# Case Study for Information Management
# 資訊管理個案

## Enhancing Decision Making: CompStat (Chap. 12)

1011CSIM4C12
TLMXB4C
Mon 8, 9, 10 (15:10-18:00) B602

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# 課程大綱 (Syllabus)

週次　日期　內容（Subject/Topics）

1　101/09/10　Introduction to Case Study for Information Management

2　101/09/17　Information Systems in Global Business: 1. UPS, 2. The National Bank of Kuwait (Chap. 1)

3　101/09/24　Global E-Business and Collaboration: NTUC Income (Chap. 2)

4　101/10/01　Information Systems, Organization, and Strategy: Soundbuzz (Chap. 3)

5　101/10/08　IT Infrastructure and Emerging Technologies: Salesforce.com (Chap. 5)

6　101/10/15　Foundations of Business Intelligence: Lego (Chap. 6)

# 課程大綱 (Syllabus)

週次　　日期　　內容（Subject/Topics）

7　101/10/22　Telecommunications, the Internet, and Wireless
　　　　　　　Technology: Google, Apple, and Microsoft (Chap. 7)

8　101/10/29　Securing Information System:
　　　　　　　1. Facebook,
　　　　　　　2. European Network and Information Security Agency
　　　　　　　(ENISA) (Chap. 8)

9　101/11/05　Midterm Report (期中報告)

10　101/11/12　期中考試週

11　101/11/19　Enterprise Application:
　　　　　　　Border States Industries Inc. (BSE)　(Chap. 9)

12　101/11/26　E-commerce:
　　　　　　　1. Facebook, 2. Amazon vs. Walmart　(Chap. 10)

# 課程大綱 (Syllabus)

週次　　日期　　　內容（Subject/Topics）

13　101/12/03　E-commerce:
　　　　　　　　1. Facebook, 2. Amazon vs. Walmart　(Chap. 10)

14　101/12/10　Knowledge Management:
　　　　　　　　Tata Consulting Services (Chap. 11)

15　101/12/17　Enhancing Decision Making: CompStat (Chap. 12)

16　101/12/22　Final Report 1 (期末報告1)

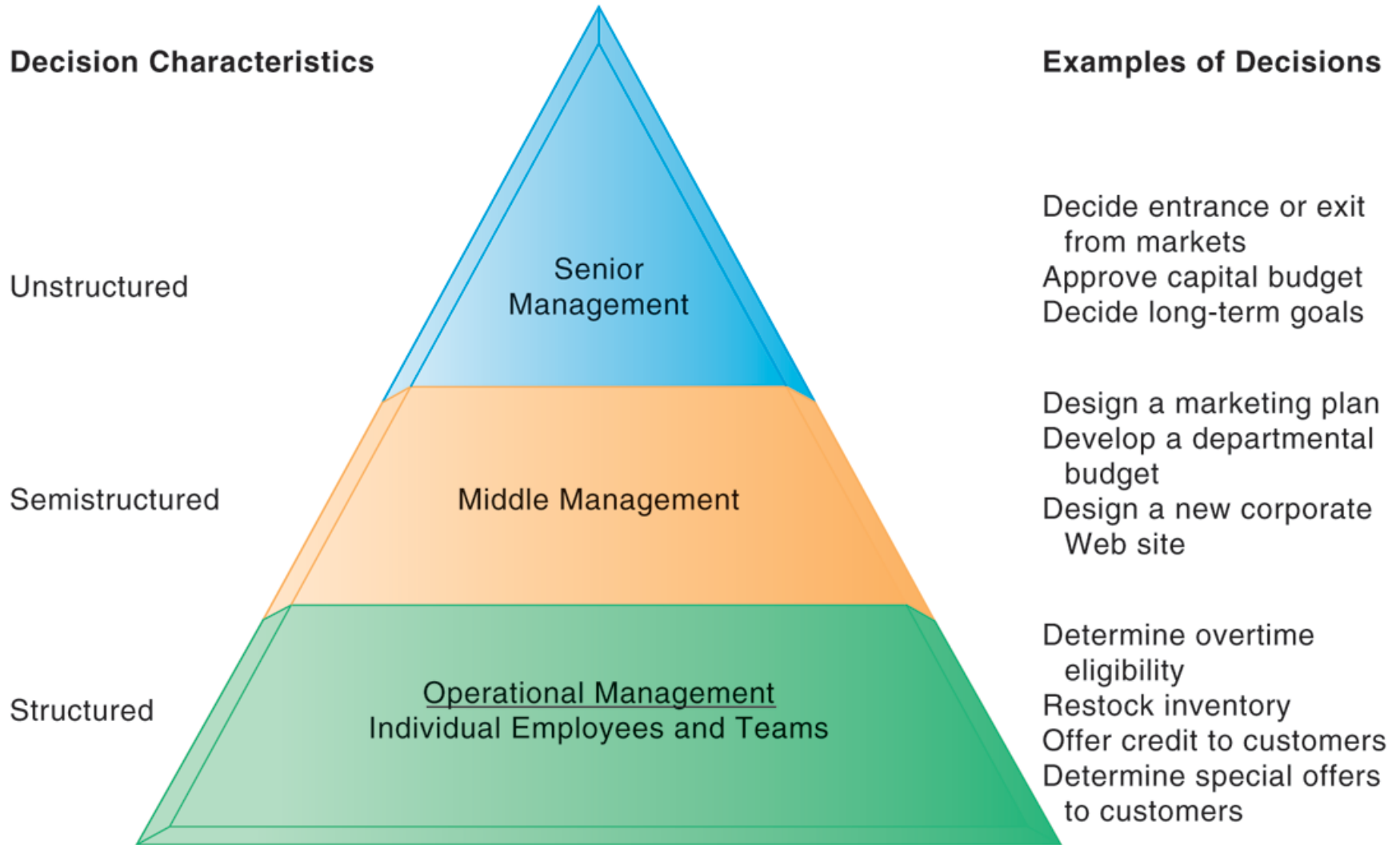17　101/12/24　Final Report 2 (期末報告2)

18　102/01/07　期末考試週

# Chap. 12
# Enhancing Decision Making: CompStat

# Case Study: CompStat
## Does CompStat Reduce Crime? (Chap. 12)
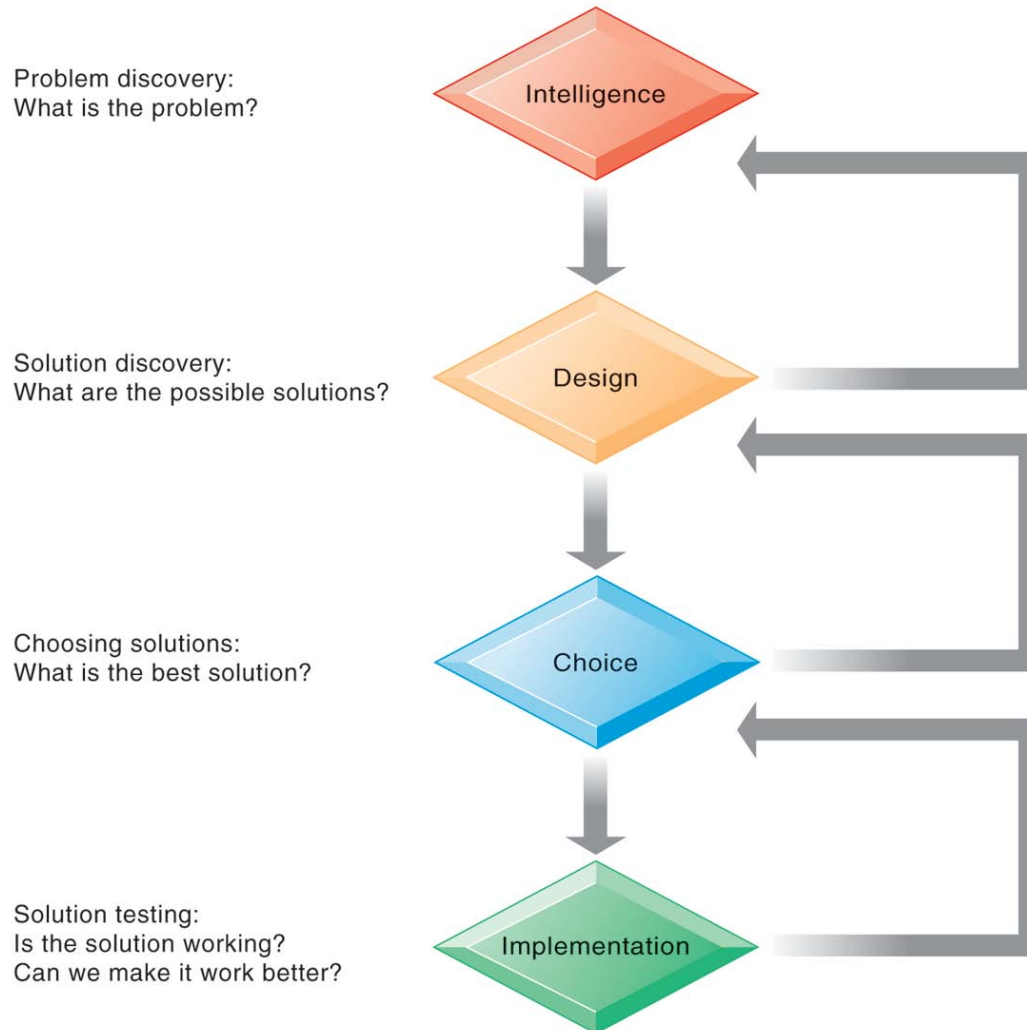
1. What management, organization, and technology factors make CompStat effective?

2. Can police departments effectively combat crime without the CompStat system?
   Is community policing incompatible with CompStat? Explain your answer.

3. Why would officers misreport certain data to CompStat?
   What should be done about the misreporting of data?
   How can it be detected?

# INFORMATION REQUIREMENTS OF
# KEY DECISION-MAKING GROUPS IN A FIRM



**Decision Characteristics**

Unstructured

Semistructured

Structured

Senior Management

Middle Management

Operational Management
Individual Employees and Teams

**Examples of Decisions**

Decide entrance or exit
 from markets
Approve capital budget
Decide long-term goals

Design a marketing plan
Develop a departmental
 budget
Design a new corporate
 Web site

Determine overtime
 eligibility
Restock inventory
Offer credit to customers
Determine special offers
 to customers

# 4 STAGES IN DECISION MAKING



Problem discovery:
What is the problem?

Intelligence

Solution discovery:
What are the possible solutions?

Design

Choosing solutions:
What is the best solution?

Choice

Solution testing:
Is the solution working?
Can we make it work better?

Implementation

# Classical model of management: 5 functions

1. Planning
2. Organizing
3. Coordinating
4. Deciding
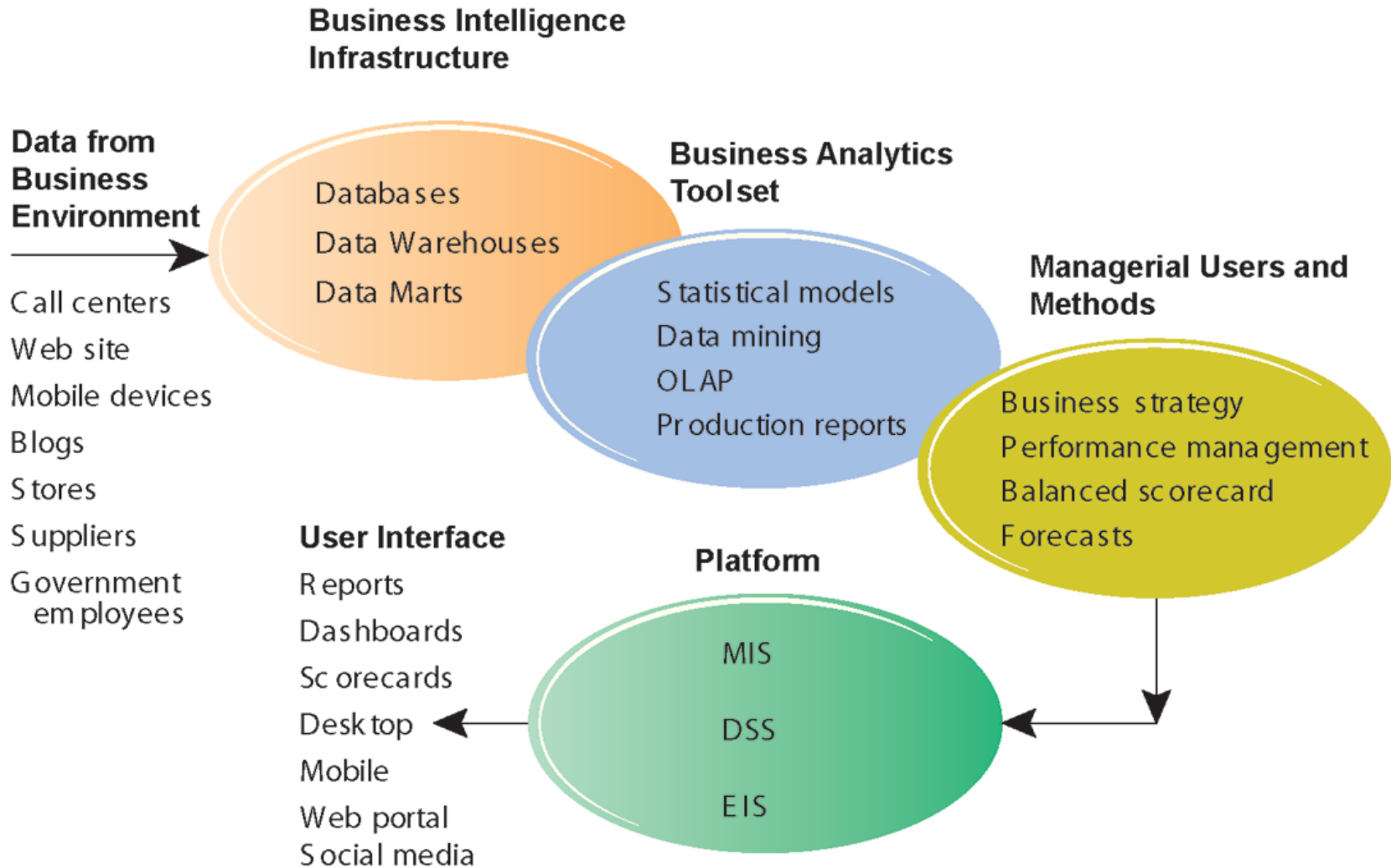5. Controlling

# Mintzberg's 10 managerial roles

- Interpersonal roles
    1. Figurehead
    2. Leader
    3. Liaison
- Informational roles
    4. Nerve center
    5. Disseminator
    6. Spokesperson
- Decisional roles
    7. Entrepreneur
    8. Disturbance handler
    9. Resource allocator
    10. Negotiator

# Business Intelligence (BI) in Enterprise

- Business Intelligence

  - Infrastructure for collecting, storing, analyzing data produced by business
  - Databases, data warehouses, data marts

- Business Analytics

  - Tools and techniques for analyzing data
  - OLAP, statistics, models, data mining

- Business Intelligence Vendors

  - Create business intelligence and analytics purchased by firms

# BUSINESS INTELLIGENCE AND ANALYTICS FOR DECISION SUPPORT



**Business Intelligence Infrastructure**

**Data from Business Environment**

Call centers
Web site
Mobile devices
Blogs
Stores
Suppliers
Government employees

Databases
Data Warehouses
Data Marts

**Business Analytics Toolset**

Statistical models
Data mining
OLAP
Production reports

**Managerial Users and Methods**

Business strategy
Performance management
Balanced scorecard
Forecasts

**User Interface**

Reports
Dashboards
Scorecards
Desktop
Mobile
Web portal
Social media

**Platform**

MIS
DSS
EIS

# Business intelligence and analytics capabilities

- Goal is to deliver accurate real-time information to decision-makers

- Main functionalities of BI systems
  1. Production reports
  2. Parameterized reports
  3. Dashboards/scorecards
  4. Ad hoc query/search/report creation
  5. Drill down
  6. Forecasts, scenarios, models

# Business Intelligence Users

- 80% are casual users relying on production reports

- Senior executives
  - Use monitoring functionalities

- Middle managers and analysts
  - Ad-hoc analysis

- Operational employees
  - Prepackaged reports
  - E.g. sales forecasts, customer satisfaction, loyalty and attrition, supply chain backlog, employee productivity

# Business Intelligence Users

**Power Users:**
**Producers**
**(20% of employees)**

**Capabilities**

**Casual Users:**
**Consumers**
**(80% of employees)**

IT developers

Super users

Business analysts

Analytical modelers

Production Reports

Parameterized Reports

Dashboards/Scorecards

Ad hoc queries; Drill down
Search/OLAP

Forecasts; What if
Analysis; statistical models

Customers/Suppliers

Operational employees

Senior managers

Managers/Staff

Business analysts

# Examples of BI applications

- Predictive analytics
  - Use patterns in data to predict future behavior
  - E.g. Credit card companies use predictive analytics to determine customers at risk for leaving

- Data visualization
  - Help users see patterns and relationships that would be difficult to see in text lists

- Geographic information systems (GIS)
  - Ties location-related data to maps

# Management strategies for developing BI and BA capabilities

- Two main strategies
  1. One-stop integrated solution
     - Hardware firms sell software that run optimally on their hardware
     - Makes firm dependent on single vendor – switching costs
  2. Multiple best-of-breed solution
     - Greater flexibility and independence
     - Potential difficulties in integration
     - Must deal with multiple vendors

# Decision Support Systems

- Use mathematical or analytical models
- Allow varied types of analysis
  - "What-if" analysis
  - Sensitivity analysis
  - Backward sensitivity analysis
  - Multidimensional analysis / OLAP
    - E. g. pivot tables

# SENSITIVITY ANALYSIS

| | | Variable Cost per Unit | | | | |
|---|---|---|---|---|---|---|
| Total fixed costs | 19000 | | | | | |
| Variable cost per unit | 3 | | | | | |
| Average sales price | 17 | | | | | |
| Contribution margin | 14 | | | | | |
| Break-even point | 1357 | | | | | |
| | | | | | | |
| Sales | 1357 | 2 | 3 | 4 | 5 | 6 |
| Price | 14 | 1583 | 1727 | 1900 | 2111 | 2375 |
| | 15 | 1462 | 1583 | 1727 | 1900 | 2111 |
| | 16 | 1357 | 1462 | 1583 | 1727 | 1900 |
| | 17 | 1267 | 1357 | 1462 | 1583 | 1727 |
| | 18 | 1188 | 1267 | 1357 | 1462 | 1583 |

# Decision-support for senior management

- Help executives focus on important performance information

- Balanced scorecard method:
  - Measures outcomes on four dimensions:
    1. Financial
    2. Business process
    3. Customer
    4. Learning & growth
  - Key performance indicators (KPIs) measure each dimension

# THE BALANCED SCORECARD FRAMEWORK



**Financial**
- Cash flow
- Return on investment
- Financial result
- Return on capital employed
- Return on equity

**Customers**
- Delivery performance
- Quality performance
- Customer satisfaction
- Customer loyalty
- Customer retention

**Firm Strategy and Objectives**

**Business Processes**
- Number of activities
- Process execution time
- Accident ratios
- Resource efficiency
- Equipment downtime

**Learning and Growth**
- Investment rate
- Illness rate
- Internal promotions %
- Employee turnover
- Gender ratios

# Decision-support for senior management (cont.)

- Business performance management (BPM)

  - Translates firm's strategies (e.g. differentiation, low-cost producer, scope of operation) into operational targets

  - KPIs developed to measure progress towards targets

- Data for ESS

  - Internal data from enterprise applications

  - External data such as financial market databases

  - Drill-down capabilities

# 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

- Kenneth C. Laudon & Jane P. Laudon (2012), Management Information  Systems: Managing the Digital Firm, Twelfth Edition, Pearson.
- 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