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4   101/10/01  Information Systems, Organization, and Strategy:
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5   101/10/08  IT Infrastructure and Emerging Technologies:
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Chap. 7
Telecommunications, the Internet, and Wireless Technology: Google, Apple, and Microsoft
Case Study: Google, Apple, and Microsoft (Chap. 7)

Google, Apple, and Microsoft struggle for Your Internet Experience

1. Define and compare the business models and areas of strength of Apple, Google, and Microsoft.

2. Why is mobile computing so important to these three firms? Evaluate the mobile platform offerings of each firm.

3. What is the significance of applications and app stores to the success or failure of mobile computing?

4. Which company and business model do you believe will prevail in this epic struggle? Explain your answer.

5. What difference would it make to you as a manager or individual consumer if Apple, Google, or Microsoft dominated the Internet experience? Explain your answer.

COMPONENTS OF A SIMPLE COMPUTER NETWORK

CORPORATE NETWORK INFRASTRUCTURE

PACKED-SWITCHED NETWORKS AND PACKET COMMUNICATIONS

THE TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL (TCP/IP) REFERENCE MODEL

FUNCTIONS OF THE MODEM

- Telephone line
- Cable system
- Wireless media
- Analog device

NETWORK TOPOLOGIES

Star topology

Ring topology

Bus topology

BP’S SATELLITE TRANSMISSION SYSTEM

THE DOMAIN NAME SYSTEM

Internet Root Domain
Top-level domains
Second-level domains
Third-level domains
Hosts

sales.google.com

computer1.sales.google.com

Computer1

INTERNET NETWORK ARCHITECTURE

CLIENT/SERVER COMPUTING ON THE INTERNET

- Web browser
- Other client software

- Web (HTTP) server
  - Simple Mail Transfer Protocol (SMTP)
  - Domain Name Serving (DNS) utility
  - File Transfer Protocol (FTP)
  - Network News Transfer Protocol (NNTP)

A VIRTUAL PRIVATE NETWORK USING THE INTERNET

HOW GOOGLE WORKS

1. User enters query

2. Google’s Web servers receive the request. Google uses an estimated 450,000 PCs linked together and connected to the Internet to handle incoming requests and produce the results.

3. Request is sent to Google’s index servers that describe which pages contain the keywords matching the query and where those pages are stored on the document servers.

4. Using the PageRank software, the system measures the "importance" or popularity of each page by solving an equation with more than 500 million variables and two billion terms. These are likely the "best" pages for the query.

5. Small text summaries are prepared for each Web page.

6. Results delivered to user, 10 to a page.
TOP U.S. WEB SEARCH ENGINES

- Google: 72%
- Bing: 10%
- Yahoo: 14%
- Ask: 2%
- Others: 2%

Web 2.0

• Four defining features
  1. Interactivity
  2. Real-time user control
  3. Social participation
  4. User-generated content

• Technologies and services behind these features
  – Cloud computing
  – Blogs/RSS
  – Mashups & widgets
  – Wikis
  – Social networks

Web 3.0: The Future Web

• Web 3.0 – the Semantic Web
  – Effort of W3C to add meaning to existing Web
  – Make searching more relevant to user

• Other visions
  – More “intelligent” computing
  – 3D Web
  – Pervasive Web
  – Increase in cloud computing, SaaS
  – Ubiquitous connectivity between mobile and other access devices
  – Make Web a more seamless experience

A BLUETOOTH NETWORK (PAN)

Smartphone → Cell phone → Printer

Wireless keyboard → User computer → Cell phone

AN 802.11 WIRELESS LAN

HOW RFID WORKS

A microchip holds data including an identification number. The rest of the tag is an antenna that transmits data to a reader.

Has an antenna that constantly transmits. When it senses a tag, it wakes it up, interrogates it, and decodes the data. Then it transmits the data to a host system over wired or wireless connections.

Processes the data from the tag that have been transmitted by the reader.

A WIRELESS SENSOR NETWORK

資訊管理個案
(Case Study for Information Management)

1. 請同學於資訊管理個案討論前
   應詳細研讀個案，並思考個案研究問題。

2. 請同學於上課前複習相關資訊管理相關
   理論，以作為個案分析及擬定管理對策的
   依據。

3. 請同學於上課前
   先繳交個案研究問題書面報告。
References


– 周宣光 譯 (2011)，資訊管理系統—管理數位化公司，第12版，東華書局