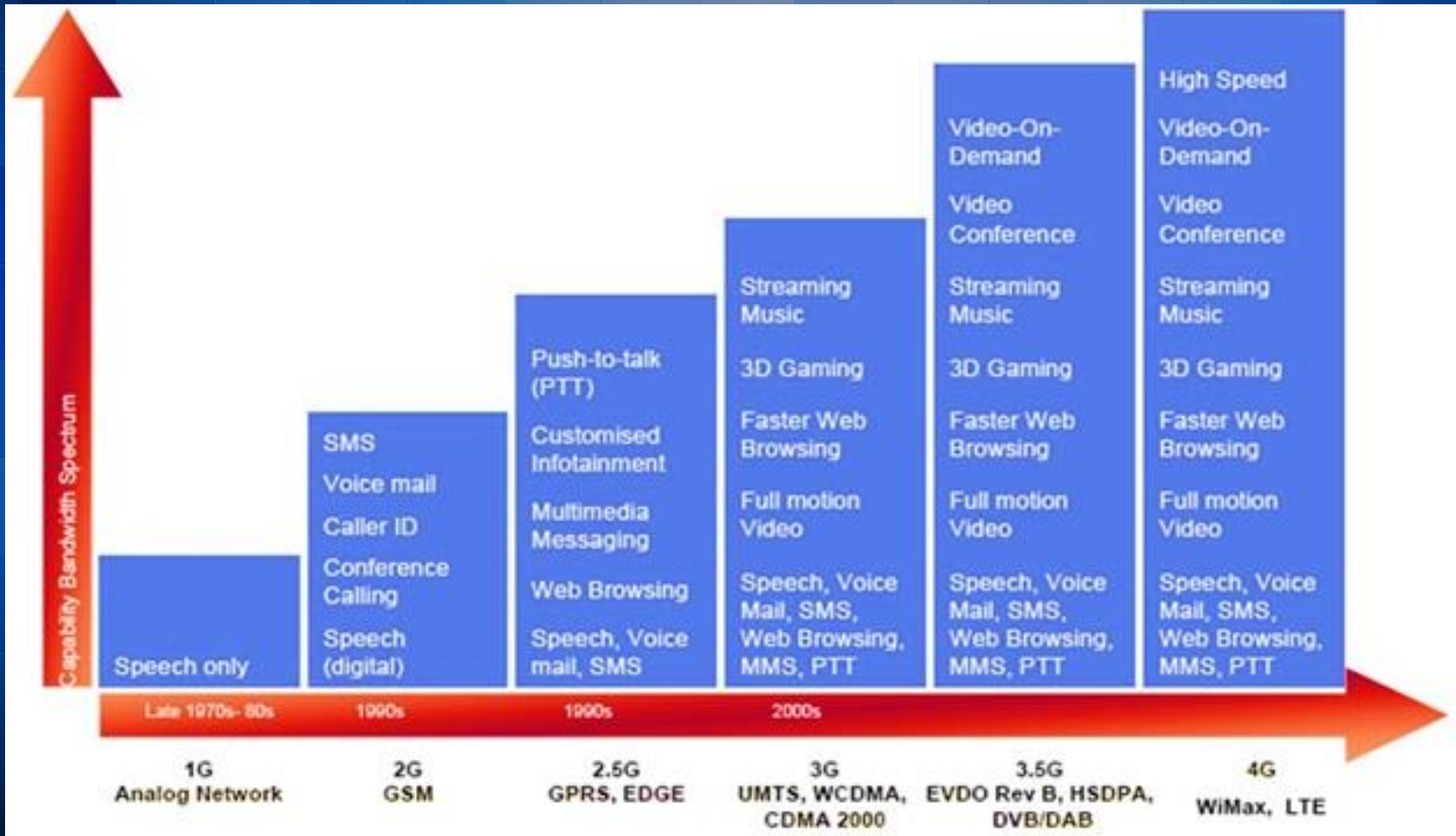


Diskusi tentang Internet

1. Jelaskan Peran ARPA, ARPANET, DARPA dalam perkembangan Internet
2. Tahun berapakah Komputer mulai terhubung dalam networking?
3. Apa itu ISP di Indonesia, dan apa itu APJII
4. Sebutkan Protocol apa saja yg ada pada Internet dan kegunaannya?
5. Siapa dan Kapan, Chat pertama kali ditemukan?
6. Siapakah "Bapak Internet"?
7. Sebutkan UU di Indonesia yang berkaitan dengan Internet
8. Jelaskan Perbedaan GPRS dan HSDPA untuk koneksi Internet?



Teknologi Akses Internet






Teknologi Akses Internet (Wireless)

Mobile technologies have evolved from voice focused to data focused with speeds reaching 170 Mbps with 4G



How Do 2G, 3G, and 4G Cell Phone Networks Differ?

WIRELESS GENERATION	 Download New York Times home page (1.4MB)	 Download 3-minute MP3 file (4MB)	 Download 3-minute web video (10MB)
2G Average speed 125 kbps	90 seconds	2 minutes, 16 seconds	10 minutes, 40 seconds
3G Average speed 800 kbps	14 seconds	40 seconds	1 minute, 40 seconds
4G Average speed 1.5 mbps	7 seconds	21 seconds	53 seconds









Typically 3G networks are five to ten times faster than 2G networks, and the first 4G networks will likely be twice as fast as 3G. Whereas 2G networks were designed primarily to convey voice (which can tolerate slow speeds because it includes relatively small amounts of data), 3G and 4G are progressively more efficient methods of conveying data (packets of 0's and 1's) over a given wireless frequency band, or spectrum.

Compared to 3G service, 4G service uses faster chipsets in phones and laptop modems and in wireless base stations, and uses more-advanced antennas to combat signal blockage. The accompanying chart tracks representative download speeds for different generations of wireless networks.

Teknologi Akses Internet (Wireless)

Mobile communications: from 1G to 4G

People

Generation	Device	Specifications	Generation	Device	Specifications
1G 		1G Year early 80s Standards AMPS, TACS Technology Analog Bandwidth – Data rates –	3G 		3G Year 2001 Standards UMTS / HSPA Technology digital Bandwidth Broad Band Data rates up to 2 Mbit/s SMS/MMS, Internet access, Video calls, Mobile TV
2G 		2G Year 1991 Standards GSM, GPRS, EDGE Technology Digital Bandwidth Narrow Band Data rates < 80 - 100 Kbit/s SMS/MMS	4G 		4G Year 2010 Standards LTE, LTE Advanced Technology digital Bandwidth Mobile Broad Band Data rates xDSL-like experience 1 hr HD movie in 6 minutes SMS/MMS, Internet access, Video calls, Mobile TV, Gaming services, Cloud computing



Sudah tahu tentang istilah penting berikut ini?

- GSM
- Broadband Access
- Byte
- Mbps atau MBps
- LTE
- HSDPA
- ADSL
- WiFi dan MiFi



Manfaat Internet?

Smart Classroom

the face of education, and it's time to imagine what classrooms will be like in the 21st century classroom.



...but just 1 in 5 of their classrooms have the right level of technology

...FOLLOWING...
...RATIO DRASTICALLY



enrollments saw growth while higher education at population only... % growth

...nt online...
...ional success

Learning Analytics

Help teachers assess top concerns and achievements related to their students



Registration for the Learning Analytics and Knowledge conference doubled between 2011 and 2012



One system claims to predict whether a student's likelihood of sufficient course completion with about 70% accuracy, highlighting risk factors for individual students



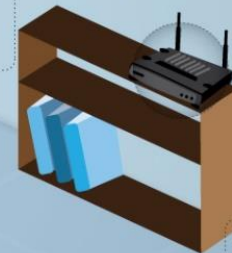
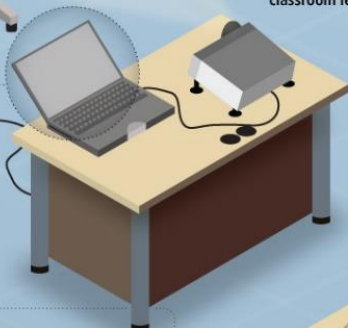
Open Source Textbooks

In the next decade, open source textbooks are expected to grow to 25% of the textbook market



6 in 10 students have used a digital textbook - just 4 in 10 had in 2011 -

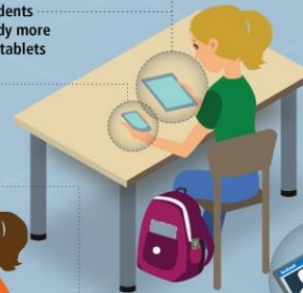
By 2013, e-textbooks may comprise 11% of textbook revenue



81% of teachers believe tablets enrich classroom learning

86% of students believe they study more efficiently with tablets

1 in 5 students have used a mobile app to keep their coursework organized



29% of teachers use social media for coursework, compared to now 80% of college professors

59% of students would like to use their own mobile devices to enhance learning



Top 3 Reasons for Teachers to Use Technology in the Classroom



Adapt to diverse learning styles



Boost student motivation



Enhance the material being taught



Over 51% of colleges cited wireless upgrades as their tech priority in 2011-12 given a 60% increase in mobile devices on campus in the previous year

Integration of Social Networks

Engaging students with a free tool they already use can help them learn in new ways, gain focus and increase participation

A+

One social media pilot program assisted in a class' 50% rise in grades



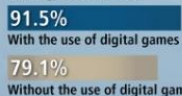
4 in 10 students believe integrating social networks into the classroom would benefit their education

Games and Gamification

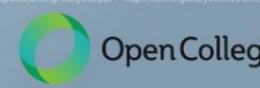


43% of teachers have used online games in the classroom

In one study, games raised average test scores:



Sources: <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/> • <http://www.pbs.org/about/newsarchive/2012/teacher-survey-felc/>



Manfaat Internet dan Aplikasi?

- e-Commerce
- e-Government
- e-Health
- e-Learning
- e-Money
- e-Business
-



Discuss?

- Bagaimana Sejarah Teknologi Internet?
- Jelaskan bagaimana koneksi Internet bisa terjadi?
- Apa Manfaat dari penggunaan Internet bagi kehidupan manusia saat ini dan masa mendatang?



Link & Book Reference

- <http://www.w3schools.com/>
- Deitel, P.J. and Deitel, H. M., 2008, Internet & World Wide Web How to Program, Pearson Prentice Hall. USA.
- Wikipedia
- Berbagai sumber "Internet Access" di Google

