Outline

- The purposes of performance measurement
- Conventional performance measurement
- Contemporary performance measurement
- Non-financial measures for operational control
- Strategic performance measurement systems
- Does non-financial performance lead to financial performance?
- Benchmarking
- Warning signs of an inadequate performance measurement system
- Designing and effective performance measurement system
Learning Objectives
- Compare and contrast activity-based and strategic-based responsibility accounting systems.
- Discuss the basic features of the Balanced Scorecard.
- Explain how the Balanced Scorecard links measures to strategy.
- Describe how an organization can achieve strategic alignment.

READINGS
  - Library Ref 658.4012 KAPL
  - Library Ref: 658.4012 OLVE
- Additional Readings provided on Learnline – Including summary of Kaplan’s approach.

What is strategy?
- Strategy specifies how an organisation matches its own capabilities with the opportunities in the marketplace to accomplish its objectives.
- A thorough understanding of the industry is critical to implementing a successful strategy.
- Value proposition – the set of customer values that an organisation will seek to provide.
- Core competencies – the means of creating that value for customers. These are also the few things that an organisation focuses on doing better than its competitors.
What is strategy?

- Industry analysis recognises five forces:
  - number and strength of competitors
  - potential entrants to the market
  - availability of equivalent products
  - bargaining power of customers
  - bargaining power of input suppliers.

What is strategy? – web links

- A brief YouTube explanation ‘What is Strategy?’ can be found at: https://www.youtube.com/watch?v=vvu-cFbTsY8U

Performance Measurement Framework
The purposes of performance measurement

- Communicate the strategy and plans of the business and align employees’ goals
- Allow manager to track their own performance against targets and take corrective action
- Evaluate subordinates’ performance, and provide rewards
- Guide senior managers in developing future strategies and operations

Problems with conventional financial performance measures

- They are not actionable
- Financial measures emphasise only one perspective
- Financial performance measures provide limited guidance for future actions
- May encourage actions which decrease both shareholder and customer value

Contemporary performance measurement systems

- Include non-financial and financial measures
- Have a strategic orientation—directly measure areas that provide competitive advantage
- Use external benchmarks
- Emphasise continuous improvement
Non-financial measures for operational control

- Non-financial measures reflect the drivers of future financial performance
  - Improvements will flow through to financial performance
- More actionable
  - Easier to investigate the source of low performance, compared to low cost variances
- More understandable and easier to relate to, particularly at the operational level

Non-financial measures for operational control (cont.)

- Customer satisfaction
  - Measured by survey administered to customers
- Customer Retention
- Level of Complaints
  - (negative measure not always useful)
- Defect measures
  - Measurement of faults in a product that occur during the manufacturing process
  - Support a high-quality strategy
- Quality
  - Periodic inspections or testing of products

Non-financial measures for operational control (cont.)

Labour productivity = \frac{\text{Number of units produced}}{\text{Number of direct labour hours}}

Total factor productivity = \frac{\text{Number of units produced}}{\text{Cost of all inputs to production}}

What it is NOT!
Non-financial measures for operational control (cont.)

- Stock status
- Accident report
- Safety statistics
- Multi-skilling
  - Number of employees who have attained skills to allow them to undertake a range of operational tasks
- Machine downtime
  - Number of hours (or percentage of total production hours) that machines are unable to operate
- Delivery on time
  - Prompt delivery to customers is an important driver of customer value

The problems with non-financial performance measures

- Wide choice of non-financial measures available
- Development can be ad-hoc and undirected
- Managers must necessarily make trade-offs between achieving some measures and not others
- Some measures lack integrity
  - Accuracy of the data, opportunity for manipulation
- Some measures are not easily translated into financial outcomes

Strategic performance measurement systems (SPMS)

- Translates strategy into an integrated set of financial and non-financial measures across a range of perspectives
- Examples include:
  - the Balanced Scorecard (BSC)(Kaplan);
  - Intangible Asset Scorecard;
  - Six Sigma;
  - Performance Prism (Neely et al., 2001).
- All provide the potential to identify cause and effect relationships between a variety of measures and the financial performance of the organisation and its strategies
BALANCED SCORE CARD

- A SET OF MEASUREMENTS THAT
  ✓ ACCURATELY REFLECT THE CRITICAL SUCCESS FACTORS
  THAT DETERMINE THE SUCCESS OF THE
  ORGANISATION’S STRATEGIES
  ✓ SHOW THE RELATIONSHIPS AMONG THE INDIVIDUAL
  MEASURE IN A CAUSE-EFFECT MANNER
  ✓ CONSIDER “WHAT IS NEEDED?” and “WHY US?”
  ✓ PROVIDE A BROAD BASED VIEW OF THE CURRENT
  STATUS OF THE ORGANISATION

The Progress of Scorecard Development

- 1900s - Le Tableau de Bord developed in the 1900s by French process
  engineers to establish the cause-and-effect relationships that would permit
  them to make production improvements of multiple measures.
- 1950s - The General Electric Measurement Framework featuring eight
  measures often identified in accounting textbooks as likely elements of
  management control systems.
- 1991 - The Five Dimensions (Smith & Dikolli) establishes an early
  framework which revolves around five factors: goals, customers,
  employees, processes and information.
- 1991 - Critical Success Factors (Beischel & Smith) identifying five critical
  success factors, thought to be universal for all manufacturing companies.
- 2003 - The Dynamic Multidimensional Performance Model (Malz et al.)
  enables organisations to use different measures in each of five
  dimensions, viewed with varying degrees of importance, depending
  on industry and competitiveness of the environment.
- 2003 - The Performance Prism (Neely et al.) seeks to address
  stakeholder value, rather than purely shareholder value. The Prism
  is a three-dimensional model based around strategies, processes
  and capabilities.
BALANCED SCORE CARD

- To understand the Balanced Scorecard approach fully you should be familiar with the following issues discussed in the various recommended texts (Kaplan et.al, Nils-Goran Olve et.al.)
- OUTCOME AND DRIVER MEASURES
- FINANCIAL AND NON-FINANCIAL MEASURES
- INTERNAL AND EXTERNAL MEASURES
- PERSPECTIVES OF A BALANCED SCORECARD
- MEASUREMENT DRIVES CHANGE
- IMPLEMENTATION OF A BALANCED SCORECARD
- PITFALLS OF THE BALANCED SCORECARD

OUTCOME AND DRIVER MEASURES
- OUTCOME MEASURES indicate “results” of strategy (e.g. quality level)
- DRIVER MEASURES indicate “progress” of strategy (e.g. lead times)

FINANCIAL AND NON-FINANCIAL MEASURES
- INTERNAL e.g. production yield, inventory turnover
- EXTERNAL e.g. customer satisfaction, market share

A strategic-based responsibility accounting system the Balanced Scorecard translates the mission and strategy of an organization into operational objectives and measures for four different perspectives:
- THE FINANCIAL PERSPECTIVE
- THE CUSTOMER PERSPECTIVE
- THE PROCESS PERSPECTIVE
- THE INFRASTRUCTURE PERSPECTIVE (LEARNING AND GROWTH)
BALANCED SCORE CARD

Refer to lecsupove07.pdf

© Kevin J Clark CDU Slide 26 Last Revision 15/04/16

BALANCED SCORE CARD PERSPECTIVES

Financial Perspective
How do we look to shareholders?

Customer Perspective
How do customers see us?

Internal Business Perspective
What must we excel at internally?

Innovation & Learning Perspective
How do we learn and innovate to create the future?

Elements of a Strategic-Based Responsibility Accounting System

Responsibility is Defined

Financial
Process
Communicate Strategy
Alignment of Objectives

Customer
Infrastructure

Balanced Measures
Performance Measures are Established
Link to Strategy

© Kevin J Clark CDU Slide 27 Last Revision 15/04/16

9 OF 21
Elements of a **Strategic-Based** Responsibility Accounting System

- **Financial Measures**
- **Performance Measures**
- **Customer Measures**
- **Process Measures**
- **Infrastructure Measures**

- **Individuals are Rewarded**
  - Based on Multidimensional Performance
  - Bonuses
  - Salary Increases

- **Bonuses**
- **Salaries Increases**
- **Promotions**
- **Gain-sharing**

**BALANCED SCORE CARD**

- A SET OF MEASUREMENTS THAT
  - ✔ ACCURATELY REFLECT THE CRITICAL SUCCESS FACTORS THAT DETERMINE THE SUCCESS OF THE ORGANISATION’S STRATEGIES
  - ✔ SHOW THE RELATIONSHIPS AMONG THE INDIVIDUAL MEASURES IN A CAUSE-EFFECT MANNER
  - ✔ PROVIDE A BROAD BASED VIEW OF THE CURRENT STATUS OF THE ORGANISATION

**Summary of Objectives and Measures: Financial Perspective**

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue Growth:</strong> Increase the number of new products</td>
<td>Percentage of revenue from new products</td>
</tr>
<tr>
<td>Create new applications</td>
<td>Percentage of revenue from new applications</td>
</tr>
<tr>
<td>Develop new customers and markets</td>
<td>Percentage of revenue from new sources</td>
</tr>
<tr>
<td>Adopt a new pricing strategy</td>
<td>Product and customer profitability</td>
</tr>
<tr>
<td><strong>Cost Reduction:</strong> Reduce unit product cost</td>
<td>Unit product cost</td>
</tr>
<tr>
<td>Reduce distribution channel cost</td>
<td>Cost per distribution channel</td>
</tr>
<tr>
<td><strong>Asset Utilisation:</strong> Improve asset utilisation</td>
<td>Return on investment</td>
</tr>
<tr>
<td></td>
<td>Economic value added</td>
</tr>
</tbody>
</table>

© Kevin J Clark CDU Slide 28 Last Revision 15/04/16

© Kevin J Clark CDU Slide 29 Last Revision 15/04/16

© Kevin J Clark CDU Slide 30 Last Revision 15/04/16

See Nils-Goran et al. Appendix-Examples of Measures in Different Perspectives
### Summary of Objectives and Measures: Customer Perspective

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core:</strong></td>
<td></td>
</tr>
<tr>
<td>Increase market share</td>
<td>Market share (percentage of market)</td>
</tr>
<tr>
<td>Increase customer retention among customers</td>
<td>Percentage growth of business from existing customers</td>
</tr>
<tr>
<td>Increase customer acquisition</td>
<td>Number of new customers</td>
</tr>
<tr>
<td>Increase customer satisfaction</td>
<td>Ratings from customer surveys</td>
</tr>
<tr>
<td>Increase customer profitability</td>
<td>Customer profitability</td>
</tr>
<tr>
<td><strong>Performance Value:</strong></td>
<td></td>
</tr>
<tr>
<td>Decrease price</td>
<td>Price</td>
</tr>
<tr>
<td>Decrease postpurchase costs</td>
<td>Postpurchase costs</td>
</tr>
<tr>
<td>Improve product functionality</td>
<td>Ratings from customer surveys</td>
</tr>
<tr>
<td>Improve product quality</td>
<td>Percentage of returns</td>
</tr>
<tr>
<td>Increase delivery reliability</td>
<td>On-time delivery percentage</td>
</tr>
<tr>
<td>Improve product image and reputation</td>
<td>APQ, NPS, etc.</td>
</tr>
</tbody>
</table>

See Nils-Goran et al. Appendix-Examples of Measures in Different Perspectives.

### Summary of Objectives and Measures: Process Perspective

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovation:</strong></td>
<td></td>
</tr>
<tr>
<td>Increase the number of new products</td>
<td>Number of new products vs. planned</td>
</tr>
<tr>
<td>Increase proprietary products</td>
<td>Percentage revenue from proprietary products</td>
</tr>
<tr>
<td>Decrease new product development time</td>
<td>Time to market (from start to finish)</td>
</tr>
<tr>
<td><strong>Operations:</strong></td>
<td></td>
</tr>
<tr>
<td>Increase process quality</td>
<td>Quality costs</td>
</tr>
<tr>
<td>Increase process efficiency</td>
<td>Unit cost trends</td>
</tr>
<tr>
<td>Decrease process time</td>
<td>Cycle time and velocity</td>
</tr>
</tbody>
</table>

See Nils-Goran et al. Appendix-Examples of Measures in Different Perspectives.

### Definitions

- **Cycle Time:** The time required to produce one unit of product.
- **Velocity:** The number of units that can be produced in a given period of time (e.g., units per hour).

**Manufacturing Cycle Efficiency (MCE):**

\[
\text{MCE} = \frac{\text{Processing time}}{\text{Processing time} + \text{Move Time} + \text{Set Up Time} + \text{Wait Time}}
\]
Summary of Objectives and Measures
Learning and Growth Perspective

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase employee capabilities</td>
<td>Employee satisfaction ratings</td>
</tr>
<tr>
<td></td>
<td>Employee turnover percentages</td>
</tr>
<tr>
<td></td>
<td>Employee productivity (revenue/employee)</td>
</tr>
<tr>
<td></td>
<td>Hours of training</td>
</tr>
<tr>
<td></td>
<td>Strategic job coverage ratio (percentage of critical job requirements filled)</td>
</tr>
<tr>
<td>Increase motivation and alignment</td>
<td>Suggestions per employee</td>
</tr>
<tr>
<td></td>
<td>Suggestions implemented per employee</td>
</tr>
<tr>
<td>Increase information systems capabilities</td>
<td>Percentage of processes with real-time feedback capabilities</td>
</tr>
<tr>
<td></td>
<td>Percentage of customer-facing employees with online access to customer and product</td>
</tr>
</tbody>
</table>

BALANCED SCORE CARD IMPLEMENTATION

- DEFINE STRATEGY
- DEFINE MEASURES OF STRATEGY
  - in cause/effect manner
    - Nils-Goran et al. Figure 3.12 page 71 & Figure 4.7 page 110 and Ch7 pp189-225
- INTEGRATE MEASURES INTO MANAGEMENT SYSTEM
  - e.g. integrate into formal and informal structures; culture; compensation policies
- REVIEW MEASURES FREQUENTLY
  - review results and “viability” of measures

DEFINE THE MEASURES OF STRATEGY

- Identify a vision. Where is the organization going?
- Identifying strategies you tell how you will get there.
- Define critical success factors and perspectives, which means you have to ask what do we have to do well in each perspective.
- How do we measure that everything is going the expected way?

Refer to Page 2 lecsupove07.pdf
INTEGRATE MEASURES INTO MANAGEMENT SYSTEM

- Evaluation of the scorecard.
- Consider how do we secure that we are measuring the right things?
- Based on this, create action plans and plan reporting and operation of the Scorecard.
- How do we manage the Scorecard?
  - Which persons should have reports and what should they look like?

Refer to Pages 2 & 3 lecsupove07.pdf

Linking Measures to Strategy: Strategy maps

- A visual representation that explains the cause and effect relationships linking the objectives of the four perspectives of the BSC and the organisation’s objectives
- May also identify linkages between lag and lead measures
- A tool to communicate to managers the components of the strategy and the processes that will help achieve it
Lag and lead indicators

- Lag indicators
  - Monitor progress towards the organisation's objectives
  - Difficult to monitor directly
  - Summary of financial measures, market share, customer satisfaction

- Lead indicators
  - Measures that drive the outcomes and provide information that is actionable and manageable
  - Relate to the processes and activities of the business
  - Improvements in these measures should, over time, flow through to improvements in lag indicators

Does non-financial performance lead to financial performance?

- Improvements in non-financial measures will not result in improved profits if
  - Management has selected the wrong critical success factors
  - Management fails to utilise freed-up resources, following on from improvements in non-financial measures
  - There is a lag between financial and non-financial performance
  - There are incentives to engage in dysfunctional behaviour, such as manipulating measures or maximising performance of some measures at the expense of others

---

BALANCED SCORE CARD

PITFALLS

- Poor correlation between nonfinancial measures and results
- Silence on the selection of specific performance measures and the role of performance targets
- Fixation on financial results
- A shareholder-only focus
- No mechanisms for improvement
- Measuring overload
- Difficulty in establishing trade-offs
- Failure to address strategic uncertainties
  - Including change management issues, new product development issues, start-up issues, and issues related to SMES (small and medium-sized enterprises) generally
Balancing sustainability

- Social and environmental outcomes can be included as an additional perspective in the balanced scorecard.
- Strategies that lead to waste reduction have both environmental and economic benefits.
- Poor social or environmental performance may create risks that must be recognised when evaluating the financial performance measures.

---

Strategy Implementation and the Balanced Scorecard – Web Links

- ‘Balanced Scorecard Basics’ can be found at: https://www.balancedscorecard.org/BSCResources/AbouttheBalancedScorecard/tabid/55/Default.aspx

- ‘Implementing Strategy with the Balanced Scorecard: An Introduction to the Strategy-Focused Organization’ can be found at: http://www.information-management.com/issues/20021001/5788-1.html

---

Evaluating the success of strategy and implementation

- Managers and management accountants need to evaluate the success of a strategy by linking the sources of operating profit increases to the strategy.
Evaluating the success of strategy and implementation – web links

- ‘Aligning Strategic and Operational Planning with Balanced Scorecard Techniques’ can be found at: http://www.lenskold.com/content/articles/rigatuso_aug07.html
- ‘Balanced Scorecard: implementation pitfalls part 1’ plus links to other balanced scorecard articles can be found at: http://www.ap-institute.com/Balanced%20Scorecard%20Implementation%20Pitfalls%20part%201.html

Benchmarking

- A process of comparing the products, functions and activities in an organisation against external businesses
- Identify areas for improvement
- Identify the functions/activities to be benchmarked, and performance measures
- Select benchmarking partners
- Data collection and analysis
- Establish performance goals
- Implement plans

Forms of benchmarking

- Internal benchmarking
- Benchmarking operations that are internal to the larger business group
- Competitive benchmarking
- Benchmarking with companies in the same industry
- Industry benchmarking
- Against companies that have similar interests and technologies within an industry
- Performance measures and practices are directly comparable
- Best-in-class or process benchmarking
- Benchmarking against the best practices that occur in any industry
Benchmarking against competitors’ cost structures

- Costs can be inferred by using publicly available information, such as sales volume, market share, product mix
- Industry-sponsored databases
- Stockbroking firms
- Specialist benchmarking consulting firms may provide data

Warning signs of an inadequate performance measurement system

- How does a firm know when its performance measurement system is inadequate?
- Performance is acceptable on all dimensions, except profit
- Customers do not buy product, even when prices are competitive
- Managers are not concerned when performance reports are not supplied
- Significant time is spent debating the meanings of measures
- Measures have not changed for some time
- The business strategy has changed

Designing an effective performance measurement system

- Link to strategy and goals of the organisation
- Encourages goal congruence
- Keep it simple
  - Measures should be understandable and easy to communicate with employees
- Recognise controllability
  - Responsibility for achieving measures should relate to activities and processes which employees can control
- Emphasise the positive
- Be timely
  - Measures reported as close as possible to the period to which they relate
Designing an effective performance measurement system (cont.)

- Relate to benchmarking
  - Against external standards
- Embrace participation and empowerment
  - To promote motivation and goal congruence
- Include only a few performance measures
  - Rule of thumb is that no person should be responsible for more than four or five measures
- Link to rewards
  - Motivational

Designing measures for continuous improvement

- Continuous improvement can be built into performance measurement systems by
  - Selecting relevant performance targets that focus on problem areas and moving to other measures when performance has improved
  - Defining and re-defining the measure to provide scope for improvement and increasing the challenge
  - Making the performance target more challenging by making the performance target more difficult over time

Behavioural implications of changing performance measures

- Resistance to change may be more likely when
  - Individuals consider targets unfair or unachievable
  - Individuals’ rewards are affected by changes
- Changes are most likely to succeed if
  - They are supported across the entire organisation
  - Bottom-up approaches are included
  - New measures should not be seen as an ‘add on’ to an inadequate performance measurement system
**Summary**

- The main purposes of performance measurement systems are to communicate the strategy, track performance again targets, evaluate subordinates’ performance and reward, develop future strategies.
- Conventional financial-based performance measurement systems have many limitations and can be enhanced by non-financial measures.
- Non-financial measures have their own limitations.
- Strategic performance measurement systems (e.g. the balanced scorecard) track performance across key strategic areas of the organisation.

**Summary (cont.)**

- Strategy maps and du Pont charts assist in the communication of strategy and the articulation of the performance measurement system.
- Benchmarking provides an external perspective to allow areas for improvement to be identified.
- Effective performance measurement systems should link to strategy and goals, be simple, recognise controllability, emphasise the positive, be timely, include benchmarking, embrace participation, include only a few measures and link to rewards.

**What is SIX SIGMA**

- SIX SIGMA IS A PHILOSOPHY OF DOING BUSINESS WITH A FOCUS ON ELIMINATING DEFECTS THROUGH FUNDAMENTAL PROCESS KNOWLEDGE.
- SIX SIGMA METHODS INTEGRATE PRINCIPLES OF BUSINESS, STATISTICS AND ENGINEERING TO ACHIEVE TANGIBLE RESULTS.
- Basic methodology consists of the following five steps:
  - Define the process improvement goals.
  - Measure the current process and collect relevant data for future comparison.
  - Analyse to verify relationship and causality of factors.
  - Improve or optimize the process based upon the analysis.
  - Control to ensure that any variances are corrected before they result in defects.
What is the PERFORMANCE PRISM

- The Performance Prism is a performance measurement framework (Neely, Adams, & Kennerley, 2002).
- It addresses the key business issues, asking critical questions for decision makers to think through the links between the indicators used (Neely, Adams, & Crowe, 2001).
- A three-dimensional model, in five perspectives, it addresses an organization’s major stakeholder groups:
  - Investors;
  - Customers & Intermediaries;
  - Suppliers;
  - Regulators;
  - Communities.

What is the PERFORMANCE PRISM

- A key principle behind the Performance Prism is to have a limited number of indicators in order to give clarity to what the organization is trying to achieve (Centre for Business Performance, Cranfield School of Management, 2009).
- The five facets of the Performance Prism
  - Stakeholder Satisfaction
    - (Who are the key stakeholders and what do they want and need?)
  - Strategies
    - (What critical processes do we require if we are to execute these strategies?)
  - Processes
    - (What capabilities do we need to operate and enhance these processes?)
  - Capabilities
    - (What contributions do we require from our stakeholders if we are to maintain and develop these capabilities?)
  - Stakeholder Contribution
    - (What strategies do we have to put in place to satisfy the wants and needs of these key stakeholders?)

POPULAR MYTH ABOUT PRODUCTIVITY

- Contrary to popular rhetoric (usually political)
- PRODUCTIVITY is NOT about paying less for the same inputs (e.g., wage reductions)
- Paying less for the ingredients of a cake DOES NOT make for more cake (a better productivity)
- Using the same ingredients for MORE quality output also makes for better productivity