商業智慧實務
Practices of Business Intelligence

企業績效管理
(Business Performance Management)

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Chapter 9: Business Performance Management
Learning Objectives

• Business Performance Management (BPM)
  • BPM = BI + Planning

• Closed-Loop Process to Optimize Business Performance
  – Strategize, Plan, Monitor, Act /Adjust

• Performance Measurement

• BPM Methodologies
  – Balanced scorecard (BSC)
  – Six Sigma

• BPM Architecture and Applications

• Performance Dashboards

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Business Performance Management (BPM) Overview

• Business Performance Management (BPM) is...
  A real-time system that alert managers to potential opportunities, impending problems, and threats, and then empowers them to react through models and collaboration

• Also called, corporate performance management (CPM by Gartner Group), enterprise performance management (EPM by Oracle), strategic enterprise management (SEM by SAP)

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Business Performance Management (BPM) Overview

• BPM refers to the business processes, methodologies, metrics, and technologies used by enterprises to measure, monitor, and manage business performance

• BPM encompasses three key components
  – A set of integrated, closed-loop management and analytic processes, supported by technology ...
  – Tools for businesses to define strategic goals and then measure/manage performance against them
  – Methods and tools for monitoring key performance indicators (KPIs), linked to organizational strategy

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM versus BI

• BPM is an outgrowth of BI and incorporates many of its technologies, applications, and techniques
  – Same companies market and sell them
  – BI has evolved so that many of the original differences between the two no longer exist (e.g., BI used to be focused on departmental rather than enterprise-wide projects)
  – BI is a crucial element of BPM

• BPM = BI + Planning (a unified solution)

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
A Closed-Loop Process to Optimize Business Performance

- **Process Steps**
  1. Strategize
  2. Plan
  3. Monitor/analyze
  4. Act/adjust

Each with its own process steps...

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
A Closed-Loop Process to Optimize Business Performance

1. Strategize: Where Do We Want to Go?
2. Plan: How Do We Get There?
3. Monitor: How Are We Doing?
4. Act /Adjust: What Do We Need to Do Differently?

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Strategize: Where Do We Want to Go?

• Strategic planning
  - Common tasks for the strategic planning process:
    1. Conduct a current situation analysis
    2. Determine the planning horizon
    3. Conduct an environment scan
    4. Identify critical success factors
    5. Complete a gap analysis
    6. Create a strategic vision
    7. Develop a business strategy
    8. Identify strategic objectives and goals

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Strategize:
Where Do We Want to Go?

- **Strategic objective**
  A broad statement or general course of action prescribing targeted directions for an organization

- **Strategic goal**
  A quantified objective with a designated time period

- **Strategic vision**
  A picture or mental image of what the organization should look like in the future

- **Critical success factors (CSF)**
  Key factors that delineate the things that an organization must excel at to be successful

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Strategize: Where Do We Want to Go?

“90 percent of organizations fail to execute their strategies”

• The strategy gap
  – Four sources for the gap between strategy and execution:
    1. Communication (enterprise-wide)
    2. Alignment of rewards and incentives
    3. Focus (concentrating on the core elements)
    4. Resources

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Plan: How Do We Get There?

• Operational planning
  – Operational plan: plan that translates an organization’s strategic objectives and goals into a set of well-defined tactics and initiatives, resources requirements, and expected results for some future time period (usually a year)

• Operational planning can be
  • Tactic-centric (operationally focused)
  • Budget-centric plan (financially focused)

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Plan:
How Do We Get There?

• Financial planning and budgeting
  – An organization’s strategic objectives and key metrics should serve as top-down drivers for the allocation of an organization’s tangible and intangible assets
  – Resource allocations should be carefully aligned with the organization’s strategic objectives and tactics in order to achieve strategic success

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Monitor: How Are We Doing?

• A comprehensive framework for monitoring performance should address two key issues:
  – What to monitor
    • Critical success factors
    • Strategic goals and targets
  – How to monitor

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Monitor: How Are We Doing?

- Diagnostic control system

A cybernetic system that has inputs, a process for transforming the inputs into outputs, a standard or benchmark against which to compare the outputs, and a feedback channel to allow information on variances between the outputs and the standard to be communicated and acted upon.

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Monitor: How Are We Doing?

• Pitfalls of variance analysis
  – The vast majority of the exception analysis focuses on negative variances when functional groups or departments fail to meet their targets
  – Rarely are positive variances reviewed for potential opportunities, and rarely does the analysis focus on assumptions underlying the variance patterns

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Monitor: How Are We Doing?

What if strategic assumptions (not the operations) are wrong?

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Act and Adjust: What Do We Need to Do Differently?

• Success (or mere survival) depends on new projects: creating new products, entering new markets, acquiring new customers (or businesses), or streamlining some process.

• Most new projects and ventures fail!
  – Hollywood movies: 60% chance of failure
  – Mergers and acquisitions: 60%
  – IT projects (large-scale): 70%
  – New food products: 80%
  – New pharmaceutical products: 90% …

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Act and Adjust: What Do We Need to Do Differently?

Harrah’s Closed-Loop Marketing Model

1. Define Campaign Objectives & Test Outcomes
2. Execute Marketing Campaign
3. Track Linked Transactions
4. Evaluate Campaign Effectiveness
5. Learn & Refine Campaigns & Approaches

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Act and Adjust: What Do We Need to Do Differently?

• The Hackett Group’s benchmarking results indicate that world class companies:
  – Are significantly more efficient than their peers at managing costs
  – Focus on operational excellence and experience significantly reduced rates of employee turnover
  – Provide management with the tools and training to leverage corporate information and to guide strategic planning, budgeting, and forecasting
  – Closely align strategic and tactical plans, enabling functional areas to contribute more effectively...

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• Performance measurement system

A system that assists managers in tracking the implementations of business strategy by comparing actual results against strategic goals and objectives

– Comprises systematic comparative methods that indicate progress (or lack thereof) against goals

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• Key performance indicator (KPI)
  A KPI represents a strategic objective and metrics that measures performance against a goal

• Distinguishing features of KPIs
  - Strategy
  - Targets
  - Ranges
  - Encodings
  - Time frames
  - Benchmarks

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• Key performance indicator (KBI)

Outcome KPIs vs. Driver KPIs

(lagging indicators e.g., revenues) (leading indicators e.g., sales leads)

• Operational areas covered by driver KPIs
  – Customer performance
  – Service performance
  – Sales operations
  – Sales plan/forecast

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• Problems with existing performance measurement systems
  – The most popular system in use is some variant of the balanced scorecard (BSC)
    • 50-90% of all companies implemented BSC
  – BSC methodology is a holistic vision of a measurement system tied to the strategic direction of the organization and based on a four-perspective view of the world:
    • Financial measures supported by customer, internal, and learning and growth metrics

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• The drawbacks of using financial data as the core of a performance measurement:
  – Financial measures are usually reported by organizational structures and not by the processes that produced them
  – Financial measures are lagging indicators, telling us what happened, not why it happened or what is likely to happen in the future
  – Financial measures are often the product of allocations that are not related to the underlying processes that generated them
  – Financial measures are focused on the short-term returns...

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Measurement

• Good performance measures should:
  – Be focused on key factors
  – Be a mix of past, present, and future
  – Balance the needs of all stakeholders (shareholders, employees, partners, suppliers, ...)
  – Start at the top and trickle down to the bottom
  – Have targets that are based on research and reality rather than be arbitrary

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• An effective performance measurement system should help:
  – Align top-level strategic objectives and bottom-level initiatives
  – Identify opportunities and problems in a timely fashion
  – Determine priorities and allocate resources accordingly
  – Change measurements when the underlying processes and strategies change
  – Delineate responsibilities, understand actual performance relative to responsibilities, and reward and recognize accomplishments
  – Take action to improve processes and procedures when the data warrant it
  – Plan and forecast in a more reliable and timely fashion

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• Balanced scorecard (BSC)
A performance measurement and management methodology that helps translate an organization’s financial, customer, internal process, and learning and growth objectives and targets into a set of actionable initiatives

• "The Balanced Scorecard: Measures That Drive Performance" (HBR, 1992)

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies
Balanced Scorecard

Vision and Strategy

Financial

“To succeed financially, how should we appear to our shareholders?”

Customer

“To achieve our vision, how should we appear to our customers?”

Internal Business Processes

“To satisfy our shareholders and customers, what business processes must we excel at?”

Learning and Growth

“To achieve our vision, how will we sustain our ability to change and improve?”

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

- The meaning of “balance”
  - BSC is designed to overcome the limitations of systems that are financially focused
  - Nonfinancial objectives fall into one of three perspectives:
    1. Customer
    2. Internal business process
    3. Learning and growth

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• In BSC, the term “balance” arises because the combined set of measures are supposed to encompass indicators that are:
  – Financial and nonfinancial
  – Leading and lagging
  – Internal and external
  – Quantitative and qualitative
  – Short term and long term

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• Aligning strategies and actions
• A six-step process
  1. Developing and formulating a strategy
  2. Planning the strategy
  3. Aligning the organization
  4. Planning the operations
  5. Monitoring and learning
  6. Testing and adapting the strategy

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• **Strategy map**
  A visual display that delineates the relationships among the key organizational objectives for all four BSC perspectives

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
<table>
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<th>Balanced Scorecard: Measures and Targets</th>
<th>Strategic Initiatives: Action Plans</th>
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<tr>
<td><strong>Financial</strong></td>
<td>Net Income Growth</td>
<td>Increase 25%</td>
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<td>Increase Net Income</td>
<td><strong>Customer</strong></td>
<td>Maintenance retention rate</td>
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<tr>
<td>Increase Customer Retention</td>
<td>Increase 15%</td>
<td>Change licensing and maintenance contracts</td>
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<td><strong>Internal Business Process</strong></td>
<td>Improve Call Center Performance</td>
<td>Issue turnaround time</td>
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<td>Improve Call Center Performance</td>
<td>Improve 30%</td>
<td>Standardized call center processes</td>
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<td><strong>Learning and Growth</strong></td>
<td>Voluntary turnover rate</td>
<td>Reduce 25%</td>
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<tr>
<td>Reduce Employee Turnover</td>
<td></td>
<td>Salary and bonus upgrade</td>
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Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• Six Sigma
A performance management methodology aimed at reducing the number of defects in a business process to as close to zero defects per million opportunities (DPMO) as possible

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• Six Sigma
  – The DMAIC performance model
    A closed-loop business improvement model that encompasses the steps of defining, measuring, analyzing, improving, and controlling a process
  – Lean Six Sigma
    • Lean manufacturing / lean production
    • Lean production versus six sigma

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• How to Succeed in Six Sigma
  – Six Sigma is integrated with business strategy
  – Six Sigma supports business objectives
  – Key executives are engaged in the process
  – Project selection is based on value potential
  – There is a critical mass of projects and resources
  – Projects-in-process are actively managed
  – Team leadership skills are emphasized
  – Results are rigorously tracked

• BSC + Six Sigma = Success

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Methodologies

• Integrating six sigma with BSC by
  – Translating their strategy into quantifiable objectives
  – Cascading objectives through the organization
  – Setting targets based on the voice of the customer
  – Implementing strategic projects using Six Sigma
  – Executing processes in a consistent fashion to deliver business results

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Architecture and Applications

• BPM architecture
  – The logical and physical design of a system
  – BPM system consists of three logical parts:
    1. BPM Applications
    2. Information Hub
    3. Source Systems
  – BPM system consists of three physical parts:
    1. Database tier
    2. Application tier
    3. Client or user interface

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Architecture and Applications

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Architecture and Applications

- BPM applications
  1. Strategy management
  2. Budgeting, planning, and forecasting
  3. Financial consolidation
  4. Profitability modeling and optimization
  5. Financial, statutory, and management reporting

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
BPM Architecture and Applications

• Leading BPM Application Suits/Vendors
  – SAP Business Objects Enterprise Performance Management
  – Oracle Hyperion Performance Management
  – IBM Cognos BI and Financial Performance Management
  – Microstrategy
  – Microsoft
  – SAS Business Intelligence

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

• Dashboards and scorecards both provide visual displays of important information that is consolidated and arranged on a single screen so that information can be digested at a single glance and easily explored

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

• Dashboards versus scorecards
  – Performance dashboards
    Visual display used to monitor operational performance (free form...)
  – Performance scorecards
    Visual display used to chart progress against strategic and tactical goals and targets (predetermined measures...)

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

• Dashboards versus scorecards
  – Performance dashboard is a multilayered application built on a business intelligence and data integration infrastructure that enables organizations to measure, monitor, and manage business performance more effectively

  - Eckerson

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

• Three types of performance dashboards:
  1. Operational dashboards
  2. Tactical dashboards
  3. Strategic dashboards

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Performance Dashboards

• Dashboard design
  – “The fundamental challenge of dashboard design is to display all the required information on a single screen, clearly and without distraction, in a manner that can be assimilated quickly"

(Few, 2005)
Performance Dashboards

• What to look for in a dashboard
  – Use of visual components (e.g., charts, performance bars, spark lines, gauges, meters, stoplights) to highlight, at a glance, the data and exceptions that require action
  – Transparent to the user, meaning that they require minimal training and are extremely easy to use
  – Combine data from a variety of systems into a single, summarized, unified view of the business
  – Enable drill-down or drill-through to underlying data sources or reports
  – Present a dynamic, real-world view with timely data updates
  – Require little, if any, customized coding to implement, deploy, and maintain

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
Summary

• Business Performance Management (BPM)
  • BPM = BI + Planning

• Closed-Loop Process to Optimize Business Performance
  – Strategize, Plan, Monitor, Act /Adjust

• Performance Measurement

• BPM Methodologies
  – Balanced scorecard (BSC)
  – Six Sigma

• BPM Architecture and Applications

• Performance Dashboards

Source: Turban et al. (2011), Decision Support and Business Intelligence Systems
References