Hot Issues of Information Management
Telecommunications, the Internet, and Wireless Technology:
Google, Apple, and Microsoft (Chap. 7)

1051IM4C08
TLMXB4C (M0842)
Thu 7,8 (14:10-16:00) B709

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Assistant Professor
Dept. of Information Management, Tamkang University

http://mail.tku.edu.tw/myday/
2016-11-24
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Content</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>2016/09/15</td>
<td>Mid-Autumn Festival (Day off)</td>
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<tr>
<td>2</td>
<td>2016/09/22</td>
<td>Introduction to Case Study for Information Management Hot Topics</td>
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<td>3</td>
<td>2016/09/29</td>
<td>Information Systems in Global Business: UPS (Chap. 1) (pp.53-54)</td>
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<td>4</td>
<td>2016/10/06</td>
<td>Global E-Business and Collaboration: P&amp;G (Chap. 2) (pp.84-85)</td>
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<td>5</td>
<td>2016/10/13</td>
<td>Information Systems, Organization, and Strategy: Starbucks (Chap. 3) (pp.129-130)</td>
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<td>2016/10/20</td>
<td>Ethical and Social Issues in Information Systems: Facebook (Chap. 4) (pp.188-190)</td>
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<td>週次 (Week)</td>
<td>日期 (Date)</td>
<td>內容 (Subject/Topics)</td>
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<td>7 2016/10/27</td>
<td>IT Infrastructure and Emerging Technologies: Amazon and Cloud Computing (Chap. 5) (pp. 234-236)</td>
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<td>8 2016/11/03</td>
<td>Foundations of Business Intelligence: IBM and Big Data (Chap. 6) (pp.261-262)</td>
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<td>9 2016/11/10</td>
<td>Midterm Report (期中報告)</td>
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<td>10 2016/11/17</td>
<td>期中考試週</td>
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<td>11 2016/11/24</td>
<td>Telecommunications, the Internet, and Wireless Technology: Google, Apple, and Microsoft (Chap. 7) (pp.318-320)</td>
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<tr>
<td>12 2016/12/01</td>
<td>Enterprise Applications: Summit and SAP (Chap. 9) (pp.396-398)</td>
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週次  日期  內容（Subject/Topics）
13  2016/12/08  E-commerce: Zagat (Chap. 10) (pp.443-445)
14  2016/12/15  Enhancing Decision Making: Zynga (Chap. 12) (pp.512-514)
15  2016/12/22  Managing Projects: NYCAPS and CityTime (Chap. 14) (pp.586-588)
16  2016/12/29  Final Report I (期末報告 I)
17  2017/01/05  Final Report II (期末報告 II)
18  2017/01/12  期末考試週
Management Information Systems: Managing the Digital Firm

1. Organization, Management, and the Networked Enterprise
2. Information Technology Infrastructure
3. Key System Applications for the Digital Age
4. Building and Managing Systems

Chap. 7
Telecommunications, the Internet, and Wireless Technology:
Google, Apple, and Microsoft
Apple, Google, and Microsoft Battle 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, and closed vs. open app standards 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 a business or to an individual consumer if Apple, Google, or Microsoft dominated the Internet experience? Explain your answer.
Overview of Fundamental MIS Concepts

Management

Organization

Technology

Business Challenges

Information System

Business Solutions

Business Model

- Key Partners
- Key Activities
- Key Resources
- Value Proposition
- Customer Relationships
- Channels
- Customer Segments
- Cost Structure
- Revenue Streams

Understanding Business Model

• Business Model
• Revenue Model

• Business Strategy
• Business Strategy and Information System Alignment
Business Model
Value
Definition of Business Model

A business model describes the rationale of how an organization creates, delivers, and captures value.

E-commerce

Business Models

1. Portal
2. E-tailer
3. Content Provider
4. Transaction Broker
5. Market Creator
6. Service Provider
7. Community Provider

E-commerce

Revenue Models

1. Advertising
2. Sales
3. Subscription
4. Free/Freemium
5. Transaction Fee
6. Affiliate

Types of E-commerce

1. Business-to-consumer (B2C)
2. Business-to-business (B2B)
3. Consumer-to-consumer (C2C)
4. Mobile commerce (m-commerce)

Business Model Canvas Explained

Source: http://www.youtube.com/watch?v=QoAOzMTLP5s
## The 9 Building Blocks of Business Model

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key Activities</th>
<th>Value Proposition</th>
<th>Customer Relationships</th>
<th>Customer Segments</th>
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<td>8</td>
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<tr>
<td>Key Resources</td>
<td>Channels</td>
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<tr>
<td>Cost Structure</td>
<td>Revenue Streams</td>
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The 9 Building Blocks of Business Model

The 9 Building Blocks of Business Model

1. Customer Segments
   – An organization serves one or several Customer Segments.

2. Value Propositions
   – It seeks to solve customer problems and satisfy customer needs with value propositions.

3. Channels
   – Value propositions are delivered to customers through communication, distribution, and sales Channels.

4. Customer Relationships
   – Customer relationships are established and maintained with each Customer Segment.

5. Revenue Streams
   – Revenue streams result from value propositions successfully offered to customers.

6. Key Resources
   – Key resources are the assets required to offer and deliver the previously described elements...

7. Key Activities
   – ...by performing a number of Key Activities.

8. Key Partnerships
   – Some activities are outsourced and some resources are acquired outside the enterprise.

9. Cost Structure
   – The business model elements result in the cost structure.

# Business Model

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<tbody>
<tr>
<td>Customer Segments</td>
<td>Value Proposition</td>
<td>Channels</td>
<td>Customer Relationships</td>
<td>Revenue Streams</td>
<td>Key Resources</td>
<td>Key Activities</td>
<td>Key Partners</td>
<td>Cost Structure</td>
</tr>
</tbody>
</table>


24
Business Model Generation

Business Model Generation

THE CANVAS OF BUSINESS MODEL GENERATION

Reach
A mix of direct and indirect Channels and a phased approach optimizes reach and margins. The story of the book lends itself well to viral marketing and word-of-mouth promotion.

Revenues
The book was financed through advanced sales and fees paid by co-creators. Additional revenues come from customized versions for companies and their clients.

Facebook – World’s leading Social Networking Site (SNS)

**Key Partners**
- Content Partners (TV Shows, Movies, Music, News Articles)

**Key Activities**
- Platform Development
- Data Center Operations Mgmt

**Key Resources**
- Facebook Platform
- Technology Infrastructure

**Value Propositions**
- Connect with your friends, Discover & Learn, Express yourself
- Reach, Relevance, Social Context, Engagement
- Personalized and Social Experiences, Social Distribution, Payments

**Relationships**
- Same-side Network Effects
- Cross-side Network Effects

**Customer Segments**
- Internet Users
- Advertisers and Marketers
- Developers

**Channels**
- Website, Mobile Apps
- Facebook Ads, Facebook Pages
- Developer Tools and APIs

**Cost Structure**
- Data center costs
- Marketing and Sales
- Research and Development
- General and Administrative

**Revenue Streams**
- Free
- Ad Revenues
- Payment Revenues

Twitter Business Model

Key Partners
- Search Vendors
- Device Vendors
- Media companies
- Mobile Operators

Key Activities
- Platform Development

Value Propositions
- Stay connected
- News/Events
- Targeted Marketing
- Twitter Apps

Key Resources
- Twitter.com Platform

Relationships
- Channels
  - Website, Desktop Apps, Mobile Apps, SMS
  - Twitter API

Customer Segments
- Users
- Enterprises
- Developers

Cost Structure
- Employees
- Servers

Revenue Streams
- Licensing Data Streams
- Promoted Accounts
- Promoted Tweets
- Promoted Trends
- Analytics
# Google Business Model

## Key Partners
- Distribution Partners
- Open Handset Alliance
- OEMs (for Chrome OS devices)

## Key Resources
- Datacenters
- IPs, Brand

## Key Activities
- R&D – Build New Products, Improve Existing products
- Manage Massive IT Infrastructure

## Value Propositions
- Web Search, Gmail, Google+ (Targeted Ads)
- Targeted Ads using Adwords (CPC)
- Extend Ad campaigns using Adsense
- Display Advertising Mgmt Services
- OS and Platforms – Android, Chrome OS
- Hosted web-based Google Apps

## Relationships
- Automation (where possible)
- Dedicated Sales for large accounts
- Global Sales and Support Teams
- Multi-product Sales force

## Customer Segments
- Internet Users
- Advertisers, Ad Agencies
- Google Network Members
- Mobile device owners
- Developers
- Enterprises

## Cost Structure
- Traffic Acquisition Costs
- R&D Costs (mainly personnel)
- Data center operations
- S&M, G&A

## Revenue Streams
- Ad Revenues – Google websites
- Ad Revenues – Google n/w websites
- Enterprise Product Sales
- Free

## LinkedIn – World’s Largest Professional Network

<table>
<thead>
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<th>Customer Segments</th>
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<tbody>
<tr>
<td></td>
<td>Platform Development</td>
<td>Manage Professional Identity and Build Professional Network</td>
<td>Same-side Network Effects</td>
<td>Internet Users</td>
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<tr>
<td>Equinix</td>
<td>LinkedIn Platform</td>
<td>Identify and Reach the Right Talent</td>
<td>Cross-side Network Effects</td>
<td>Recruiters</td>
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<tr>
<td>(for data center facilities)</td>
<td>LinkedIn Website, Mobile Apps</td>
<td>Reach the Target Audience</td>
<td></td>
<td>Advertisers and Marketers</td>
</tr>
<tr>
<td>Content Providers</td>
<td>Field Sales</td>
<td>Access to LinkedIn Database Content via APIs and Widgets</td>
<td></td>
<td>Developers</td>
</tr>
</tbody>
</table>

### Key Resources
- LinkedIn Platform

### Cost Structure
- Web Hosting costs
- Marketing and Sales
- Product Development
- General and Administrative

### Revenue Streams
- Free Offerings and Premium Subscriptions
- Hiring Solutions
- Marketing Solutions

Business Model of Banking companies

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key Activities</th>
<th>Value Propositions</th>
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<th>Customer Segments</th>
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<tr>
<td>Investments partners</td>
<td>Branch Operations</td>
<td>Deposit Products (Lower Interest Rates)</td>
<td>Personal Assistance</td>
<td>Retail and Corporate Customers (Depositors)</td>
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<tr>
<td>Technology vendors</td>
<td>Call center operations</td>
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<td>Automation where possible</td>
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<tr>
<td>Regulatory Agencies</td>
<td>IT Operations</td>
<td></td>
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<tr>
<td>Key Resources</td>
<td>Physical and IT Infrastructure</td>
<td>Loan Products (Higher Interest Rates)</td>
<td></td>
<td>Retail and Corporate Customers (Borrowers)</td>
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<td></td>
<td>Loan Assets</td>
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<table>
<thead>
<tr>
<th>Cost Structure</th>
<th>Revenue Streams</th>
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<tbody>
<tr>
<td>Interest Expenses</td>
<td>Interest Income</td>
</tr>
<tr>
<td>Channel Costs</td>
<td>Fee Income</td>
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</table>

Customer Value
“Meeting needs profitably”
Value

the sum of the tangible and intangible benefits and costs

Value

Total customer benefit

Total customer cost

Customer perceived value

Customer Value Triad

Quality, Service, and Price (qsp)

Value and Satisfaction

• Marketing
  – identification, creation, communication, delivery, and monitoring of customer value.

• Satisfaction
  – a person’s judgment of a product’s perceived performance in relationship to expectations

Building Customer Value, Satisfaction, and Loyalty

Customer Perceived Value

- Product benefit
- Services benefit
- Personnel benefit
- Image benefit

Total customer benefit

- Monetary cost
- Time cost
- Energy cost
- Psychological cost

Total customer cost

Customer perceived value

Satisfaction

“a person’s feelings of pleasure or disappointment that result from comparing a product’s perceived performance (or outcome) to expectations”

Loyalty

“a deeply held commitment to rebuy or repatronize a preferred product or service in the future despite situational influences and marketing efforts having the potential to cause switching behavior.”

Customer Perceived Value, Customer Satisfaction, and Loyalty


Customer Expectations

Adapted from: http://www.r3now.com/what-is-the-proper-relationship-for-the-cio-ceo-and-cfo/
# CEO CIO CMO

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Vision</th>
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<tr>
<td>Mission</td>
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<th>Tactics</th>
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<th>Operations</th>
<th>Objectives</th>
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<th>Tasks</th>
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Adapted from: [http://www.argowiki.com/index.php?title=The_Relationship_Between_the_CEO_and_CIO](http://www.argowiki.com/index.php?title=The_Relationship_Between_the_CEO_and_CIO)
Nothing is so practical as a good theory

Components of a Simple Computer Network

Corporate Network Infrastructure

Packet-Switched Networks and Packet Communications

The Transmission Control Protocol/Internet Protocol (TCP/IP) Reference Model

Functions of the Modem

The Domain Name System

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)

How Voice over IP Works

A Virtual Private Network Using the Internet

The Global Internet

• Search engines
  – Started as simpler programs using keyword indexes
  – Google improved indexing and created page ranking system

• Mobile search: 20% of all searches in 2012

• Search engine marketing
  – Major source of Internet advertising revenue

• Search engine optimization (SEO)
  – Adjusting Web site and traffic to improve rankings in search engine results

The Global Internet

• Social search
  – Google +1, Facebook Like

• Semantic search
  – Anticipating what users are looking for rather than simply returning millions of links

• Intelligent agent shopping bots
  – Use intelligent agent software for searching Internet for shopping information
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.
Web 2.0

• Second-generation services
• Enabling collaboration, sharing information, and creating new services online

• Features
  – Interactivity
  – Real-time user control
  – Social participation (sharing)
  – User-generated content

Web 2.0 services and tools

• **Blogs**: chronological, informal Web sites created by individuals
  – RSS (Really Simple Syndication): syndicates Web content so aggregator software can pull content for use in another setting or viewing later
  – Blogosphere
  – Microblogging

• **Wikis**: collaborative Web sites where visitors can add, delete, or modify content on the site

• **Social networking sites**: enable users to build communities of friends and share information

Web 3.0: The “Semantic Web”

• A collaborative effort led by W3C to add layer of meaning to the existing Web
• Goal is to reduce human effort in searching for and processing information
• Making Web more “intelligent” and intuitive
• Increased communication and synchronization with computing devices, communities
• “Web of things”
• Increased cloud computing, mobile computing

A Bluetooth Network (PAN)

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

Case Study:
Summit and SAP (Chap. 9) (pp. 396-398)

Summit Electric Lights Up with a New ERP System

1. Which business processes are the most important at Summit Electric Supply? Why?
2. What problems did Summit have with its old systems? What was the business impact of those problems?
3. How did Summit’s ERP system improve operational efficiency and decision making? Give several examples.
4. Describe two ways in which Summit’s customers benefit from the new ERP system.
5. Diagram Summit’s old and new process for handling chargebacks.

資訊管理專題
(Hot Issues of Information Management)

1. 請同學於資訊管理專題個案討論前
   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
   先繳交資訊管理專題個案研究問題書面報告。

4. 上課時間地點：
   週四 7,8 (14:10-16:00) B709
References


– Kenneth C. Laudon & Jane P. Laudon原著，游張松主編，陳文生翻譯 (2014)，資訊管理系統，第13版，滄海