Case Study for Information Management

Enhancing Decision Making: CompStat (Chap. 12)

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

http://mail.tku.edu.tw/myday/
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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?

Overview of Fundamental MIS Concepts

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?

Solution discovery: What are the possible solutions?

Choosing solutions: What is the best solution?

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

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

Data from Business Environment:
- Call centers
- Web site
- Mobile devices
- Blogs
- Stores
- Suppliers
- Government employees

Business Intelligence Infrastructure:
- 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)
- IT developers
- Super users
- Business analysts
- Analytical modelers

Casual Users: Consumers (80% of employees)
- Customers/Suppliers
- Operational employees
- Senior managers
- Managers/Staff
- Business analysts

Capabilities
- Production Reports
- Parameterized Reports
- Dashboards/Scorecards
- Ad hoc queries; Drill down Search/OLAP
- Forecasts; What if Analysis; statistical models

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

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<td>Average sales price</td>
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<table>
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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

Case Study: Electronic Medical Records
Are Electronic Medical Records a Cure for Health Care? (Chap. 13)

1. What management, organization, and technology factors are responsible for the difficulties in building electronic medical record systems? Explain your answer.

2. What stages of system-building will be the most difficult for building electronic medical record systems? Explain your answer.

3. What is the business and social impact of not digitizing medical records (to individual physicians, hospitals, insurers, patients)?

4. What are business and social benefits of digitizing medical recordkeeping?

5. Name two important information requirements for physicians, two for patients, and two for hospitals that should be addressed by electronic medical records systems.

6. Diagram the "as-is" and "to-be" process for prescribing a medication for a patient if an EMR system is implemented.

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