Information Systems in Global Business: UPS (Chap. 1)

Min-Yuh Day
Assistant Professor
Dept. of Information Management, Tamkang University

http://mail.tku.edu.tw/myday/
2016-09-29
<table>
<thead>
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<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
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<tbody>
<tr>
<td>1</td>
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<td>中秋節 (放假一天) (Mid-Autumn Festival) (Day off)</td>
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<td>2</td>
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<td>Introduction to Case Study for Information Management Hot Topics</td>
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<td>3</td>
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<td>Information Systems in Global Business: UPS (Chap. 1) (pp.53-54)</td>
</tr>
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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>
</tr>
<tr>
<td>5</td>
<td>2016/10/13</td>
<td>Information Systems, Organization, and Strategy: Starbucks (Chap. 3) (pp.129-130)</td>
</tr>
<tr>
<td>6</td>
<td>2016/10/20</td>
<td>Ethical and Social Issues in Information Systems: Facebook (Chap. 4) (pp.188-190)</td>
</tr>
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<td>日期 (Date)</td>
<td>內容 (Subject/Topics)</td>
</tr>
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</tr>
<tr>
<td>7 2016/10/27</td>
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<td>IT Infrastructure and Emerging Technologies: Amazon and Cloud Computing (Chap. 5) (pp. 234-236)</td>
</tr>
<tr>
<td>8 2016/11/03</td>
<td>2016/11/03</td>
<td>Foundations of Business Intelligence: IBM and Big Data (Chap. 6) (pp.261-262)</td>
</tr>
<tr>
<td>9 2016/11/10</td>
<td>2016/11/10</td>
<td>Midterm Report (期中報告)</td>
</tr>
<tr>
<td>10 2016/11/17</td>
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<td>期中考試週</td>
</tr>
<tr>
<td>11 2016/11/24</td>
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<td>Telecommunications, the Internet, and Wireless Technology: Google, Apple, and Microsoft (Chap. 7) (pp.318-320)</td>
</tr>
<tr>
<td>12 2016/12/01</td>
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<td>Enterprise Applications: Summit and SAP (Chap. 9) (pp.396-398)</td>
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<tr>
<td>13</td>
<td>2016/12/08</td>
<td>E-commerce: Zagat (Chap. 10) (pp.443-445)</td>
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<tr>
<td>14</td>
<td>2016/12/15</td>
<td>Enhancing Decision Making: Zynga (Chap. 12) (pp.512-514)</td>
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<tr>
<td>15</td>
<td>2016/12/22</td>
<td>Managing Projects: NYCAPS and CityTime (Chap. 14) (pp.586-588)</td>
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<tr>
<td>16</td>
<td>2016/12/29</td>
<td>Final Report I (期末報告 I)</td>
</tr>
<tr>
<td>17</td>
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<td>Final Report II (期末報告 II)</td>
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<tr>
<td>18</td>
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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. 1
Information Systems in Global Business: UPS
Case Study: UPS (Chap. 1) (pp. 53-54)

UPS Competes Globally with Information Technology

1. What are the inputs, processing, and outputs of UPS’s package tracking system?

2. What technologies are used by UPS? How are these technologies related to UPS’s business strategy?

3. What strategic business objectives do UPS’s information systems address?

4. What would happen if UPS’s information systems were not available?
Information Management (MIS) Information Systems

Overview of Fundamental MIS Concepts

Business Challenges

Management

Organization

Information System

Technology

Business Solutions

Business Model

Key Partners | Key Activities | Value Proposition | Customer Relationships | Channels | Customer Segments

Key Resources | | |

Cost Structure | Revenue Streams

Ponsse: Efficiency in Wood Harvesting with Information System

Source: http://www.ponsse.com/
Overview of Fundamental MIS Concepts using an integrated framework for describing and analyzing information systems

- Develop new production processes
- Develop new management techniques
- Increase use of data by managers
- Build new business production processes
- Train new channels of information flow
- Train employees in use of the systems
- Develop GPS systems for field use
- Create email links with operators
- Develop data base to receive information

Business Challenges
- New sources of competition
- Declining customer base
- Increasing costs

Business Solutions
- Optimize utilization of forests
- Increase production efficiency
- Coordinate production process
- Display and report GPS location data
- Reports on production
- Provide online coordination

Information Systems in Global Business

1. How are information systems transforming business and what is their relationship to globalization?

2. Why are information systems so essential for running and managing a business today?

3. What exactly is an information system? How does it work? What are its management, organization, and technology components?

4. What are complementary assets? Why are complementary assets essential for ensuring that information systems provide genuine value for an organization?

5. What academic disciplines are used to study information systems? How does each contribute to an understanding of information systems? What is a sociotechnical systems perspective?

How information systems are transforming business

• Emerging mobile digital platform
• Growing business use of “big data”
• Growth in cloud computing

Globalization opportunities

• Internet has drastically reduced costs of operating on global scale
• Increases in foreign trade, outsourcing
• Presents both challenges and opportunities

The Interdependence Between Organizations and Information Technology

Strategic Business Objectives of Information Systems

1. Operational Excellence
2. New Products, Services and Business Models
3. Customer and Supplier Intimacy
4. Improved Decision Making
5. Competitive Advantage
6. Survival

1. Operational Excellence

• Improvement of efficiency to attain higher profitability

• Information systems, technology an important tool in achieving greater efficiency and productivity

• Walmart’s Retail Link system links suppliers to stores for superior replenishment system

2. New Products, Services, and Business Models

- **Business model**: describes how company produces, delivers, and sells product or service to create wealth

- Information systems and technology a major enabling tool for new products, services, business models
  - Examples: Apple’s iPad, Google’s Android OS, and Netflix

3. Customer and Supplier Intimacy

• Serving customers well leads to customers returning, which raises revenues and profits.
  – Example: High-end hotels that use computers to track customer preferences and used to monitor and customize environment

• Intimacy with suppliers allows them to provide vital inputs, which lowers costs.
  – Example: JCPenney’s information system which links sales records to contract manufacturer

4. Improved Decision Making

• Without accurate information:
  – Managers must use forecasts, best guesses, luck
  – Results in:
    • Overproduction, underproduction
    • Misallocation of resources
    • Poor response times
  – Poor outcomes raise costs, lose customers

• Example:
  – Verizon’s Web-based digital dashboard to provide managers with real-time data on customer complaints, network performance, line outages

5. Competitive advantage

• Delivering better performance
• Charging less for superior products
• Responding to customers and suppliers in real time
• Examples: Apple, Walmart, UPS

6. Survival

• Information technologies as necessity of business

• Industry-level changes
  – Example: Citibank’s introduction of ATMs

• Governmental regulations requiring record-keeping
  – Examples: Toxic Substances Control Act, Sarbanes-Oxley Act

Information Systems Are More Than Computers

Dimensions of **Information Systems**

- **Organizations**
  - People, structure, business processes, politics, and culture.

- **Management**
  - Make sense out of the many situations faced by organizations, make decisions, and formulate action plans to solve organizational problems.

- **Information Technology**
  - Computer hardware, software, data management technology, networking and telecommunications technology

Perspectives on Information Systems: Data and Information

Functions of an Information System

![Diagram of Information System Functions]

Levels in a Firm

- Senior Management
- Middle Management
  - Scientists and knowledge workers
- Operational Management
  - Production and service workers
  - Data workers

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>PURPOSE</th>
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</thead>
<tbody>
<tr>
<td>Sales and marketing</td>
<td>Selling the organization’s products and services</td>
</tr>
<tr>
<td>Manufacturing and production</td>
<td>Producing and delivering products and services</td>
</tr>
<tr>
<td>Finance and accounting</td>
<td>Managing the organization’s financial assets and maintaining the organization’s financial records</td>
</tr>
<tr>
<td>Human resources</td>
<td>Attracting, developing, and maintaining the organization’s labor force; maintaining employee records</td>
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IT ISN’T JUST TECHNOLOGY: A BUSINESS PERSPECTIVE ON INFORMATION SYSTEMS

The Business Information Value Chain

Information Processing Activities

Data Collection and Storage
Transformation into Business Systems
Dissemination

Business Processes

Supply Chain Management
Enterprise Management
Customer Management
Knowledge Management

Management Activities

Planning
Coordinating
Controlling
Modeling and Decision Making

Firm Profitability and Strategic Position

Business Value

The Business Information Value Chain

- From a business perspective, information systems are part of a series of value-adding activities for acquiring, transforming, and distributing information that managers can use to improve decision making, enhance organizational performance, and, ultimately, increase firm profitability.

COMPLEMENTARY SOCIAL, MANAGERIAL, AND ORGANIZATIONAL ASSETS REQUIRED TO OPTIMIZE RETURNS FROM INFORMATION TECHNOLOGY INVESTMENTS

Organizational assets

- Supportive organizational culture that values efficiency and effectiveness
- Appropriate business model
- Efficient business processes
- Decentralized authority
- Distributed decision-making rights
- Strong IS development team

Managerial assets

• Strong senior management support for technology investment and change
• Incentives for management innovation
• Teamwork and collaborative work environments
• Training programs to enhance management decision skills
• Management culture that values flexibility and knowledge-based decision making.

Social assets

• The Internet and telecommunications infrastructure
• IT-enriched educational programs raising labor force computer literacy
• Standards (both government and private sector)
• Laws and regulations creating fair, stable market environments
• Technology and service firms in adjacent markets to assist implementation

Contemporary Approaches to Information Systems

Technical Approaches
- Computer Science
- Operations Research
- Management Science

Behavioral Approaches
- Psychology
- Economics
- Sociology

Contemporary Approaches to Information Systems

• Technical Approach
• Behavioral Approach
• Sociotechnical Systems
A Sociotechnical Perspective on Information Systems

Business Model
Business Model

Key Partners

Key Activities

Key Resources

Value Proposition

Customer Relationships

Channels

Customer Segments

Cost Structure

Revenue Streams

Definition of Business Model

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

Definition of Business Strategy

A business strategy is a long term plan of action designed to achieve a particular goal or set of goals or objectives.

Source: (Ostenwalder, Pigneur and Tucci, 2005)
Business Model Canvas

https://www.youtube.com/watch?v=QoAOzMTLP5s
Business Model Canvas

Infrastructure Management

Product

Customer Interface

Financial Aspects

Source: [http://nonlinearthinking.typepad.com/nonlinear_thinking/2008/07/the-business-model-canva](http://nonlinearthinking.typepad.com/nonlinear_thinking/2008/07/the-business-model-canva.html) [https://www.youtube.com/watch?v=QoAOzMTLP5s](https://www.youtube.com/watch?v=QoAOzMTLP5s)
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>
<td>6</td>
<td>2</td>
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| Key Resources | Channels | |
|---------------|----------||
| 7             | 3        | |

<table>
<thead>
<tr>
<th>Cost Structure</th>
<th>Revenue Streams</th>
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<td>9</td>
<td>5</td>
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</table>

The 9 Building Blocks of Business Model

1. Customer Segments

Defines the different groups of people or organizations an enterprise aims to reach and serve

2. Value Propositions

Describes the bundle of products and services that create value for a specific Customer Segment

3. Channels

Describes how a company communicates with and reaches its Customer Segments to deliver a Value Proposition

4. Customer Relationships

Describes the types of relationships a company establishes with specific Customer Segments

5. Revenue Streams

Represents the cash a company generates from each Customer Segment (costs must be subtracted from revenues to create earnings)

6. Key Resources

Describes the most important assets required to make a business model work

7. Key Activities

Describes the most important things a company must do to make its business model work

8. Key Partnerships

Describes the network of suppliers and partners that make the business model work

9. Cost Structure

Describes all costs incurred to operate a 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.

The 9 Building Blocks of Business Model

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 Generation

Business Model Generation

**The Canvas of Business Model Generation**

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

<table>
<thead>
<tr>
<th>Key Partners</th>
<th>Key Activities</th>
<th>Value Propositions</th>
<th>Relationships</th>
<th>Customer Segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Partners (TV Shows, Movies, Music, News Articles)</td>
<td>Platform Development</td>
<td>Connect with your friends, Discover &amp; Learn, Express yourself</td>
<td>Same-side Network Effects</td>
<td>Internet Users</td>
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<tr>
<td></td>
<td>Data Center Operations Mgmt</td>
<td>Reach, Relevance, Social Context, Engagement</td>
<td>Cross-side Network Effects</td>
<td>Advertisers and Marketers</td>
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<td></td>
<td></td>
<td>Personalized and Social Experiences, Social Distribution, Payments</td>
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<td>Developers</td>
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</tbody>
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### Key Resources
- Facebook Platform
- Technology Infrastructure

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

### 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

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

### Cost Structure
- Data center costs
- Marketing and Sales
- Research and Development

### Revenue Streams
- Free
- Ad Revenues
- Payment Revenues

www.businessmodelgeneration.com

Twitter Business Model

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

Key Activities
- Platform Development

Key Resources
- Twitter.com Platform

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

Relationships
- 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

Source: http://bmimatters.com/tag/business-model-canvas-examples/
# Google Business Model

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

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

## Key Resources
- Datacenters
- IPs, Brand

## Value Propositions
- Web Search, Gmail, Google+
- 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
- Data center operations
- R&D Costs (mainly personnel)
- S&M, G&A

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

**Business Model of Banking companies**

<table>
<thead>
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<th>Key Partners</th>
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<th>Customer Segments</th>
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<tbody>
<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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<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>Loan Products (Higher Interest Rates)</td>
<td>Channels</td>
<td>Retail and Corporate Customers (Borrowers)</td>
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<tr>
<td><strong>Key Resources</strong></td>
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<td>Physical and IT Infrastructure</td>
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<td><strong>Cost Structure</strong></td>
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<td>Interest Expenses</td>
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<td><strong>Revenue Streams</strong></td>
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<tr>
<td>Interest Income</td>
<td>Fee Income</td>
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VISA – Leader in Global Payments Industry

**Key Partners**
- Technology Alliances
- Commercial Partners

**Key Activities**
- Payments Network Management
- Transaction Processing
- Value-added Services

**Key Resources**
- Payment Products Platform
- VISA Brand

**Value Propositions**
- Payment Product Platforms for card programs and cashless payments
- Convenience, Security, Rewards associated with card payments
- Improved Sales, Customer Convenience

**Relationships**
- Channels
  - Sponsorships (FIFA World cup, Olympics)
  - TV ads, Tradeshows, Conferences

**Customer Segments**
- Financial Institutions (Issuers)
- Financial Institutions (Acquirers)
- Card Holders
- Merchants

**Cost Structure**
- Personnel
- Network, EDP, & Communications
- Brand Promotion

**Revenue Streams**
- Services Revenues
- Data Processing Revenues
- International Revenues

How Airbnb Works?

Insights into Business Model & Revenue Model

Source: http://nextjuggernaut.com/blog/airbnb-business-model-canvas-how-airbnb-works-revenue-insights/
Airbnb Business Model Canvas

**Key Partners**
- Hosts (People who rent their space)
- Guests (People who book spaces)
- Photographers (Freelance)
- Investors
- Payment Processors

**Key Activities**
- Product Development & Management
- Building Host network and Managing hosts
- Building travelers network and managing guests

**Value Propositions**
- Hosts
  - Hosts can earn money by renting their space.
  - Airbnb offers insurance to house owners.
  - Free photo shoots for property listings through photographers.
- Guests
  - Guests can book a homestay instead of hotel.
  - Prices are often less as compared to hotels.

**Customer Relationships**
- Customer Service
- Social Media
- Promotional Offers
- Home Insurance

**Customer Segments**
- Hosts
  - People who own a house and want to earn extra money.
  - People who want to meet new people.
- Guests
  - People who love to travel.
  - People who want to stay comfortably at a cheap price.

**Key Resources**
- Local Hosts
- Skilled Employees
- Technology

**Channels**
- Website
- Mobile App for Android
- Mobile App for iOS

**Cost Structure**
- Technological Set up & running costs
- Salaries to permanent employees
- Payments to freelance photographers

**Revenue Streams**
- Commission from Hosts upon every booking
- Commission from Guests upon every booking

Key Partners
- Local Photographers
- Main Investors
- Y Combinator
- Greylock Partners
- Sequoia Capital
- Western Union
- PayPal

Key Activities
- Platform development and maintenance
- Community management
- Marketing
- Online and international payment
- Photographers management

Value Proposition
- Rent out extra place effortlessly for a worldwide audience

Customer Relationships
- Self-service on site with a support team, SMS, iPhone App
- Self-service on site with a support team, SMS, iPhone App

Customer Segments
- Travelers that are looking for a good experience with a low price
- People with extra place that want to rent

Key Resources
- Base of places announced
- Community of travellers and hosts
- Platform
- Brand

Channels
- Site, YouTube, iPhone App, Blog, Facebook and Twitter
- Site, YouTube, iPhone App, Blog, Facebook and Twitter

Revenue Streams
- 6-12% of booking fee
- 3% of each successfully booking

Cost Structure
- Insurance
- Online and international payment
- Photographers
- Servers
- Human Resources
- Marketing

Source: http://www.slideshare.net/ThiagoPaiva/airbnb-12210879
Case Study: P&G (Chap. 2) (pp.84-85)

Piloting Procter & Gamble from Decision Cockpits

1. What management, organization, and technology issues had to be addressed when implementing Business Sufficiency, Business Sphere, and Decision Cockpits?

2. How did these decision-making tools change the way the company ran its business? How effective are they? Why?

3. How are these systems related to P&G’s business strategy?

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) B607
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