Case Study for Information Management

Enhancing Decision Making: CompStat (Chap. 12)

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

- **Unstructured**
  - Senior Management
    - Decide entrance or exit from markets
    - Approve capital budget
    - Decide long-term goals
  - Middle Management
    - Design a marketing plan
    - Develop a departmental budget
    - Design a new corporate Web site
  - Operational Management
    - Individual Employees and Teams
      - Determine overtime eligibility
      - Restock inventory
      - Offer credit to customers
      - Determine special offers to customers
  
- **Structured**

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
- Website
- 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)

<table>
<thead>
<tr>
<th>IT developers</th>
<th>Capabilities</th>
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<td>Production Reports</td>
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<td>Parameterized Reports</td>
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<tr>
<td>Dashboards/Scorecards</td>
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## Super users

<table>
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<th>Business analysts</th>
<th>Capabilities</th>
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<td>Ad hoc queries; Drill down Search/OLAP</td>
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## Analytical modelers

| Forecasts; What if Analysis; statistical models |

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

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<td>Operational employees</td>
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<th>Senior managers</th>
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<th>Managers/Staff</th>
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| 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

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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

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