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Research Paper

Performance Measurement Systems

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This Paper has been created as a practical guide to developing performance measurements in **any** industry. It has been divided into the following 6 sections:

1. Introduction
2. Measurement as a management support system
3. What is a balanced scorecard?
4. Developing a customized balanced scorecard
5. Target setting and quantifying performance for incentive programs
6. New performance management system and the performance improvement process

Introduction

The measurement of the performance of business and other organizations has long been of central interest to both managers and management accounting researchers. However, management accounting has tended to restrict itself to considering only financial performance, and to use frameworks and theories drawn primarily from them.

Even the attention that has been paid to the so-called 'behavioural aspects' of management accounting has been incorporated into the economic approach through the development of agency theory. However, the discipline of economics does not provide a sufficiently rich picture of the internal activities of organizations to provide reliable guidance to the designers of management control systems. Other approaches, most notably those based on critical theory, have been used to study other aspects of the role and use made of accounting systems, but have tended to concentrate on sectional interest rather than on overall control.

Management control systems

Management control systems provide information that is intended to be useful to managers in performing their jobs and to assist organizations in developing and maintaining viable patterns of behaviour. Any assessment of the role of such information therefore requires consideration of how managers make use of the information being provided to them. The traditional framework for considering these issues was
developed by Anthony 1965 at the Harvard Business School under the title of 'management planning and control systems'. This distinguished 'management con.
trol' from 'strategic planning' and 'operational control'. His approach was intended to achieve two aims. First, it was intended to broaden
the scope of information being considered beyond just accounting information. Paradoxically, it was largely unsuccessful in achieving this, mainly because of its deliberate neglect of 'operational control'. Operational control was neglected because it was apparent that different organizations used very different practices at the

operating level, so Anthony concentrated on the commonalties that existed between them. Focusing on commonalties allowed the use of a common language capable of including all organizational activities. Accounting provided such a language and management control became largely synonymous with management accounting at a time when this discipline of management accounting was in almost terminal decline.

Budgeting

Budgeting has traditionally been a central plank of most organizations' control mechanisms, as it is one of the few techniques capable of integrating the whole gamut of organizational activity into a single coherent summary. Performance is defined essentially as profitability; in a profit centre, the overall measure of performance

combines an output measure revenue with an input measure cost and the budgeting process seeks to keep the two elements in balance. Cost centres are more problematic as results can no longer be measured in financial terms, and thus cannot be directly compared with costs. The budgeting process tends to assume a given level of output or sales and attempts to determine an appropriate level of spending.13 In order to develop a budget there is a need for an underlying plan by which the organization's objectives are expected to be achieved and which serves as the basis for the cost structure underlying the budget.14 Target setting has long been seen as an important part of budgeting, with both the process budget revisions are undertaken, they prove to be time-consuming and can lead to control loss. The essentially hierarchical nature of budgetary control is in stark contrast to the focus on value chains and business processes that many organizations are adopting. The budget focuses only on financial results and, worse, does not necessarily pay sufficient attention to the means by which those results are to be achieved. Valid as these criticisms undoubtedly are, the budgeting process still represents the central co-ordinating mechanism often the only .co-ordinating mechanism that most organizations have. It is therefore not to be discarded lightly, but the key areas needing improvement must be addressed. Some questions that arise from the preceding framework include:

1.How can budgeting be better tied into the achievement of strategic goals? How can resource allocation be matched to strategic imperatives?

2.How can budgeting be adapted to monitor and control the business processes along the value chain running from the extraction of raw materials through to the delivery of products to the final consumer.

3.Are there better ways of setting budgetary targets than the usual incrementalism based on historic achievement?

4.Can we avoid the distorting effects that arise when managers are given a reward for achieving budget targets?

5.Can variances be used in processes of learning and adaptation rather than in the apportionment of blame?

Above all, can the budget process be harnessed to add value to organizational activities rather than representing a drain on organizational and managerial resources?

The performance management framework thus flags up some vital issues for studying and revising budgetary practice. These issues will be considered in more depth by looking in some detail at two currently popular techniques that have been more recently developed to improve organizational control. The first is a purely financial performance measure, Economic Value Added EVA , which it is argued can avoid some of the performance measurement problems currently experienced with other financial performance measures. The second is the Balance scorecard approach developed by Kaplan and Norton 1992, 1996 , which explicitly adopts a multi-dimensional framework. Although these are sometimes seen as competing approaches, they will be regarded here as complementary, for reasons that will become apparent. Both have been explicitly devised to allow a more structured approach to performance management and to avoid some of the problems associated with more traditional control methods, such as budgeting.

.**Performance Measurement Systems:**

1.0 Introduction There are 3 charts in this section

Chart 1.1: This is a general introductory chart which has been tailored for measurements to demonstrate that a balanced scorecard is an integral part of business planning and strategy

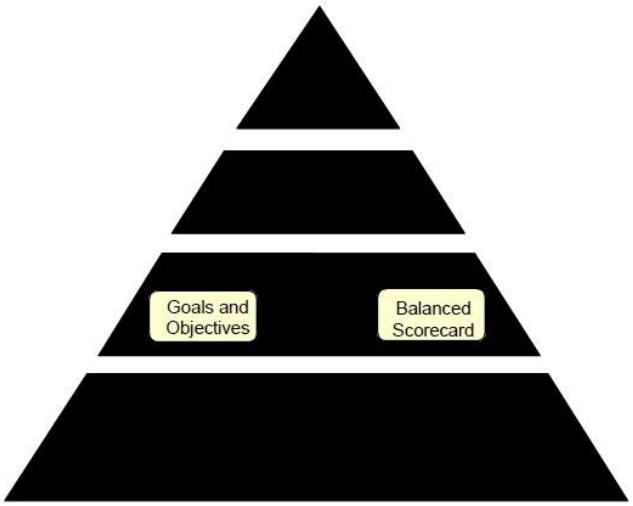
Chart 1.2: This chart emphasizes that strategy implementation must be top-down and a goes downwards from the top - making company objectives actionable at all levels

An important chart which demonstrates that the balanced scorecard is a powerful approach for identifying areas of improvement and inadequacies in support processes. A balanced scorecard should be a prelude to a business re-design or a process re-engineering.

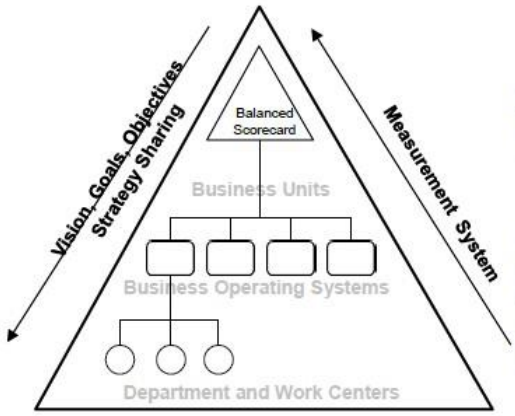
The Balanced Scorecard Approach

The Balanced Scorecard Approach has been developed at the Harvard Business School by Kaplan and Norton since the early 1990s. It is an essentially multi-dimensional approach to performance measurement and management that is linked specifically to organizational strategy.20 It suggests that as well as financial measures of performance, attention should be paid to the requirements of customers, business processes and longer-term sustainability. Thus four areas of performance are defined now labelled as financial, customer, internal business and innovation and learning , and it is suggested that up to four measures of performance should be developed in each area. These potentially 16 performance measures are not necessarily comprehensive, but should represent the critical success factors necessary for continued organizational success or, minimally, survival. Thus, there is intended to be a close link between the business unit strategy adopted and the performance measures selected. In the following discussion, the performance management framework will be applied to analyse the balanced scorecard approach and to suggest some extensions and improvements that might be made to the approach. These are quite tentative, and meant primarily to illustrate the power of the framework both to make practical recommendations, and to provide a structure for empirical research and analysis.

1.1 The balanced scorecard is an integral part of business planning and strategy



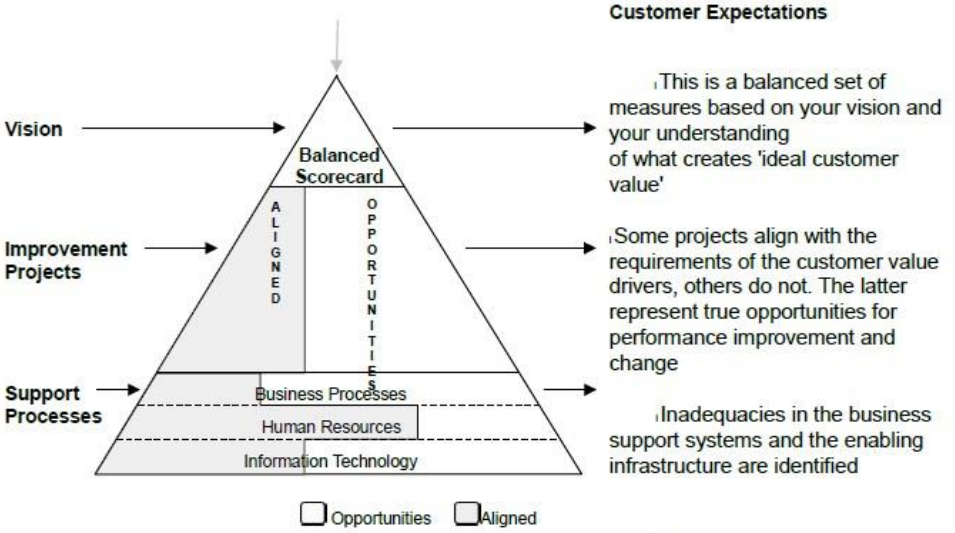
1.2 A performance measurement system is a tool for implementing strategic planning and achieving continuous improvement at all levels of an organization



Measures send signals into the organization as to what is important. To send the **right** signal measure the **right** things, i.e., the value drivers

In order for a measurement process to serve as a force for improvement, it must be understood and accepted by its users. This is achieved by involving the users in it's development

1.3 A balanced scorecard identifies performance mprovement opportunities/targets and highlights the need for business redesign or enterprise processes



This is a balanced set of measures based on your vision and your understanding of what creates 'ideal customer value'

Some projects align with the requirements of the customer value drivers, others do not. The latter represent true opportunities for performance improvement and change

Inadequacies in the business support systems and the enabling infrastructure are identified

Performance Measurement Systems:

2.0 Measurement as a management support system This section shows that measures provide the necessary information for management decision making and as such are a natural and inherent part of management process

Chart 2.1: Outline the Bindra continuous improvement cycle. This puts the Deming/Shewhart cycle in more contemporary terms

Chart 2.2 These charts demonstrate that a good performance measurement system

- 2.4: is an important information system for management. It is important to measure total business operating systems (BOS) to avoid suboptimization

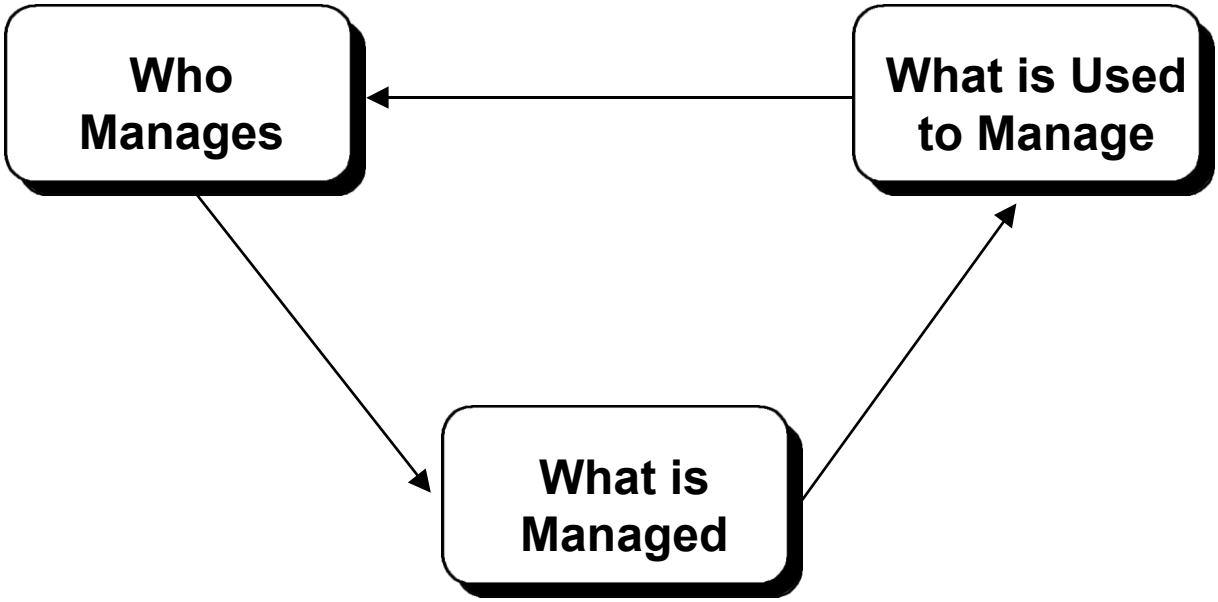
Chart 2.5: This is an example of an input/output exercise to determine the customer value drivers. These are labeled "Requirements"

2.1 First, let us consider why measures are important

Good, high-quality measurement systems have to be designed and developed and maintained

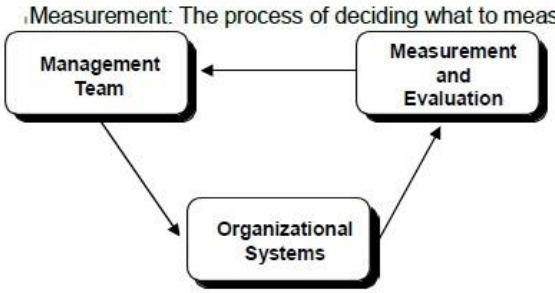
Well-designed and developed measurement systems linked to a business strategy that is understood and accepted drive continuous performance improvement [1] Measurements are a natural and inherent part of the management process

2.2 Measurement is a decision support system for management



A management system consists of three components which are interrelated

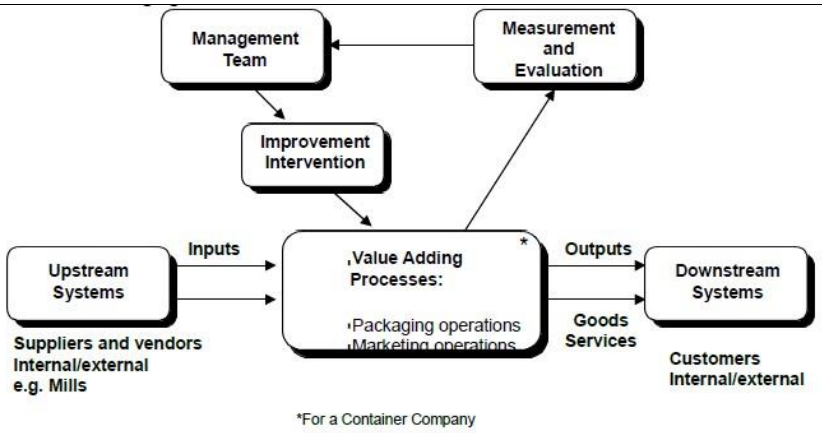
2.3 Measurement is an integral part of the management process



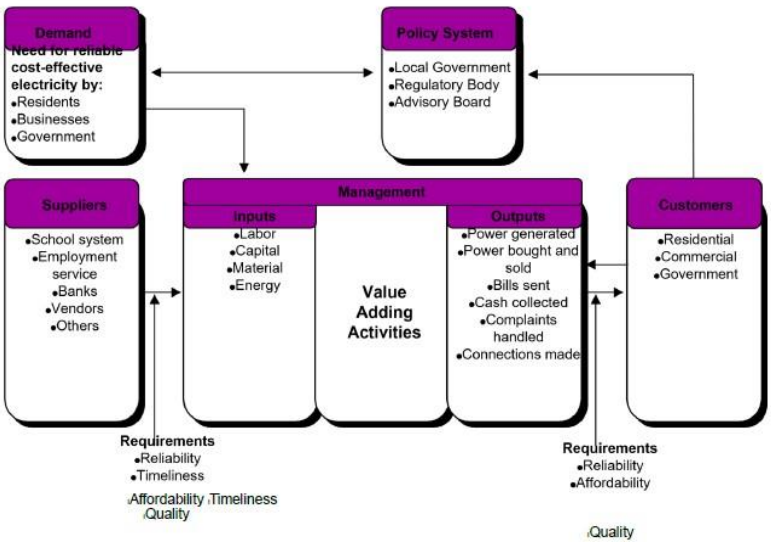
- Measurement: The process of deciding what to measure, collecting data, tracking over time, etc.
- Evaluation: The process by which we impose standards, specifications, etc. to determine if performance meets needs/expectations
- Organizational system: A generic phrase used to describe a work group, department, function, plant, division, corporation or firm

2.4 To ensure that plans are implemented effectively we measure all the way from downstream to upstream systems Management's Role:

Ensure that the jobs get done, on time, within specifications, and within budget; and l Continuously improve the performance of the system(s) they are managing



2.5 Here is an example of an organizational systems diagram developed for a publicly owned electric utility



Performance Measurement Systems:

3.0 What is a balanced scorecard?

Chart 3.1: Definition of the balanced scorecard in terms of focused performance **Chart 3.2** Our version of the balanced scorecard **& 3.3:**

Chart 3.4: Norton and Kaplan version of the balanced scorecard

Chart 3.5: This chart demonstrates that Norton & Kaplan accommodate only 77% of 1992 Baldrige criteria. Our version, by creating a customizes balanced scorecard matches 100% with client requirements

3.1 A balanced scorecard provides a system for measuring focused performance, i.e., managing things that really matter

Focused performance may be defined as:

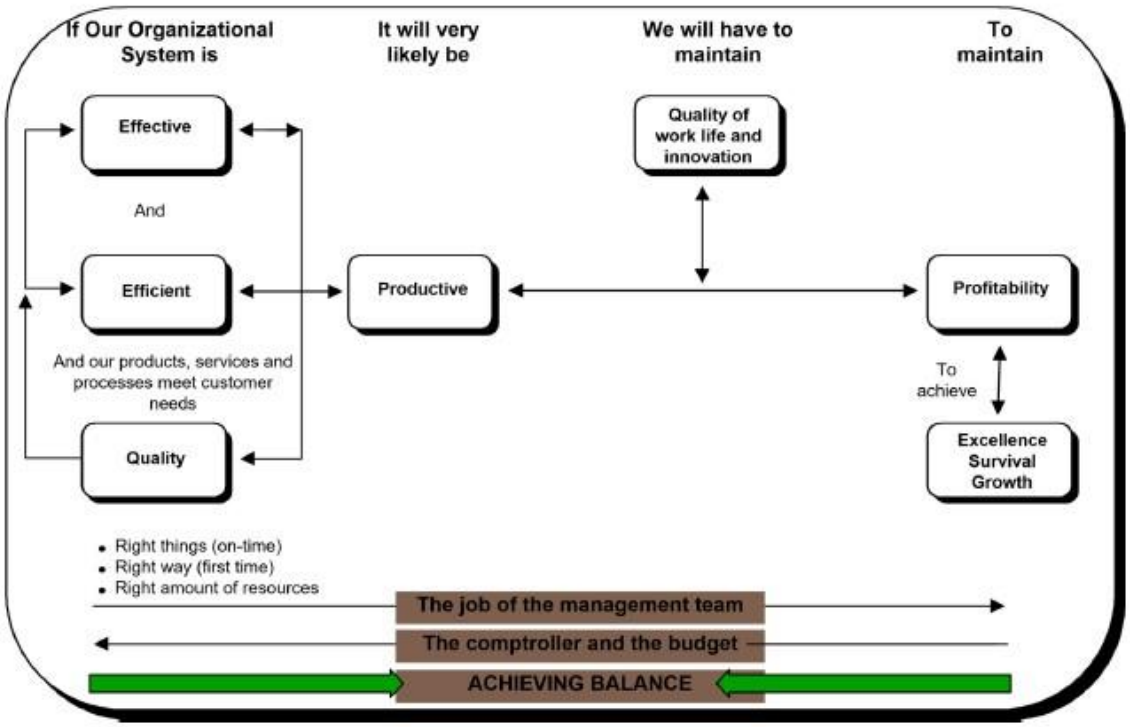
An approach for driving good trade-off decisions that balance share-holder, employee and customer requirements

A flexible framework that makes company objectives actionable at all levels of the organization

An approach for prioritizing improvement issues cross-functionally l An integrater of effort to capture the most significant opportunities

To focus improvement, business concepts like strategy, value adding processes and performance measures must be connected but remain flexible for custom design, focused performance is an approach that accomplishes this

3.2 It is important to create a balanced scorecard across all performance criteria to ensure desired outcomes are achieved

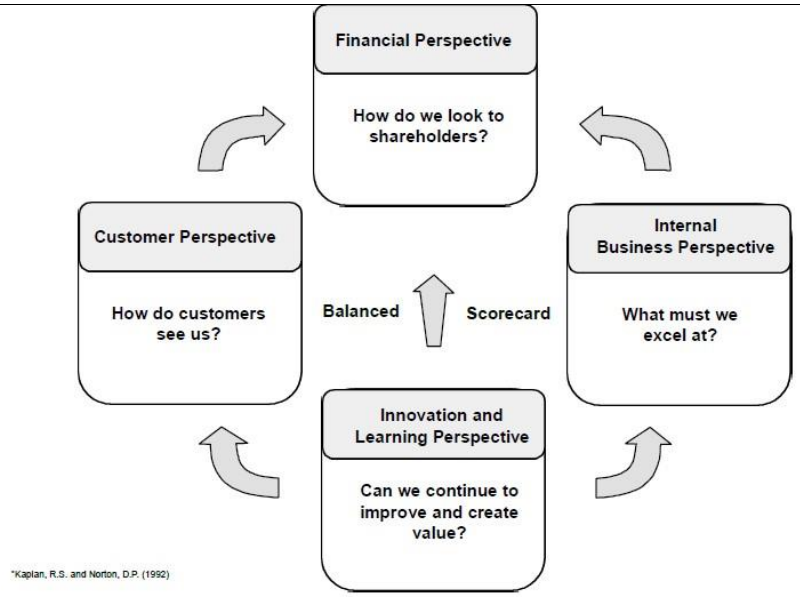


3.3 Perhaps Lee Iacocca said in better words what we are trying to describe in model form

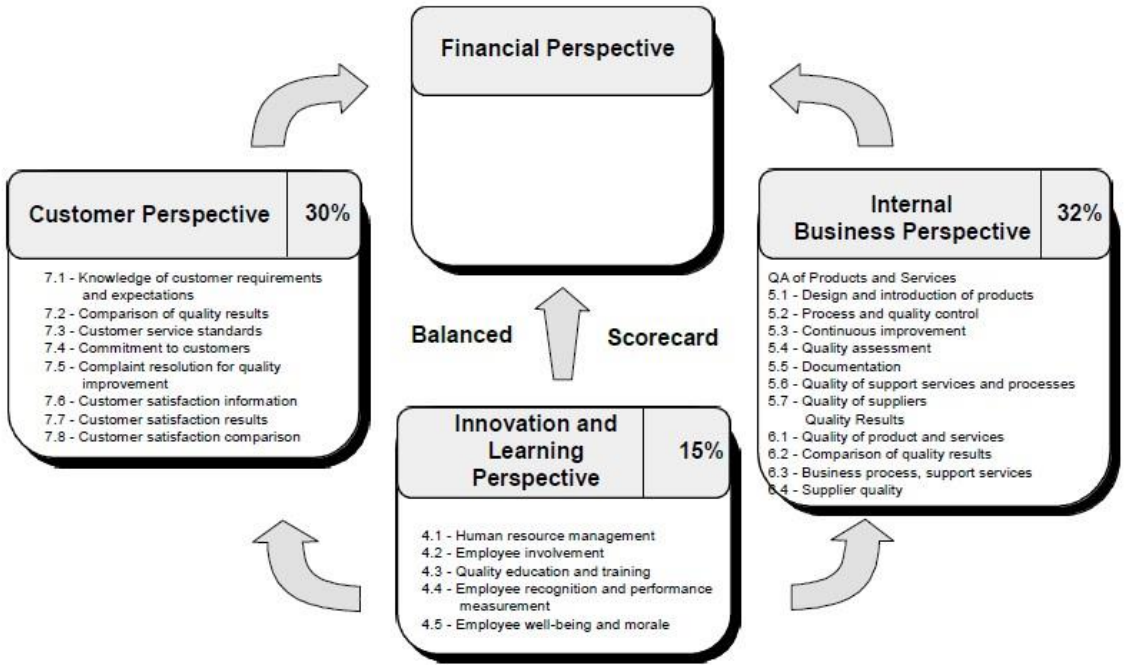
By their very nature financial analysts tend to be defensive, conservative, and pessimistic. On the other side guys in sales and marketing are aggressive, speculative, and optimistic. They're saying let's do it, while the bean counters are cautioning why you shouldn't. If the bean counters are too weak, the company will spend itself into bankruptcy. But, if they are too strong the company would not meet the market or stay competitive. In a company you need both sides of the equation.

3.4 Organizations should develop measures for their business units creating a balanced scorecard from which to measure continuous improvement

Kaplan and Norton have surveyed several companies to create a model of a balanced scorecard



3.5 Only 77% of the Baldrige National Quality Award Criteria is covered by the Kaplan/Norton approach - hence the need for a customized balanced scorecard



Performance Measurement Systems:

4.0 Developing a customized balanced scorecard There are 7 charts in this section outlining the practical steps necessary to create a customized balanced scorecards

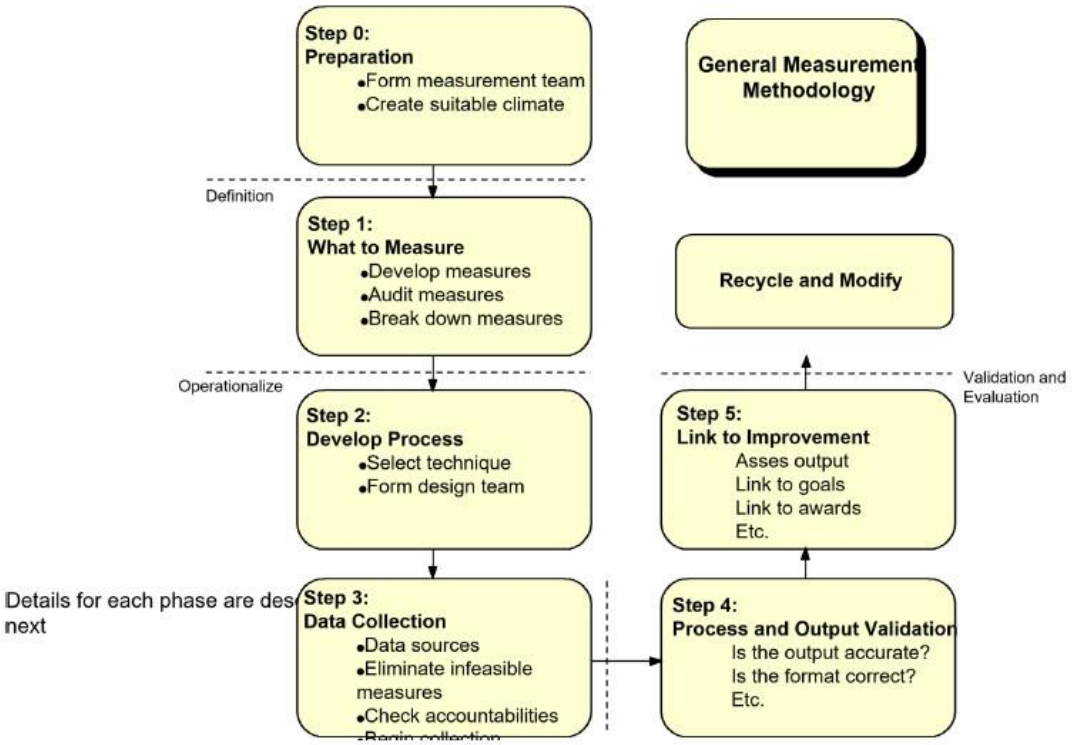
Chart 4.1: Outlines the total methodology including the balanced scorecard, data collection and data portrayal and perception. Greater details on each step may be obtained from the author **Chart 4.2 -** Show the steps we go through to create a customized balanced scorecard.

4.5: A two day workshop with the top management team is necessary for this. 4.5 is an example of the workshop output

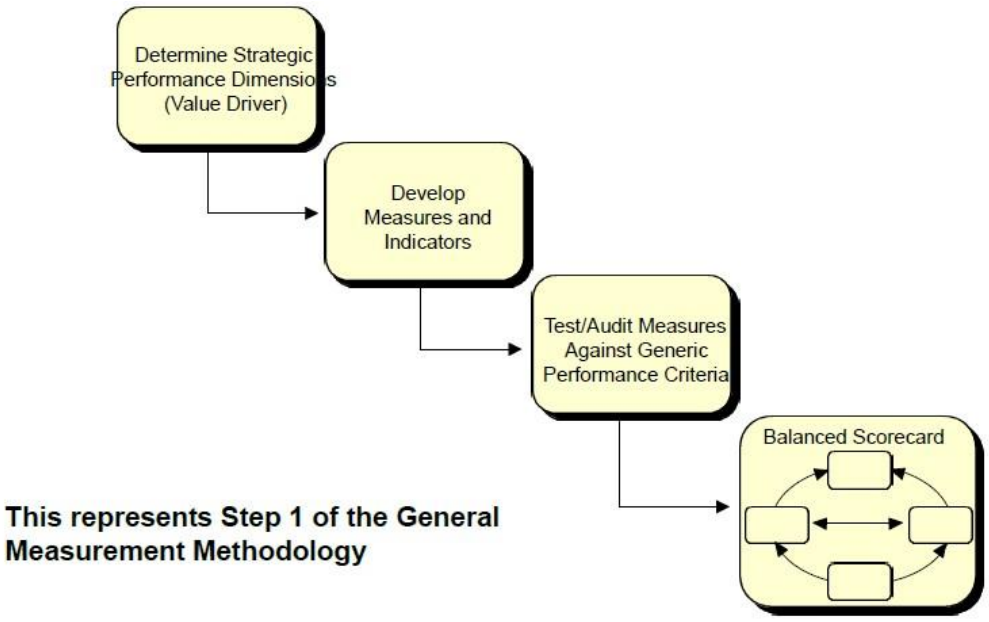
Chart 4.6: The audit process to ensure high quality measures

Chart 4.7: Definitions of generic measurement criteria

4.1 The general measurement methodology outlined in process flow fashion here drives measurement from an improvement focus



4.2 Developing a balanced scorecard requires determining the strategic performance dimensions and the appropriate measures and indicators

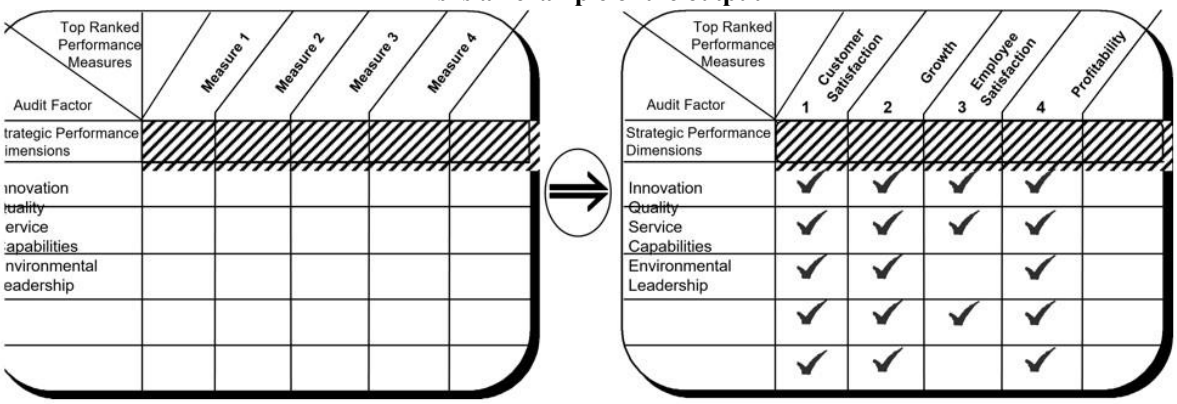


4.3 We will conduct a workshop with the management team to develop first the global measures The type of questions used to generate the list of measures include:
How will we know how well we are doing?
What measures and indicators should we monitor on a periodic basis to determine how well **we are** performing?
What should we measure to help us know if we are improving, or where we need to improve? l The thinking process while developing this set of measures should not be constrained by feasibility issues. The focus should

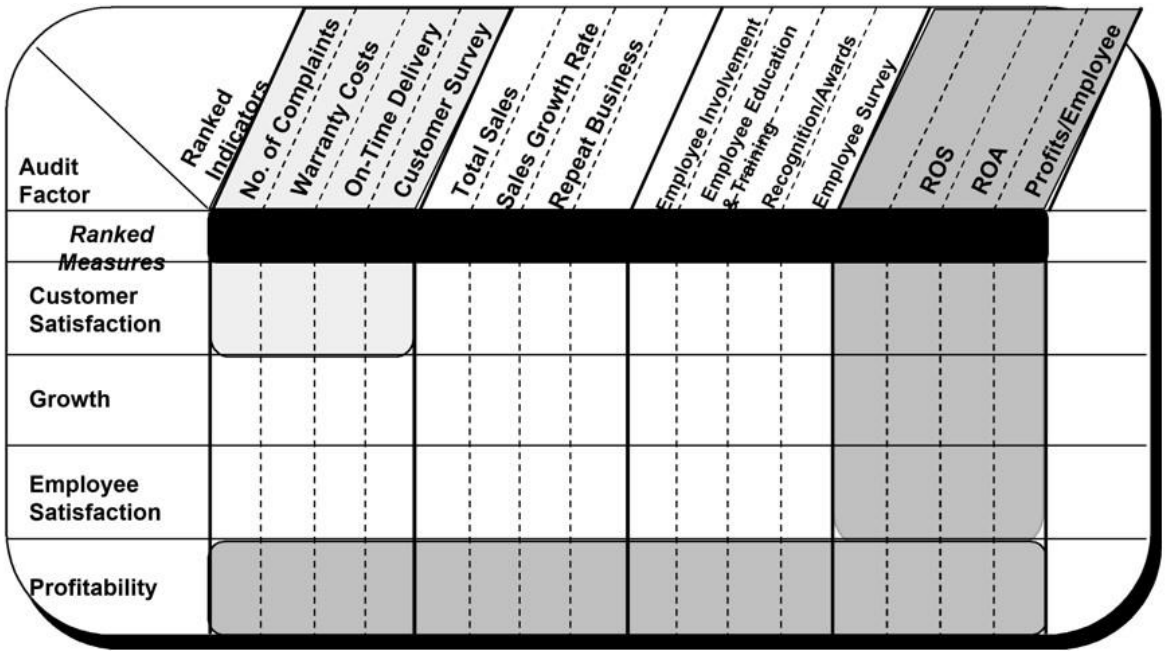
be on providing the executive team the information it needs **The output of this process will be a list of prioritized measures**

4.4 First, generate a list of ranked measures that are linked to the strategic performance dimensions

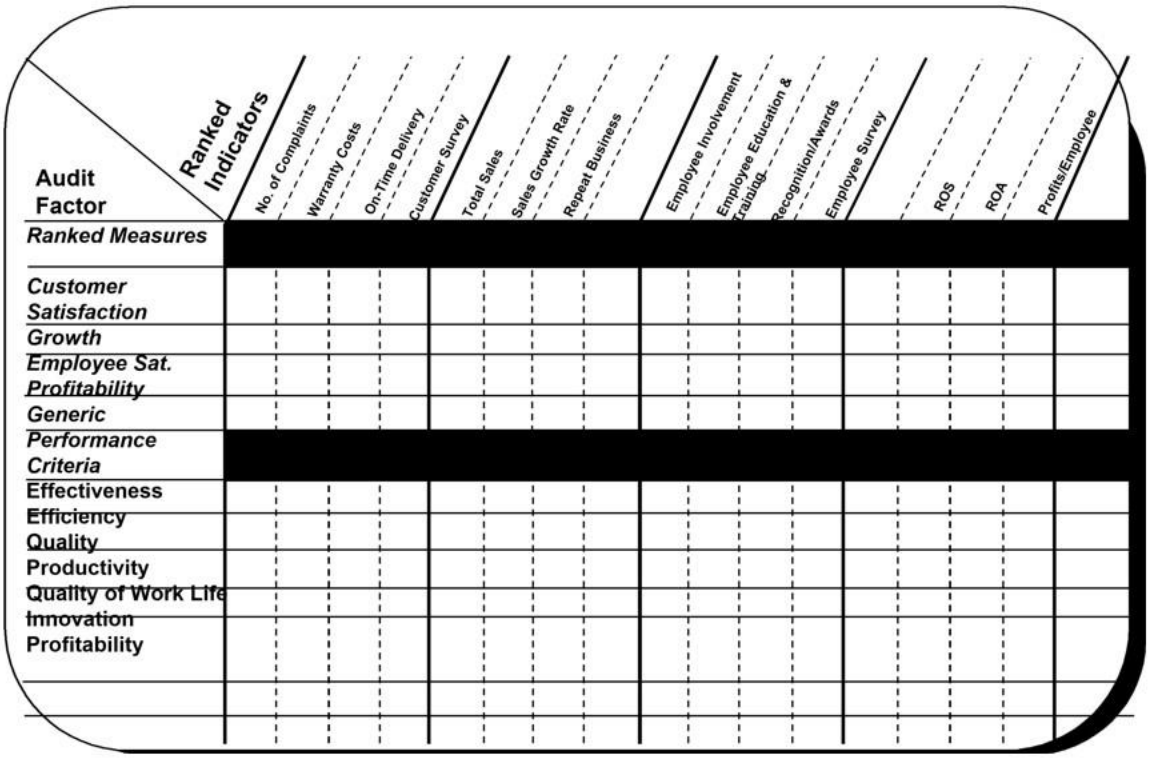
This is an example of the output



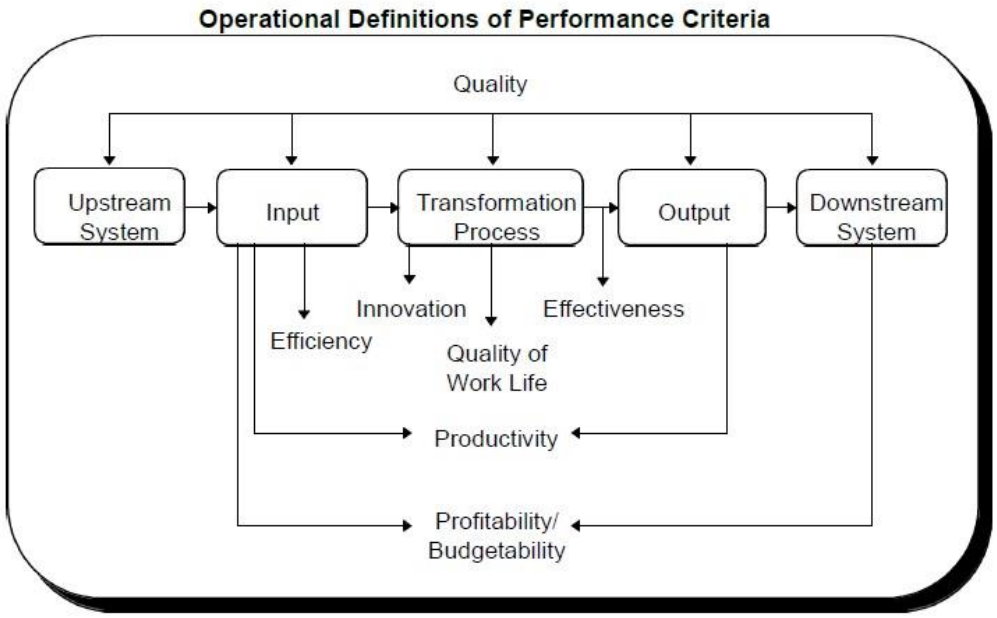
4.5 Then, develop indicators for those measures that cannot be directly operationalized



4.6 Mapping the measures to the generic performance criteria results in the balanced scorecard



4.7 A generic set of performance criteria for organizational systems is suggested here



While all seven criteria are relevant to all organizational systems, their relative importance varies as a functions of the type of system

Performance measurement system:

5.0 Target setting and quantifying performance for incentive programs

Chart 5.1: This chart describes the importance of rewards and incentives to a measurement system

Chart 5.2: Target setting

Chart 5.3: Shows data portrayal

Chart 5.4: Depicts performance diagnosis format

Chart 5.5:

Indices of performance are developed in this chart. We have used the "Weighting Factor" approach. This approach is subjective and requires management concentration. But, then, the basic requirement of a good measurement system is management concentration and input. Besides, any algorithm developed for purposes of rewards and incentives tends to be subjective

5.1 Here are some roles rewards, incentives and recognition play

What gets rewarded gets measured

Rewards and incentives systems help keep the focus on company goals and objectives e.g., Customer satisfaction Improved quality

When consistent with measures, rewards and incentives encourage everyone to excel Individual Work group

Business unit

It is necessary to quantify performance before a rewards and incentives program can be implemented

5.2 In order to drive measurement from an improvement focus it is necessary to identify improvement targets first The process for identifying improvement targets is a subjective one. Our knowledge of the business combined with the risks and uncertainties leads to preference curves of the type shown

Linear S - Shaped

Targets Targets

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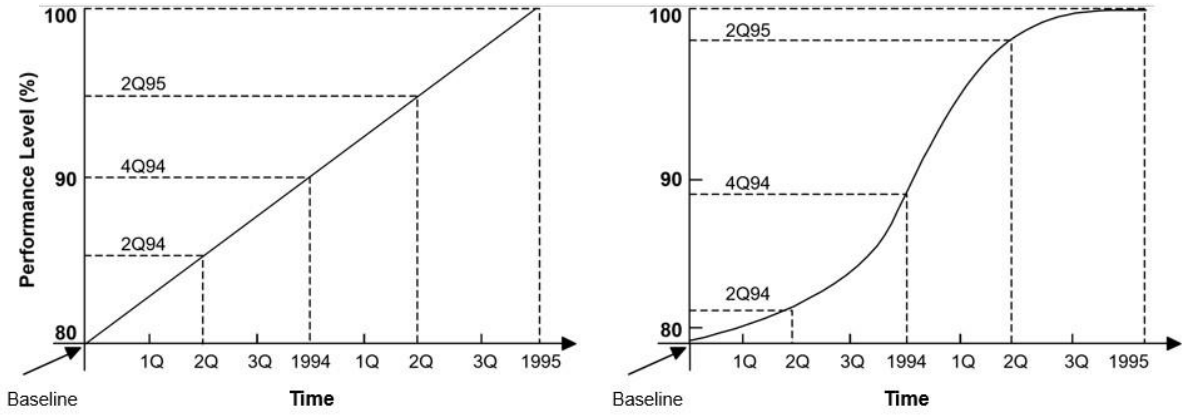
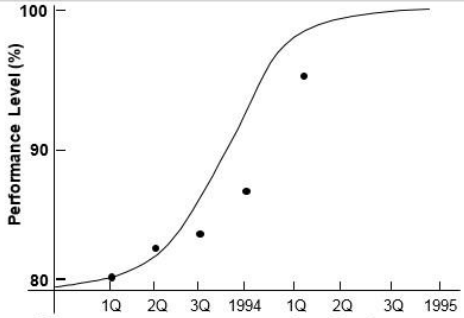
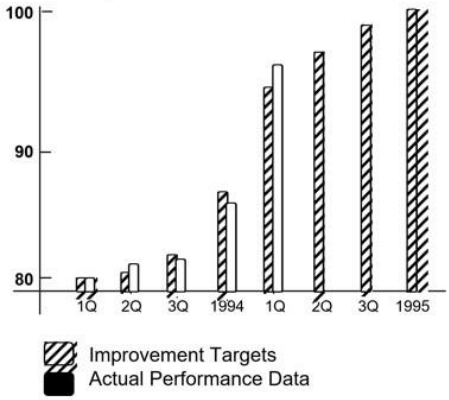


5.3 The performance improvement data may be represented in the form of a curve (I) or in the 'Bar Chart' format (II)

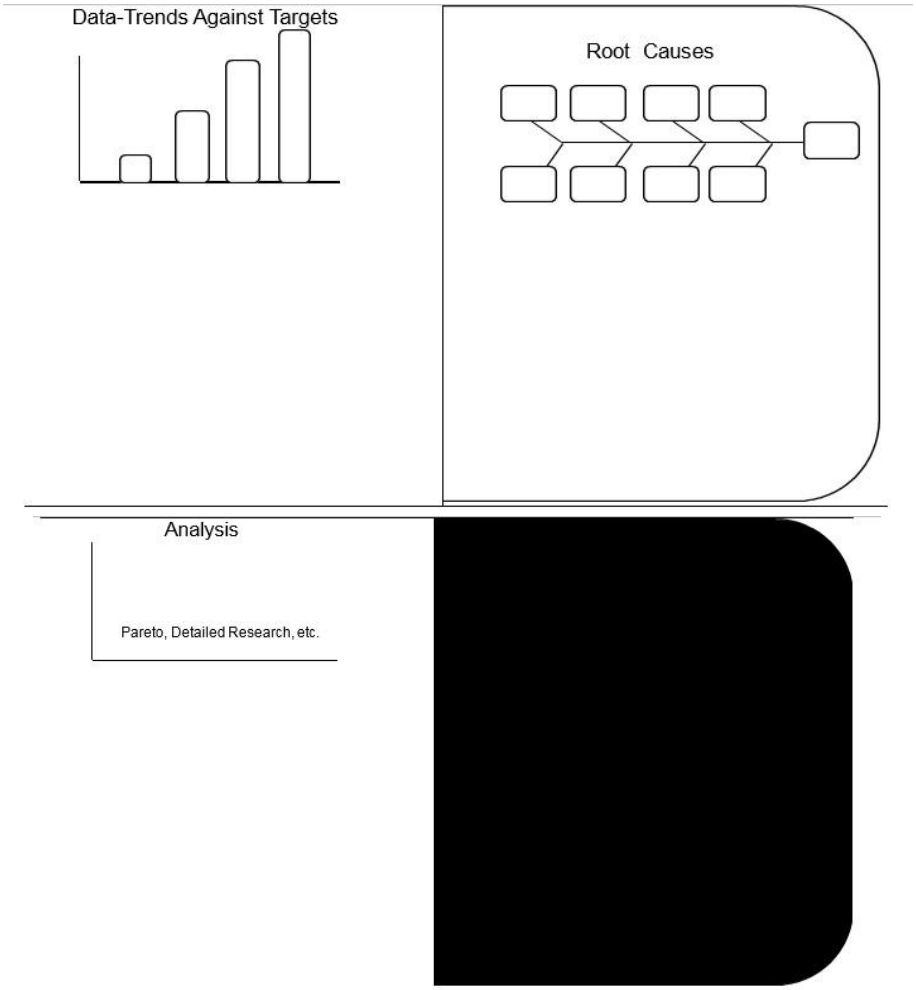




I II

Curve represents the improvement targets and the points the actual performance data

5.4 Each performance measurement chart should be followed by a performance diagnosis and action planning chart. Here is an example...



5.5 It is first necessary to quantify performance

This is an example of how we develop a composite index of performance

Measures	Customer Satisfaction 1	Quality 2	Employee Satisfaction 3	Profitability 4	
Rating	40	30	20	10	
Weighting	0.4	0.3	0.2	0.1	
Performance level	5	8	6	8	S
Weighted score	2.0	2.4	1.2	0.8	6.4

Performance Measurement Systems:

6.0 New performance management system and the performance improvement planning process These charts identify elements of the measurement system not covered by the other sections

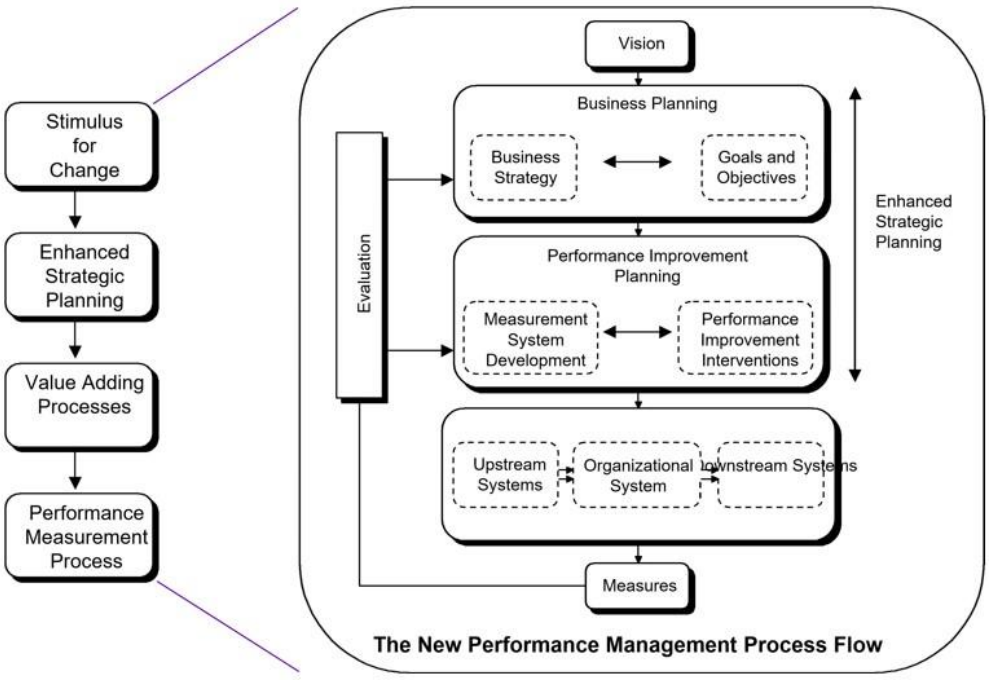
Chart 6.1: Emphasizes that performance improvement planning has got to be a part of strategic planning

Chart 6.2: Outlines performance improvement planning as an eight step process. The number of steps a client deploys depends upon his level of sophistication in planning. Details concerning each step may be obtained from the author

Chart 6.3: A summary chart demonstrating, once again, that a balanced scorecard is a tool to focus the company's value drivers

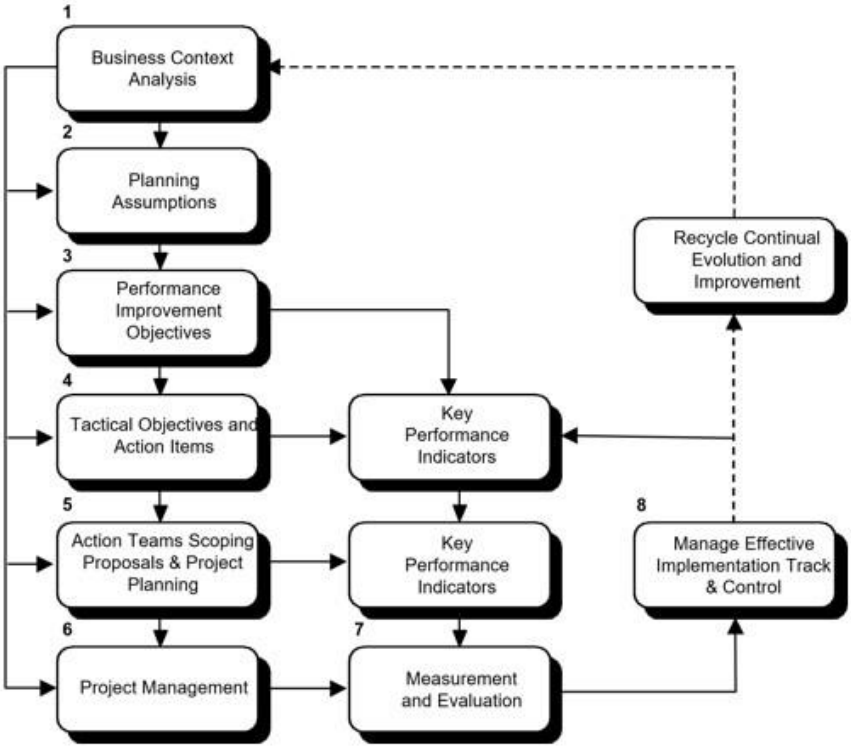
Chart 6.4: Highlights the need for cross-functional process and measurement focus

6.1 To meet the new competitive challenge it is necessary to create a new performance management system



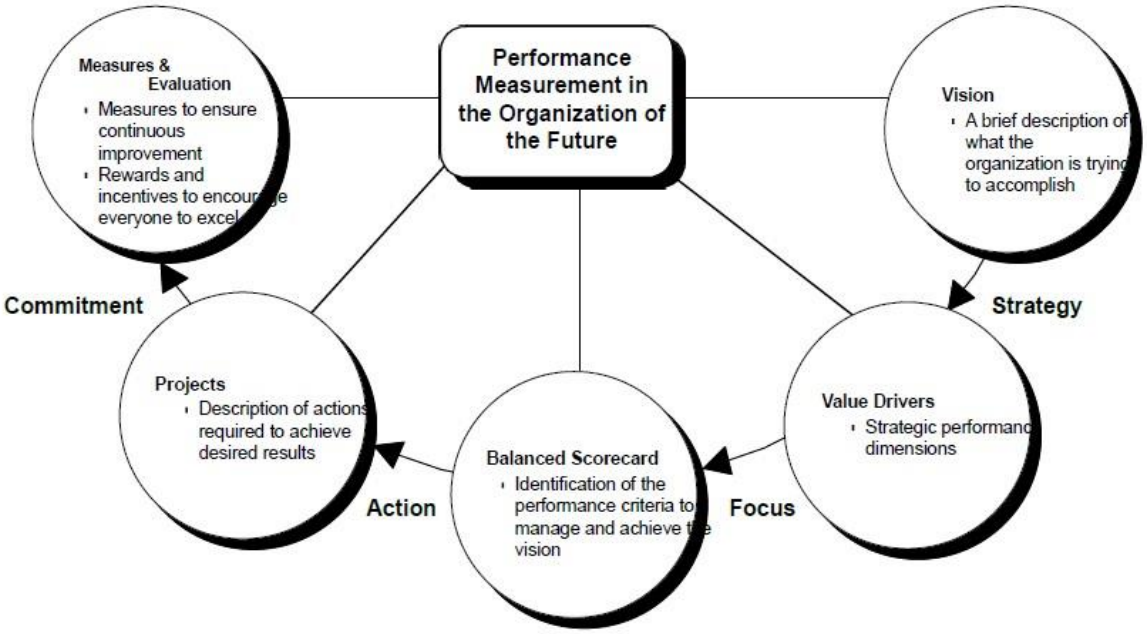
6.2 Performance improvement planning is a step-wise process

The process by which one plans for performance improvement determines the level of quality and acceptance for the plan and actions necessary to implement it A well thought out plan developed by all levels of anagement - is essential to realize the vision



Performance Improvement Planning Process

6.3 An approach to developing and implementing a measurement system is summarized here

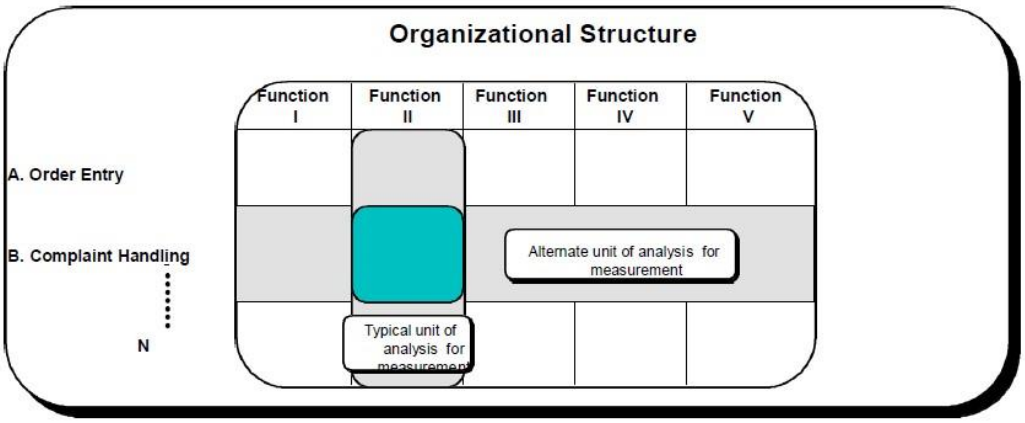


6.4 It is concluded that a good measurement system highlights the need for business redesign or enterprise processes

Processes (generally) are organizational activities that cut across functional lines, e.g., complaint handling

Functions are intact organizational entities, e.g., business units, departments, etc.

It is possible to define the system as the vertical dimension or as the horizontal dimension as shown in the figure



Organizations moving into TQM are increasingly slicing the organization horizontally in terms of processes to examine and improve.

Conclusion:

By means of the six application areas reviewed, it has been shown how the wider perspective of performance management and strategy implementation can be used to analyse the working of practical control systems. In each case, there are suggestions for improving business practices and issues raised for academic research. For example, what is the role of budgeting in the modern organization? How is it now being used in practice, and what changes are being made to traditional practices? New financial performance measures, such as EVA and TQM are being adopted by many organizations. How do they link with currently used measures, and how are they integrated into an overall control system? In what circumstances do they seem to be appropriate and where may they need to be amended? What are the contextual factors that affect an organization's likely interest in such matters? The balanced scorecard is also proving to be a very popular tool, but how are organizations actually using it in practice? Does it deliver the benefits claimed for it, and how might it be most effectively be combined with existing control systems? Performance management therefore provides an important integrating framework,both academically and practically. It goes well beyond the traditional boundaries of management accounting, and will require the skills of management accountants and .management accounting researchers to be developed in at least three areas. First, the 1The pages of Management Accounting Research represent one of the prime sources of this type of work management accountant needs to understand the operational activities of the organization. This was a traditional skill of the old 'cost and works' accountant, but one that has been neglected more recently. Attempting to design control systems without having a detailed knowledge of how the business works is likely to prove a recipe for disaster. Second, there is a need to connect control systems design with issues of strategy, both espoused and emergent. Control systems need to reflect the aims of an organization and the plans that have been developed to achieve those aims. The 'strategic management accounting' movement has recognized this challenge, but has been more concerned to develop new techniques than to design overall control systems. Third, there is a need to focus on the external context within which the organization is set, rather than just being concerned with internal activities. Competitor analysis is clearly important, but even more central is the value that an organization is delivering to its customers. A process orientation that focuses on value chains is required to complement the vertical and hierarchical approach to control that has long dominated the literature. Furthermore, the developments outlined so far cannot be treated as

purely technical matters that can be analysed from an economic perspective alone. The intention in using performance measures is to influence managerial behaviour, so that managers have the knowledge and motivation to act in the organization's best interests. This is an area where there are likely to be very different approaches that are dependent upon national and organizational culture. Interestingly, this is exactly the field to which that early pioneer of budgetary behaviour, Geert Hofstede, devoted much of his later career. The conclusion is straightforward. Although individual techniques of management accounting and control have been studied individually within a restricted context, they need also to be studied as part of a wider organizational control system. The use of management accounting and control systems can be fruitfully analysed from the framework of performance measurement and performance management. This makes it clear that management accounting and other performance measurement practices need to be evaluated not just from an economic perspective, but from a social, behavioural and managerial perspective, within an overall organizational context. It is these social, cross-national and cultural aspects that make the study of control systems such a fascinating topic for academic research and such a challenge to the practitioner. This paper has attempted to provide an outline framework that will help both academics and practitioners to more fully understand the context in which they are working, and to help develop control practices that are well-suited to the contexts in which they are applied.

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