Performance Measures: Insights and Challenges

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Management Accounting Research Group Conference
March 25, 2004
Traditional Approach to Performance Drivers ...

DuPont Model

\[
\text{Sales/Assets} \times \text{Profit/Sales} = \text{Profit/Assets} \rightarrow \text{Future Cash Flows} \rightarrow \text{Stock Price}
\]

Residual Income Model

\[
[\text{Profit/Assets} - \text{Cost of Capital}] \rightarrow \text{Future Cash Flows} \rightarrow \text{Stock Price}
\]
Critiques of the Traditional Approach ...

- Financial measures alone are inadequate
  - Too narrow
  - Too late
  - Too backward looking

- Drivers of financial performance are unknown

- Little insight into intangible assets

- Value-based management, balanced scorecards, and other related methods are now commonplace for selecting an expanded set of performance measures
The Theory ...

Translate strategic goals into numerical objectives

Objectives
- 8% increase in ROS
- 10% asset turnover increase
- 7% EVA growth

Translate objectives into actionable strategies

Strategies
- Expand global markets
- Process cost reduction
- Increase new products

Adjust objectives based on results

Internal and External Communication and Control

Translate strategies into measurements

Success Indicators
- Working capital levels
- Customer satisfaction
- Time-to-market
The Theory ...

- Develop an explicit causal business model describing how value drivers are linked to strategy
- Identify specific value propositions or hypotheses
- Tabulate and integrate available data across functions (and identify what data are missing)
- Actually test the hypotheses (and determine whether your model and/or data is inadequate)
- Communicate and debate the results, develop new value propositions, and test again
The Reality ...

- 78% of companies that have implemented strategic performance measurement systems do not rigorously assess the links between strategies and performance measures (Gates)
- 71% of companies have not developed a formal causal model or value driver map (Wharton/PwC)
- 50% of companies do not use non-financial measures to drive financial performance (Mercer Consulting)
- 79% of companies have not attempted to validate the linkages between their non-financial measures and future financial results (Wharton/PwC)
The Reality ...

- 77% of organizations with a balanced scorecard place little or no reliance on business models (Ittner et al)

- There are relatively few cases where companies with a balanced scorecard test their hypotheses or value propositions even after they have several years of data

- When business models are developed, it is often a one-time event with little influence on ongoing measurement practices
The Reality ... 

- 45% of balanced scorecard users found the need to quantify qualitative results to be a major implementation problem (Towers Perrin)

- 55% of companies stated that the biggest implementation problem for strategic performance measurement systems is not measuring difficult-to-measure activities (Gates)

- Many companies simply ignore qualitative measures or exclude them from their performance reports
Gaps Between Drivers and Measures …

Extremely Important as a Driver for Long-Term Success

High Quality Of Measurement

Extremely Low Quality of Measurement

Not at All Important

Customer  | Quality  | Operations  | S-T Financial  | Innovation  | Community  | Employee
--- | --- | --- | --- | --- | --- | ---
6  | 5  | 4  | 3  | 2  | 1  | 0

Ittner, Larcker, and Randall, 2003
So What Are Companies Doing?...

- Heavy reliance on management intuition, “organizational folklore”, and unsophisticated guesses

- Fixation on the “four buckets” of the balanced scorecard (with the belief that these categories are all encompassing)

- Attempting to apply a seemingly endless set of measurement frameworks, models, and laundry lists of measures being pushed by consultants

- Measuring an ever-increasing number of measures to avoid missing anything important
Resulting in Models Like ...

**“Add and Retain High Value and High Potential Value Customers”**

- Grow Revenue
- Increase Revenue per Customer
- Cross-Sell WF-Branded Products and Services
- Grow Revenues from Non-Branded Sources
- Grow International Revenues

**“Increase Revenue per Customer”**

- Maximize Profit
- Increase Revenue per Customer
- Increase Fees and Balances
- Grow Revenues from Non-Branded Sources
- Grow International Revenues

**“Reduce Cost per Customer”**

- Reduce Cost per Customer for the Bank
- Migrate Wells Fargo Customers to OFS
- Convert WF Mass Consumers to On-line
- Increase Customers’ Use of On-Line

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**Value Proposition**

**Basic Requirements**

- Time Savings
- Security
- Price
- Reliability

**Differentiators**

- Multiple Channels
- Service
- Features/Ease of Use
- Products

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**Customer**

- Migrated
- New

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**Financial**

- Add & Retain High Value and High Potential Value Customers

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**Internal**

- Develop and Implement Cost-Effective Marketing Programs
- Develop Superior Service Capability
- Continue Leadership in Superior Product and Features Development
- Manage Attrition

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**Learning & Growth**

- Attract and Retain Key OFS Players and Staff in General
- Enhance OFS Bench Strength and Succession Planning
- Increase Manager Competency and Functional Technical Competency at All Levels
- Continue Development of OFS Organization and Culture

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**Wharton University of Pennsylvania**
Some of the Fundamental Questions ...

- How confident are you that business model incorporates the right drivers of financial success?
- How do you use the business model to allocate resources?
- How do you set targets for the measures?
- How can the business model be used to design an effective compensation?
Identifying the Right Drivers ...

- Develop a causal business model that
  - is linked to organizational strategy
  - articulates the key, hypothesized drivers of financial performance

- Construct reliable and valid measures for the key drivers

- Verify the linkages in the business model
A Major Fast Food Chain …

- Company operates or franchises 6,000+ stores
- Overall profitability was not growing enough to meet either internal or external expectations
- A series of meetings involving senior-level executives from all functional areas produced a consensus business model
- The consensus business model was developed using only management intuition (i.e., without any real data analysis)
A Major Fast Food Chain …

**Consensus Business Model**

- **Selection And Staffing**
  - Quantity
  - Education
  - Work Experience
- **Employee Satisfaction**
  - Supervision
  - Support
  - Fairness
- **Employee-Added Value**
  - Enablement
  - Alignment
  - Accountability
- **Customer Satisfaction**
  - Quality
  - Shopping Experience
  - Timeliness
- **Customer Buying Behavior**
  - Frequency
  - Retention
  - Referral
- **Sustained Growth**
  - Each outlet
  - Over time
  - Better than competition
- **Shareholder Value**
  - Growth
  - Earnings
  - Free Cash Flow

**Customer Satisfaction**

- Quality
- Shopping Experience
- Timeliness

**Employee-Added Value**

- Enablement
- Alignment
- Accountability

**Employee Satisfaction**

- Supervision
- Support
- Fairness

**Selection And Staffing**

- Quantity
- Education
- Work Experience

**Consensus Business Model**
Employee turnover became the primary measure used for decision-making and performance evaluation ("we just know this is the key driver")

Expensive human resource programs (retention bonuses) were put into place to reduce turnover

However, subsequent statistical analysis revealed:

- Stores with same overall turnover, but very different financial performance
- More profitable stores had higher employee turnover
- Only turnover among supervisory personnel had any relation to store financial performance
Management intuition was only partially correct

The turnover measure was changed from overall turnover to turnover by employee category

Further analysis provided an estimate for the financial cost of turnover (and an upper bound for the size of the retention bonus)

Presently analyzing the relation between employee measures, customer measures, and store profitability
A Large Operator of Convenience Stores …

- Company owns and operates thousands of convenience stores across the country
- Stores sell gasoline and various food products
- Management intuition:
  - “Gasoline sales are unrelated to food sales”
    - Managed using two different profit center
    - Separate P&L’s
  - “Only beer and cigarette sales explain profits from food sales”
  - “Employee and customer measures have no impact on profits from food sales”
Drivers of Store Financial Performance …

Notation: +/- refers to a strong statistical positive/negative link (precise numbers are not reported due to company request)
A Large Operator of Convenience Stores …

- Management intuition was not very insightful
- Combined the food and gasoline profit centers
- Began an internal dialog concerning reducing gasoline prices (with a low margin) to increase food sales (with a high margin)
- Started tracking employee satisfaction, customer satisfaction, and workplace injuries
- Incorporated these non-financial measures into the quarterly bonus plan
Allocating Resources ...

- Even if you have identified and validated the key drivers, you still need to determine how to allocation resources to improve these factors.
- It is necessary to determine root causes.
- Ultimately, you need to estimate the financial consequences of non-financial improvements.
Company is a major supplier of computer equipment to consumers and businesses.

Senior-level management desired a model to explain customer behavior.

Model results to be used for justifying and evaluating expenditures on customer initiatives.
Linking Drivers, Satisfaction, and Outcomes ...

- Relationship: 61
- Trust: 80
- Set Up: 86
- Physical: 80
- Troubleshooting: 72
- Shopping: 67
- Value: 78
- Customer Satisfaction: 75

- Retention: 73
- Recommendation: 74
- Share of Budget: 35
- Up Price Tolerance: 48
- Down Price Tolerance: 78
- Buy Additional: 76
Linking Perceptions and Behavior ...

- **Retention**
  - If the retention score was 90 or above (below 90), the customer bought the same brand again 56.76% (30.77%) of the time -- a change of 25.99%

- **Recommendation**
  - If the recommendation score was 90 or above (below 90), the customer recommendation resulted in 1.52 (0.87) purchases of the same brand -- a change of 0.65
Based on this model, capital resources were allocated to:

- Improving Relationship and Troubleshooting (e.g., improving technical service and quickly providing upgrade notices)
- Maintaining Trust, Set up, and Value (e.g., improving setup procedures and providing inexpensive migration and data backup services)

Developed a NPV model for valuing customer initiatives using

- Customer margins
- Estimated impacts
- Linkages between perceptions and customer behavior
Common intuition: “More is better”; “100% need to be 100% satisfied”

Considerable difficulty setting goals for any non-financial performance measure

Difficult to set targets for different measures when no common denominator exists (Is a 10% decrease in customer complaints equivalent to a 3% reduction in defect rates?)

Non-linear functional relations and tradeoffs among financial and non-financial measures complicate goal setting
Manufacturer Study …
Customer Satisfaction and Financial Results...

Major U.S. Telecommunications Firm (n = 2,156 customers)

Year 2 Revenue / Year 1 Revenue vs. Customer Satisfaction in Year 1

Ittner and Larcker, 1998
Investor Advisor Rating and Assets Invested …

Customer Satisfaction with Investment Advisor

Note: Assets invested is measured as a composite index that reflected the dollar amount invested, profitability of the products selected by the customer, etc.
In some cases there are diminishing returns from increases in non-financial measures, but other situations require very high performance.

Notable thresholds are commonly observed.

Sophisticated analysis is required to identify appropriate targets for non-financial measures.
Compensation Plan Design ...

- Most companies use their balanced scorecard or non-financial measures in their reward systems (i.e., If you know the value drivers, why not use them in the bonus plan?)

- Difficulties in using multiple performance measures in formula-based bonus plans:
  - Assigning weights to each measure
  - “Gaming” associated with a formula-based plan
  - Bonuses may paid even when performance is “unbalanced”

- One suggested solution for these problems is greater use of subjectivity and discretion in compensation plans
Formula-Based Bonus Plan at Citibank …

- Hurdles or targets (must meet to obtain bonus):
  - Customer satisfaction at or above region mean
  - Operations control audit must be satisfactory

- Potential bonus as a % of salary:
  - Margin growth – 3%
  - Growth in large customers – 1.5%
  - Checking balance growth – 3%
  - Revenue growth – 3%
  - Liability/asset growth – 1.5%
  - Expenses/revenues – 0.5%
  - Total balance/household – 0.5%
Balanced Scorecard Bonus Plan at Citibank …

Manager Bonus

Overall Par Score

Financial Par Score
3 Measures

Strategy Par Score
7 - 18 Measures

Customer Par Score
2 Measures

Control Par Score
3 Audit Judgements

People Par Score
5 Qualitative Assessments

Standards Par Score
5 Qualitative Assessments

Labor Grade

Salary
Outcomes at Citibank ...

- Performance evaluations were primarily influenced by financial results, despite the corporate strategy of emphasizing all of the balanced scorecard categories.

- Little weight was placed on “softer,” qualitative measures (after the initial quarters).

- Some of the non-financial measures emphasized in the performance evaluations had no ability to predict future financial performance, whereas some that were ignored were highly predictive.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a good understanding of the scorecard process</td>
<td>61%</td>
<td>18%</td>
<td>21%</td>
</tr>
<tr>
<td>With scorecard, it is easy to see the connection between individual and branch performance</td>
<td>41%</td>
<td>28%</td>
<td>31%</td>
</tr>
<tr>
<td>My scorecard goals cover all the important parts of my job</td>
<td>39%</td>
<td>21%</td>
<td>40%</td>
</tr>
<tr>
<td>When it comes to scorecard bonuses, I have no idea who gets what and why</td>
<td>55%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Overall, I am satisfied with the scorecard process</td>
<td>32%</td>
<td>23%</td>
<td>45%</td>
</tr>
</tbody>
</table>
Explicit Statements by Citibank Managers …

- “Eliminate the scorecards! Promotions and bonuses are still given to those who kiss-up to their supervisors, with little regard to performance, educational background, and experience”
- “I hate this new process. Favoritism comes too much into play”
- “Scorecards only reflect certain parts of your job”
- “This is a black box process, no one knows anything”
- “I would have liked to have known what my evaluation was going to be based on before the quarter began”
Compensation Plan Design …

- Many companies have experienced serious problems after incorporating non-financial measures into their bonus plan.

- One explanation is that subjectivity helps to combine disparate measures, but is very difficult to use in practice.

- Another explanation is that companies do not have a validated causal business model and they use unreliable and invalid measures in the bonus plan.
Financial Benefits of Using Causal Models …

Broad Industry Survey of CFOs (n = 157)

- Little Attempt to Use Causal Models and Link Non-Financial Performance to Future Financial Performance
- Extensive Effort to Use Causal Models and Link Non-Financial Performance to Future Financial Performance

Diagram showing the distribution of responses for raw ROA, raw ROE, adjusted ROA, and adjusted ROE.
Why is This So Hard?...

- Insufficient model development (e.g., simply relying on generic measurement frameworks or “best practice” is unlikely to work)

- Difficult to determine which measures are useful without sophisticated analysis
  - Measurement proliferation and disintegration
  - Measurement choice becomes more political

- Inadequate existing measures
  - Poor reliability and validity
  - Inconsistent definitions, units of analysis, and time frames
  - No common identifier to link data across functions
Why is This So Hard? ...

- Organizational barriers stop the sharing of data across functions (“data fiefdoms” and “islands of analysis”)
- Some managers do not want to know the results
- Inadequate analysis skills and resources inside organizations
- Technology (CRM, ERP, etc.) alone is not the answer
Research Opportunities …

- How much emphasis should be placed on intuition versus sophisticated analysis when selecting performance measures?

- How should companies select and combine performance measures that are defined in different dimensions (e.g., money, time, survey scores, etc.)?

- How much subjectivity should be used in compensation systems?

- How useful are “soft” or qualitative measures for directing managerial actions?
Research Opportunities …

- How should targets be set for non-financial (and financial) performance measures?
- What are the financial consequences of changing performance measurement systems?
- Are observed financial consequences simply the “Hawthorne Effect?”
- When should non-financial measures be disclosed to external analysts and shareholders?