Performance Measurement Systems

"OK, I think I've got all the data I need."

"Oops, looks like something bad has happened."

Collect → Organize → Analyze → Manage

Performance Measurement Helps Implement Strategy By

[A] Evaluating alternatives to help select the organization’s strategy
[B] Clarifying and communicating the organization’s strategy to its employees
[C] Motivating employees to work toward achieving the organization’s strategic objectives
[D] Assessing the organization’s success in achieving its strategic objectives

Management Control Cycle

Plan → Correct → Communicate → Implement → Monitor → Evaluate

Performance measures are based on objectives derived from strategic plan, planning is performed periodically

The Control Processes

- **Planning** involves developing objectives, choosing activities to accomplish the objectives, and selecting measures to determine success or failure in meeting the objectives
- **Communicating** requires informing employees about objectives and means of meeting those objectives
- **Implementation** is performing the activities selected in the plan
- **Monitoring** is the process of measuring the success or failure in achieving the objectives
- **Evaluation** involves comparison of feedback about actual performance with the planned performance
- **Correction** is taking appropriate actions to ensure that actual performance complies with the plan

A Semi-Closed System

Traditional MCS are not open systems that facilitate agile response to opportunities and threats
An Open System

Opportunities & Threats

External Signals

Strategic Alliances

Adaptive Structure

Performance Measures & Indicators

Coordination of Capabilities

Internal Feedback

External Benchmarks

Performance measurement reinforces core capabilities

Decentralized Management

- In large organizations, all details cannot be managed using a “command and control” structure
- Consequently, decentralized divisions are organized with independent authority and responsibility structure
- Each independent business unit is responsible for managing its operations in its own economic environment

Pop Quiz

What Are the Benefits of Decentralization?

A. Avoiding costs of communicating information to headquarters for all decisions
B. Training of potential leaders
C. Stronger motivation to manage independent organizational units
D. Easier to compare performance across different independent businesses

Costs of Decentralization

- Administrative costs of coordinating independent managers
- Difficulty in comparing performance of different businesses
- Dysfunctional decision-making

These costs are alleviated with the judicious use of responsibility centers and performance evaluation processes

My Years with General Motors

Alfred P. Sloan

- Organized Cadillac and Buick as high-end divisions responsible for high profit margins
- Organized Chevrolet as a low-end division responsible for increasing volume
- Recruited Donaldson Brown as CFO to implement DuPont analysis to evaluate decentralized businesses

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Return on Investment (ROI)

Return on Investment =
Income from Investment ÷ Investment

Investment equals
total assets less total liabilities (= shareholders’ equity) or
total assets less current liabilities (= total long term capital)

Alternative measure: Return on Assets (ROA)

Profit Margin and Asset Turnover
for Six Retail Companies

<table>
<thead>
<tr>
<th>Retail Company</th>
<th>Sales Revenue</th>
<th>Operating Income</th>
<th>Total Assets</th>
<th>Profit Margin</th>
<th>Asset Turnover</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiffany</td>
<td>$1,707</td>
<td>$319</td>
<td>$1,924</td>
<td>18.7%</td>
<td>0.89</td>
<td>16.6%</td>
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<tr>
<td>Kohl's</td>
<td>$9,120</td>
<td>$1,090</td>
<td>$6,316</td>
<td>12.0%</td>
<td>1.44</td>
<td>17.3%</td>
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<tr>
<td>Home Depot</td>
<td>$58,247</td>
<td>$5,830</td>
<td>$30,011</td>
<td>10.0%</td>
<td>1.94</td>
<td>19.4%</td>
</tr>
<tr>
<td>BJ's Wholesale</td>
<td>$5,860</td>
<td>$222</td>
<td>$1,481</td>
<td>3.8%</td>
<td>3.96</td>
<td>15.0%</td>
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<tr>
<td>Walgreen</td>
<td>$28,681</td>
<td>$1,624</td>
<td>$9,837</td>
<td>5.7%</td>
<td>2.98</td>
<td>16.4%</td>
</tr>
<tr>
<td>Family Dollar</td>
<td>$4,163</td>
<td>$342</td>
<td>$1,755</td>
<td>8.2%</td>
<td>2.37</td>
<td>19.5%</td>
</tr>
</tbody>
</table>

ROA = Operating Income / Total Assets
Profit Margin = Operating Income / Sales
Asset Turnover = Sales / Total Assets

Graph of Profit Margin
Versus Asset Turnover

Principle of Congruence
• Management control systems (communicating, monitoring, evaluating, rewarding) should be
designed to focus on value drivers aligned with the business strategy

Strategic Position, Valuation and Executive Compensation

High Profit Margin
Past ROA + Future ROA - Business Value + Executive Compensation
High Asset Turnover
Limitations of ROI

• Numerator is accounting profit which is fundamentally backward looking
• Asset values are not reflective of economic value
• No accounting for risk factors

Residual Income (RI)

Residual Income = 
Income from Investment 
– Cost of Capital * Investment

Cost of capital reflects the after tax cost and relative weights of debt and equity in the financial structure for the investment, and is adjusted for risk

Economic Value Added (EVA)®

• Stern Stewart & Co.: 
  EVA = Modified Profit 
    - Cost of Capital * Modified Investment
• Common modifications to profit and investment:
  – Capitalize advertising, R&D, employee training and other intangibles
  – Include assets at replacement cost
  – Include working capital (i.e., current assets minus current liabilities) in investment

Responsibility Accounting…..

Use of an organization structure and a performance measurement system in which the manager of each responsibility center is made responsible for specific and measurable goals that promote the long term interests of the organization

Types of Responsibility Centers

• Cost centers
• Revenue centers
• Profit centers
• Investment centers

Principle of Controllability

People should be held accountable for results that they can control and not for those that they cannot
Pop Quiz

Which of the following variances is most likely to be the responsibility of the purchasing manager?

[A] Labor efficiency variance  
[B] Labor wage rate variance  
[C] Material price variance  
[D] Material quantity variance

Pop Quiz

Should plant managers be evaluated as cost centers or profit centers?

- Plant managers can only control costs and therefore should be evaluated as cost centers
- Plant managers represent a responsibility center focused on costs

Plant Managers Influence Sales

- By assuring satisfactory quality and on-time delivery, plant managers can also influence sales
- Therefore, when greater coordination between production and marketing is necessary, plant managers should be evaluated as profit centers

Survey of Chief Financial Officers

- Plants pursuing cost leadership strategy are more likely to be cost centers; differentiation strategy, profit centers
- Plants that need greater coordination between production and marketing are not necessarily profit centers!

Responsibility Centers Revisited

When there is greater need for coordination between production and marketing, plant managers are evaluated based on non-financial performance measures that are
- Customer oriented
- Business process oriented
- Learning and growth oriented

Banker and Janakiraman, 2002
What behavior is induced when store performance is measured as the ratio of chicken sold to chicken used?

Pop Quiz

Why is Accounting Profit Not an Adequate Performance Measure?

- The profit measure does not change immediately to signal a bad managerial action
- Actions of other managers, decisions by competitors, and economy-wide factors affect profit, and introduce noise in evaluating managerial actions

Pop Quiz

What Measures Will Be Better Signals on Performance?

- Customer satisfaction will be affected before the impact of managerial actions is observed in sales revenue or profit
- Operating measures such as customer waiting time provide immediate indicators of whether the business strategy is being implemented correctly

The Lead Indicator: A Silent Killer

Cholesterol Count ➔ Heart Attack

What Makes an Outcome a Good Performance Measure

- SENSITIVITY: If the outcome changes a lot depending on the employee’s actions, then that outcome is a sensitive performance measure
- PRECISION: If factors beyond the control of the employee do not much impact the outcome, then that outcome is a precise performance measure
- CONGRUENCE: If the outcome accurately reflects relative priorities of the organization’s multiple objectives, then that outcome is a congruent performance measure.
Pay-for-Performance

- It is a reward system that provides monetary (extrinsic) rewards based on achieving or exceeding some measured performance.
- Incentive compensation is prevalent worldwide.
- But, how much pay should be linked to performance, and whether pay-for-performance has a net positive impact on overall financial performance is contentious.

What Influences Tradeoffs Between Risk and Reward

At-risk pay is higher if
- The employee is better able to bear the down-side risk.
- More sensitive, precise and congruent performance measures are available.
Consider incentive compensation for sales staff.

Case Study of a Department Store Chain

Stores that implemented pay-for-performance exhibited greater sales increase than "control" stores.

Fit Between Performance Evaluation, Business Strategy and Environment

- On average, store sales and profits increased significantly after pay-for-performance was introduced (controlling for other determinants such as sales promotions, competitor actions and economy trends).
- Pay for performance did not have a positive impact in all stores.
- Stores in locations with lower income, less educated and more blue collar residents who do not demand exceptional customer service exhibited zero or negative impact.

Impact of Performance Based Pay on Front Line Employees

Performance will improve because
- Employees will be motivated to work harder and better.
- Better skilled employees will be attracted and retained, and weaker employees will leave.

Impact on Worker Productivity

Productivity of workers who remained with the firm improved after pay-for-performance implementation.
Termination of Pay for Performance

After the termination of the plan, stores that had the pay-for-performance plan exhibited sales decrease relative to the "control" stores.

Implications for Pay-for-Performance

Effectiveness of pay-for-performance is very context-specific:
- Industry and competitive environment
- Business strategy
- Organizational culture