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**Can the Balanced Scorecard supported by
Strategic Objective Costing improve the
Governance of Public Sector bodies such as
Botanic Gardens?**

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PhD (Management) University of Edinburgh 2011

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- a. that the thesis has been composed by me, and
- b. that the work is my own, and
- c. that the work has not been submitted for any other degree or professional qualification.

Alasdair J Macnab

3 March 2011

List of Abbreviations

ABC	Activity Based Costing
ACCA	Association of Chartered Certified Accountants
BEM	Business Excellence Model
BSC	Balanced Scorecard
CA	Chartered Accountant
CIMA	Chartered Institute of Management Accountants
DAFS	Department of Agriculture and Fisheries for Scotland
EFQM	European Foundation for Quality Management
ERNIC	Earnings Related National Insurance Contributions
ESM	Executive Strategy Manager
FTE	Full Time Equivalents
GVA	Gross Value Added
HR	Human Resources
ICAS	Institute of Chartered Accountants of Scotland
ICT	Information and Communications Technology
IFAC	International Federation of Accountants
IT	Information Technology
KPI	Key Performance Indicator
MS	Microsoft
NDPB	Non Departmental Public Body
PA	Personal Assistant
PFMR	Policy and Financial Management Review
PI	Performance Indicator
Q&A	Question & Answer
RBGE	Royal Botanic Garden Edinburgh
RERAD	Rural & Environment Research and Analysis Directorate
SEERAD	Scottish Executive Environment and Rural Affairs Department
SMART	(Re framework): Strategic Measurement and Reporting Technique
SMART	(Re Indicators): Specific Measurable Attainable Relevant Time-bound
SOB	Strategic Objective Budgeting
SOC	Strategic Objective Costing
SORP	Statement of Recommended Practice

SPRIG

Strategic Planning and Resources
Implementation Group

SQL

Standard Query Language

INTRODUCTION AND RESEARCH OBJECTIVES

In this project it is proposed to investigate whether a formally proposed strategy framework, in this case the Balanced Scorecard (as compared to a more standard model of strategic planning) which is linked to a performance management system and an associated costing system, would improve the managerial focus and the performance dimension of the governance processes at public sector bodies such as botanical gardens. The Royal Botanic Garden Edinburgh (RBGE) provides the research site for the in-depth case study to explore this possibility.

Short Overview of The Royal Botanic Garden Edinburgh

The RBGE is a not-for-profit charity, formally titled a Non Departmental Public Body (NDPB). It is sponsored by the Scottish Government's Directorate for Rural & Environment Research and Analysis (RERAD). RERAD's core purpose is to strive for a "Greener Scotland."

The RBGE:

- holds one of the richest living collections of plant species in the world;
- has a herbarium of some 3 million preserved reference specimens from 157 different countries;
- has one of the world's largest research groups of plant taxonomists who study all groups of organisms falling within the scope of botany: fungi, algae and all major groups of land plants;
- has the widest educational programme of any of the world's botanic gardens,
- and receives some 800,000 visits per annum to its four gardens making it one of Scotland's leading visitor attractions.

An independent assessment of the RBGE's economic and social impact was carried out by consultants, DTZ Debenham Tie Leung Ltd during the period August to December 2009. They concluded that the total output impact of RBGE's operations is estimated at £29m per annum, which is associated

with £19.2m of Gross Value Added (GVA), a government growth measure¹. These calculations included an assessment of our visitor impact at £2-3m, our volunteers' contribution at circa £1.7m and our formal education programme at £1.5 - £2.5m. However, they conceded many of our key activities (biodiversity, conservation research, and collections management) can only be assessed qualitatively, meaning that much of the quantitative assessment captured in the GVA figures, can only be seen as the "tip of the iceberg". DTZ concluded that: "It is difficult to separate out impacts of particular activities because they are all inter-related and different parts of the organisation support each other to achieve impact. Its impact in education provision and research, however, is clearly sizeable, although largely has to be stated qualitatively. The impacts have, potentially, quite profound reach in terms of major environmental, political and socioeconomic issues internationally".

According to DTZ, RBGE's contribution to the Scottish economy is significantly more than just its direct expenditure. When including direct, indirect and induced expenditure and income effects, RBGE supports 355 Full Time Equivalent (FTE) employees throughout Scotland, and it is able to contribute substantially more to the Scottish economy and most of the impact is on the local (Edinburgh) economy.

Table 1 below summarises DTZ's assessment of the total operating impact of the RBGE at the national (Scotland) level. The key points were as follows:

- The total output impact of RBGE's operations is estimated at £29m per annum. This represented the share of GDP attributable to RBGE's operations.
- Over 350 FTE jobs are associated with the delivery of this output, between on-site staff, supply chain staff and those in consumer industries.

¹ GVA is the additional value generated by each part of production activity and, here, is equated as output minus intermediate consumption.

- This output level is associated with £19.2 million of Gross Value Added (GVA).

Table 1 Summary Operating Impacts, Scotland Level

	Output £m	Employment FTEs	GVA £m
Direct (on site)	£11.8	232	£7.5
Indirect (suppliers)	£6.2	60	£2.9
Induced (via wage spend)	£5.1	63	£2.8
Total Operating Impact	£29.0	355	£19.2
Implied Multiplier	1.96	1.53	1.75

RBGE is changing in order to maximise its contribution to tackling global environmental challenges. In recent years the focus of much of its research has moved towards the relationships between plants and climate change and towards active leadership and participation in international efforts to protect plant biodiversity. It is likely that an improved strategy management system with a coherent Performance Management System will assist the RBGE with its endeavours. This thesis explores this presumption.



The Case for the Importance of this Research

The world is currently changing more rapidly than at any time in human history through the interconnected challenges of biodiversity loss and climate change. Huge increases in atmospheric carbon dioxide resulted historically from the clearance of forests even before the industrial revolution and our growing dependency on fossil fuels since then has compounded the problem. Today the protection and restoration of forests and naturally occurring vegetation around the world represents one of the simplest, most immediate and most effective deterrents against the worst impacts of future climate change and the preservation of maximum biodiversity. At their heart, the major environmental challenges of our times are biological: photosynthesis created the fossil fuels just as it created and maintains the breathable atmosphere.

“At this most critical moment in human history, botanic gardens have a unique potential to be part of the solution. They contribute directly to the generation of new scientific knowledge enabling us to understand, monitor and predict the changing world around us. They gather and protect the world’s plant resources – on which all other species depend. They build human capacity through formal and informal educational programmes. Most importantly, at this point in time, they are places that can engage with people, informing and influencing them in ways that help to shape society. Unlike most research institutes botanic gardens are open to the public and some of them are significant visitor attractions”.²

As far back as 1999 the following was reported from the International Botanical Congress:

“ST. LOUIS, MO, August 2, 1999 -- A compilation of the latest data on extinction rates of plant and animal life around the world reports that humanity's impact on the earth has increased extinction rates to levels rivaling the five mass extinctions of past geologic history. The President of the International Botanical Congress, Peter Raven, PhD,

² Extract from RBGE Corporate Plan 2010/11-2014/15 p 2.

who is a world leader in plant conservation, released the paper today. It predicts that between one-third and two-thirds of all plant and animal species, mostly in the tropics, will be lost during the second half of the next century. The paper outlines a seven-point plan to slow the extinction rates of plants around the world. It suggests that a major United Nations-sponsored conference on this topic could move these steps into country-by-country actions....All plants are important in one way or another and this comprehensive plan seeks to save them all -- a priceless gift to future generations," said Raven.

Botanic gardens have collectively accumulated centuries of resources and expertise that now means they play a key role in plant conservation. Many of these activities contribute to *ex-situ* conservation but botanic gardens also play an important role in *in-situ* conservation. For these organisations to co-ordinate, focus on and to implement the ambitious plan there needs to be some form of strategic planning which can inform the individual organisations and be capable of providing the necessary framework to co-ordinate the research effort on a global basis by a number of organisations who have similar aims but different governance structures and requirements. The biodiversity crisis is upon us now and there is an appetite to make better use of scarce resources, co-ordinate research activity, and share this increasingly important knowledge.

Botanic gardens are subject to operating in an environment of financial constraint. To fulfil their broader social purpose it is essential that the economic resources available are used as productively as possible. The RBGE did produce corporate plans in the autumn of each year which contained their strategy, but these plans were used for the sole purpose of satisfying a requirement of their sponsor department in Scottish Government so that Grant-In-Aid could be released the following financial year and therefore were largely a cosmetic exercise. The strategy was not revisited during the course of the year, and therefore, was ineffective as a management tool. The financial resources were not linked to strategic objectives and it was, therefore, impossible to know how much the

contributing activities cost, thereby denying the opportunity to allocate these scarce resources effectively according to priorities. Although monthly management accounts were produced for the cost centres based on the administrative structure of the RBGE, performance assessment of the organisation was limited to an annual report presented to Government some four months after the financial year end. To solve these issues it is proposed that sound strategic and performance management information systems have to be developed for the management team of the botanic garden.

Research Focus

The literature on the Balanced Scorecard has grown in recent years and seeks to identify whether the Balanced Scorecard can assist organisations improve their performance particularly when it comes to executing their strategies. Kaplan and Norton (1992, 1996), Niven (2003, 2006), and Marr (2006, 2010) also concluded that the Balanced Scorecard was helpful for staff to engage in the strategy management processes and participate in discussions about what was possible in respect of future activities. The Balanced Scorecard can be an effective strategy and performance communication tool but this would only be possible if management were willing to listen to ideas coming from the “shop floor” - emergent strategy (Mintzberg, 1987). This also presupposes that employees were as keen to succeed as management were and in an enabled learning environment that is perfectly possible (Gratton 2000; Sveiby 2004). Of course, in such an environment some unpleasant truths will emerge from the performance management system but as long as management see that as a positive outcome rather than destructive criticism then the organisation can improve its performance as a consequence.

Since the early part of the 20th century organisations have relied on financial measures to assess their performance; the DuPont Analysis Model was an excellent example of this type of management (Chandler, 1977). As a consequence of the dissatisfaction with measurement systems that relied solely on financial measures, managers began to look for an alternative system to measure and manage their organisation’s performance (Banks and Wheelright, 1979; Kaplan and Norton, 1992; Niven, 2003; Bruns, 1998

(cited in Neely, Kennerley and Adams in Neely, 2007)). In particular, frameworks that incorporated non-financial measures and provided some balance to the more traditional financial measures would be of benefit (Neely, Kennerly et al, 2007). Neely, Kennerley and Adams (in Neely (Ed) 2007) suggest that a framework that is fit to measure performance should provide: a balanced picture of the business (financial and non-financial measures), a succinct overview of the organisation's performance, a set of measures that is multidimensional, a comprehensive performance measures matrix, and measures which should be integrated both across the organisation's functions and through its hierarchy.

The original Kaplan and Norton 1992 model illustrated leading and lagging indicators in four different perspectives: Financial; Customer; Internal Processes; and Learning and Growth. According to Kaplan and Norton (1992, 1996) the real power of a properly developed Balanced Scorecard is that it links the performance measures to the organisation's strategy. Organisations implementing a scorecard process are forced to think clearly about their purpose or mission; their strategy and who the stakeholders in their organisation are and what their requirements might be. Having set the strategy the Balanced Scorecard is then used to manage performance (Niven 2003, 2006).

Research Objectives

The main research objectives are, therefore, to:

1. Find a solution to the RBGE's need for more formal and effective systems of corporate governance and strategy formulation and implementation particularly with regard to the creation of a Management Control System.
2. Investigate the extent to which the Balanced Scorecard can assist the botanic garden in constructing a solution to the above problem.
3. Assess the efficacy of the Balanced Scorecard based solution that is developed.

Research Questions

These research objectives require several research questions to be answered. These relate directly to the application of the Balanced Scorecard:

1. Can a Management Control System be created that will provide an effective system of corporate governance that will also assist strategy formulation?
2. Can the Balanced Scorecard based solution be adapted for public sector and not-for-profit use that will construct the requisite Management Control System?
3. Can the Balanced Scorecard based solution be assessed for its efficacy to meet at least the weak market test?

LITERATURE REVIEW

Introduction

The literature review is structured to firstly examine strategy and strategic planning before investigating the history behind the development of strategy management tools, by looking at early frameworks and their evolution to what is now the most popular framework, Kaplan and Norton's Balanced Scorecard. The review will then discuss the desirable attributes in such frameworks and then consider what modifications can be made to tailor them to meet individual organisational needs, particularly in the public sector. The potential benefits will then be discussed followed by a discourse on some of the pitfalls of the Balanced Scorecard, leading into a discussion on the contribution that the Balanced Scorecard can make to governance processes. Although the Balanced Scorecard aims to balance traditional financial measurement with alternative non-financial measures that drive performance, there is recognition that financial and costing management plays an essential part of governance. The review will look at the common methods of providing financial information to support the strategic management element of governance and discuss their adequacy and posit whether an alternative system might be more helpful. The review will close with a short summary of the experiences of existing users of the Balanced Scorecard.

Strategy and Strategic Planning

Before proceeding to review the literature on the Balanced Scorecard it is worth looking into what strategy and strategic planning can contribute to organisational success. Common to definitions of strategy is the notion that strategy is focused on achieving certain goals; allocating resources; and that strategy implies some consistency, integration, and cohesiveness (Chandler 1962; Andrews 1980; Quinn, Mintzberg et al. 1988; Drucker 1995; Cole 1997; Steiner 1997; Johnson and Scholes 1999; Mintzberg 2000; Niven 2003; Axson 2007). Grant (2008) defines strategy as "a unifying theme that gives coherence and direction to the actions and decisions of an individual or an organization". He argues that there are four common components in a successful strategy: simple, long term goals; a deep understanding of the

external environment; a review of existing resources to determine capability; and execution of the strategy.

Although most organisations have a strategy, it is the last of Grant's components that presented most difficulty to firms (Kaplan and Norton 1992). According to Kaplan and Norton (2008) The Monitor Group global survey carried out in 2006 discovered that between 60 to 80 per cent of companies failed to meet many of the targets set down in their corporate plans. This may have resulted from inadequate strategy formulation. To provide assistance to strategy formulation, Ansoff and Steiner and others argue for a formalised, systematic approach based on analyses of future environmental challenges and for detailed plans to counter/take advantage of such challenges (Ansoff 1965; Ansoff 1979; Hamel and Prahalad 1994; Steiner 1997). Niven (2006) indicates that both for-profit and not-for-profit organisations carry out strategic planning and the main factors that help shape the strategies are the internal and external forces that impact on the organisation's primary operations. Greenley (1989) and Grant (2008) both support the argument for strategic planning to make efficient use of scarce resources and to marshal them for best effect either in a competitive market or to provide the best possible service to the client base (public sector organisations). Of particular relevance to the public sector is Ansoff's (1984) approach which focuses on the environment in which the organisation operates by concentrating on demand for product/services and the current and future technologies that would serve that sector. According to Greenley (1989) this avoided the tendency to concentrate on the past to predict the future but to seek to exploit upcoming opportunities. Moreover, bodies dependent on public funding are expected to carry out analyses to justify future funding requirements and, thus, the notion of planning incorporating at least some analysis is embedded in the public sector culture. A purpose of the planning process could be to ensure that the many stakeholders' requirements are taken into account, or at least considered.

On the other hand Mintzberg (1994) counters these arguments as he does not accept that the future can be predicted, and that hard data derived from analytical techniques can actually produce strategies. He further posits that

strategic planners can make wrong assumptions about what can really be forecast as they assume that the future is a reflection of the past. Mintzberg states that the formal planning process is too bureaucratic which subverts creativity, and is over-reliant on quantitative data (unsupported by narrative analyses). Johnson and Scholes (1999) support this view and suggest that the decisions involved in developing a strategy are likely to be organisational, economic, and social and, therefore, “likely to be complex in nature, made in situations of uncertainty and are liable to demand an integrated approach to managing the organisation”. Consequently, they resonate with the views of Mintzberg (1987) in that organisations must have the ability to let strategy emerge from within the organisation and not just be seen as the purview of top management alone. They maintain that to only rely on formalised planning will encourage decouplement of top management from the body of the organisation that has to execute the strategies with the likely outcome that the realised strategies will be significantly different from the intended strategies and, therefore, the organisations will fail to execute their strategies, as Kaplan and Norton (2008) ascertained from the survey discussed above.

Although Mintzberg criticises “rational, analytical approaches to strategy formulation”, and Ansoff (1979) concedes that strategic planning can lead to an excess of analysis or “paralysis by analysis”, Grant’s (2008) approach is to emphasise such analytical approaches to strategy formulation. This is not because Grant wishes to downplay the emergent nature of strategy but he believes that some analysis is a vital input into strategy formulation because the greater the thought and detail that goes into planning the greater the chance of the plan concluding as expected. Indeed, Grant (2008) suggests that the strategy formulation process, whether it be formalised or not, is necessary to achieve coordination within an organisation. He further posits that the planning process extracts knowledge and experience from across and up and down the organisational structures to ensure some form of consistency as well as achieving buy-in to targets. Therefore, Grant indicates that the planning process does allow for strategies to emerge as a consequence of the planning process rather than stifling it as Mintzberg (1994) suggests.

Providing evidence that strategic planning is very much in use Rigby and Bilodeau (2009) found in a global survey which obtained responses from 1,430 international executives from companies in a broad range of industries that amongst the top three most popular management tools in current use was strategic planning. They found that there were three tools which were rated above average for use and satisfaction: Strategic Planning, Customer Segmentation, and Mission and Vision Statements. These were found to assist management on strategic issues, especially during times of turbulence. They also found that the sixth most popular tool in use was the Balanced Scorecard (which encourages the development of mission and vision statements as a precursor to scorecard design (Kaplan and Norton 1996)).

What Mintzberg, Ansoff, Grant and others are contributing to this discussion is that strategy conception and formulation is a complex activity requiring strong leadership and active engagement from the most senior management in an organisation. The degree of formalised planning and process will depend on the nature of the organisation itself, the constitution of the senior management team, the personal strength of the chief executive, the strategic maturity of the organisation (which may have nothing to do with how long the organisation has been in existence), and whether there has been external or internal shocks to the organisational structure/goals. All of these factors help to explain the relationship between the nature of an organisation and its coordination mechanisms, which in turn can have an influence on its strategy formulation processes. These mechanisms are usually in the form of frameworks and these will be discussed later in this review.

It is worth stating that frameworks have been in use for a long time. In the 1950s and 1960s budgets provided the framework for financial planning and corporate planning provided a framework for capital investments decisions and for the long term development of the organisation (Grant 2008). Interestingly Carr, Kolehmainen and Mitchell (2010) found a variety of approaches were used for strategic investment decision making which supported their strategies and the techniques adopted would vary from one type of organisation to another (refocusers, market creators, restructurers, or value creators). However, public sector bodies are required to follow HM

Treasury guidelines when presenting cases for investment which require economic assessments (forward looking) evaluated using DCF investment appraisal techniques. This means that some form of strategic planning is required if capital funds are to be released to public bodies by the Government, who are the principal stakeholders in these organisations.

What has been established in this short review is that there is a role for strategic planning to allow for the varying stakeholders' requirements to be incorporated when formulating strategies. However, there is a risk that top management will be isolated from their workforce if they adopt a wholly top down formalised planning process that does not engage the staff who will be required to execute the strategies. The strategy formulation process needs to provide the means to coordinate the activities of the whole workforce in a coherent manner and this means that staff engagement will allow for emergent ideas to surface, for staff to buy in to the organisational goals which will increase the likelihood of successful strategy execution. The most likely means for achieving this goal is to use a strategy framework to assist with the process.

Nature of the Balanced Scorecard as Originally Conceived

The Balanced Scorecard was originally conceived as a performance measurement system to aid strategy execution. Sangster and Scataglinibelghitarb (2010) suggest that performance measurement, particularly accounting measurement, can be traced back to the start of civilisation but they claim that accounting measurement was only described in terms of the double entry book-keeping familiar to accountants today by Luca Pacioli in his 615-page mathematical compendium, *Summa de Arithmetica Geometria Proportioni et Proportionalitá*, published in 1494. Since the beginning of the last century, frameworks were used to set out the measures that organisations were using to assess performance (Chandler 1977). For example, Chandler noted that DuPont had used a pyramid of financial ratios linked to return on investment. As this pyramid had a hierarchical structure which disaggregated to a variety of levels, it allowed management to see what “levers” to pull to influence performance (Neely, Kennerly, and Adams, in Neely (Ed) 2007). However, such a pyramid, which focused on financial measures, invoked some criticism for over-

emphasising historical financial measurements and, consequently, encouraging short-termism (Banks and Wheelwright 1979). In the 21st century sole reliance on financial measures of performance is being queried as it is employee knowledge, customer relationships, and innovation that produce most of the value created by organisations. This is particularly true since the demise of much of the UK's manufacturing industries and the fact that now our wealth creating firms are predominantly knowledge-based or service-based.

Performance Measures – Some Basic Issues

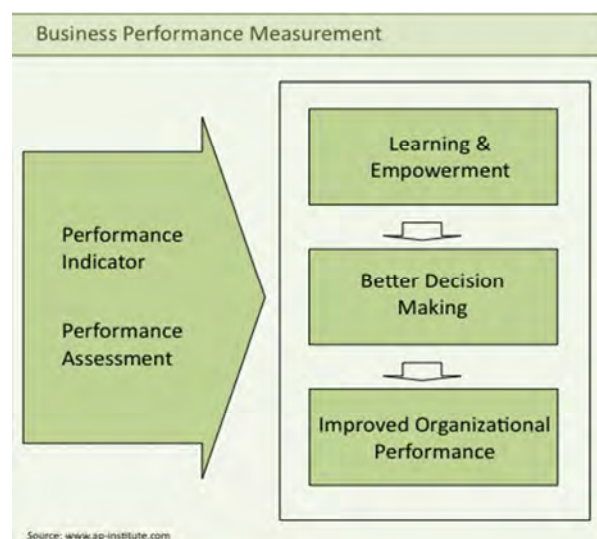
Understanding the nature of measures is inherently important when discussing performance management systems. Traditional financial measures were designed to compare current and previous periods based on internal standards of performance. They do not provide direct or explicit information on such topics as quality, customer satisfaction or staff problems that can all impact on long term profitability. However, accounting measures are relatively easy to collect, quantitative in nature, and demanded by many governance requirements around the globe. Working in mission-based organisations (more usually public sector and charitable organisations) importance is often placed on characteristics such as organisational collaboration. This is something that financial measures cannot capture. Moreover, financial data are usually abstracted at higher levels to such an extent that the workforce is unable to make individual use of that information and it may be of limited value to those for whom it is intended – senior management (Maisel 1992; Kaplan and Norton 1996, 2008; Niven 2003, 2006; Marr 2006). Despite the limitations described above, financial metrics remain an essential part of the performance management systems, particularly in public and not-for-profit sectors where there is a need to balance effectiveness and efficiency with aspirational outcomes/goals. Pursuing goals with no regard to the financial ramifications of decisions will be ultimately damaging if it becomes clear that an organisation is unable to manage its resources properly (Marr 2006).

Stakeholders are looking for the organisation to achieve its mission (which in the public/not-for-profit sector will not be centred on finances/profitability); therefore non-financial measures of performance

become critical. These then become leading indicators of future performance and important components of strategic performance management. On the other hand, organisations do need to accept that there are limitations of measurement and that often proxy measurements are used. However, in the absence of anything better they can empower people to become accountable for strategic performance.

Strategic performance management is about engaging everyone in the strategy and its execution, so that organisational performance becomes everyone's responsibility (Preskill and Torres 1999). Measurement should support this process. For any strategic performance management initiative to become successful, an appropriate environment/culture needs to be developed by moving away from the command and control mentality where measures are used to assess people's past performance and make judgments on whether they have achieved their targets or not. If there is a move to an enabled-learning environment indicators are used to learn, challenge, and improve future performance (Gratton 2000; Sveiby 2004). Therefore, many writers have suggested that there needs to be an approach to measurement which promotes partnership, secures employee alignment, and empowers the employees of the organisation (Lorsch 1986; Simons 1995; Kaplan and Norton 1996; Nørreklit 2000; Umashev and Willett 2008). See Figure 1 below (taken from API Website) which graphically illustrates this point.

Figure 1 Business Performance Measurement



Management guru Charles Handy has observed, “Measuring more is easy, measuring better is hard” and Marshall Meyer adds that “measuring performance is difficult and the choice of performance measures is often arbitrary, since it is difficult to prove that any one measure is better than others” (Meyer 2002). It is hard, if not impossible, to capture the whole story in one measure. Pike and Roos (in Neely (Ed) 2007) when discussing the validity of measurement frameworks, cite Ittner and Larcker (2003) who suggested that there are five mistakes commonly made in business measurement systems when designing non-financial measures:

1. The measures do not relate to the strategy.
2. There are no causal links between the measure and the activity being measured.
3. Incorrect performance standards and targets are set.
4. Incorrect measurement takes place.
5. Too many measures are used, which serves to confuse the picture rather than assisting with strategic management.

These issues are highly relevant to selecting measures when designing the framework of choice. They also suggest that there is no set of generic measures that fits all organisations as they need to connect directly to the organisation’s strategy, which in most cases will be unique.

Marr (2006) prefers to use the word indicator rather than measure. An indicator indicates a level of performance, but it does not claim to be an exact measure of it. If, for example, we introduce a new indicator to assess customer satisfaction levels, this indicator will give us an indication of how customers feel. However, it will never measure customer satisfaction in its totality.

Similarly, Meyer (2002) argues that economic performance, whether it is revenues or efficiencies, and/or effectiveness, cannot be measured as these will occur in the future. Economic performance can only be inferred from the indicators, which may be either financial or non-financial. However, good indicators which have, in the past, successfully predicted the future are likely to remain good for the future and may be used again. Nevertheless,

there will be some uncertainty about their validity going forward and, therefore, intuition and judgment remain key management tools. Another important factor is that as the measure/indicator is used over time and performance stabilises there will be a need to refresh/renew the measure/indicator to keep it functioning as a driver for improved performance (Meyer 2002).

Understanding performance measurement depends on an appreciation of its purpose and this aspect may have multiple characteristics. Neely (1998) provides four key reasons why organisations measure performance. These are to: “check position; communicate position; confirm priorities; and compel progress” (cited in Marr 2006, p 98). Meyer (2002) extends this by identifying seven purposes of performance measures in firms: look-back, look-ahead, compensate, motivate, roll up, cascade down, and compare. Marr (2006) believes that these can be summarised into the following three categories and have been tabulated for ease of understanding in Table 2 below:

Table 2 Categories of Measures

Category	Description
Reporting and compliance	Used to communicate with the organisation’s stakeholders, be it either voluntarily or compulsory for compliance reasons.
Controlling peoples’ behaviour	Used to motivate people and change their behaviour. Measures are used to quantify the value of compensation for compliance with objectively verifiable standards of work.
Strategic decision-making and organisational learning	Used to inform management decisions, to challenge strategic assumptions and to continuously learn and improve.

Source: Marr, B. 2006. *Strategic Performance Management: Leveraging and measuring your intangible value drivers*. First ed. Oxford: Elsevier Ltd. (p99)

It is the last category (strategic decision-making and organisational learning) that is of prime interest to this research study.

The above review demonstrates many of the challenges inherent in performance measurement. Lebas and Euske (in Neely (Ed) 2007) argue that these aspects make performance measurement a complex matter. Indeed, indicators will sometimes contradict each other. However, if the process by which the indicators were selected is well understood then difficulties and contradictions can be managed. They argue that the causal link between the measures/objectives and how the organisation as a whole works should be fully understood in order to comprehend the organisation's interaction with its operating environment. In effect, measurement reflects the business model of the organisation. Once the model is constructed, taking into account all of these factors, performance can then be defined and legitimised. These issues have an impact on the design and construction of a framework aimed at managing an organisation's performance in executing its strategy.

Frameworks

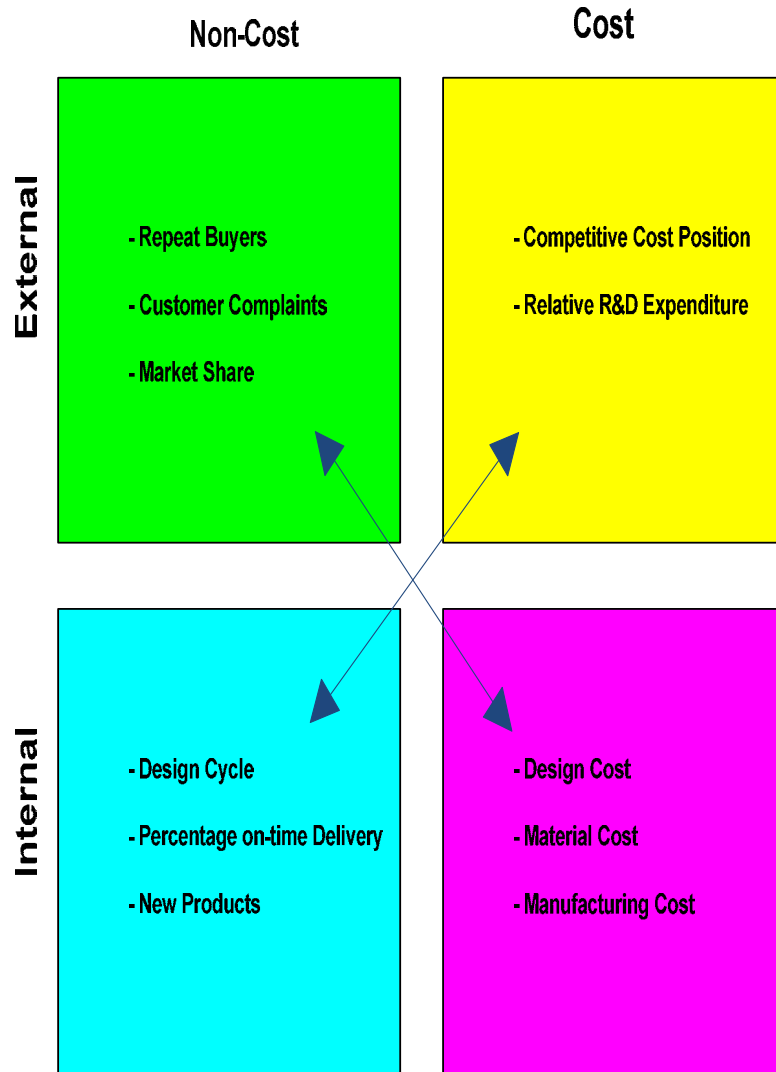
As a consequence of the dissatisfaction with measurement systems that relied solely on financial measures, managers began to look for an alternative system to measure and manage their organisation's performance (Banks and Wheelright 1979; Kaplan and Norton 1992; Niven 2003; Bruns 1998 (cited in Neely, Kennerley and Adams in Neely (Ed) 2007)). In particular, frameworks that incorporated non-financial measures and provided some balance to the more traditional financial measures would be of benefit (Neely, Kennerly et al, in Neely (Ed) 2007). Within the last few decades a series of performance measurement package structures have been proposed. Some of the most prominent of these frameworks are reviewed in this section.

Performance Measurement Matrix

Keegan, Eiler, and Jones (1989) suggested a package which was called the Performance Measurement Matrix (Figure 2). The Performance Measurement Matrix is considered to be flexible, as it is able to integrate different dimensions of performance, and employs generic terms such as

internal, external, cost, and non-cost required for a more balanced measurement system (Neely, Gregory and Platts, 1995).

Figure 2 Performance Measurement Matrix



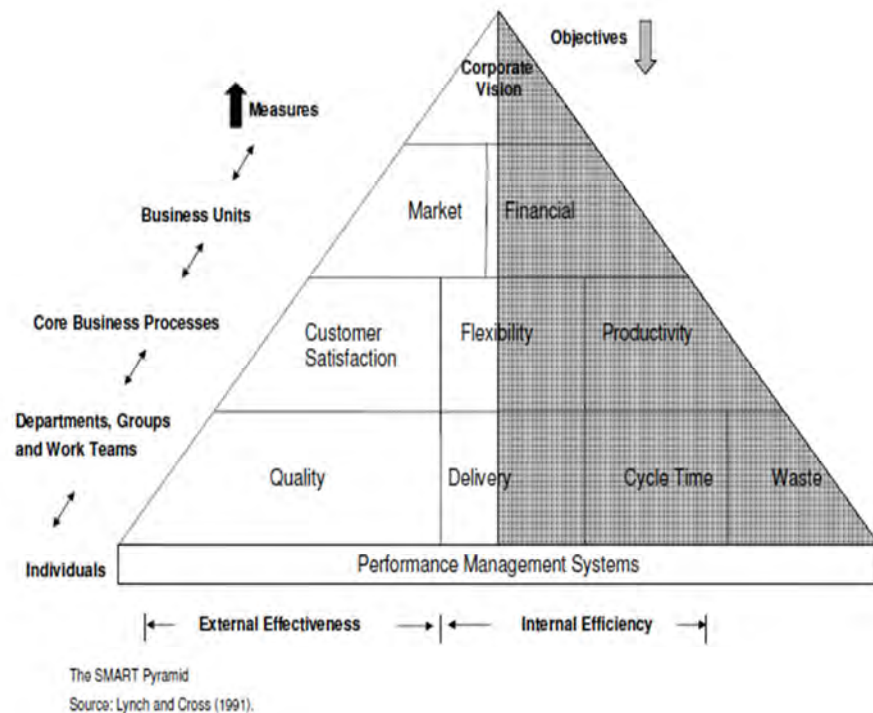
The Performance Measurement Matrix

Source: Keegan, Eiler and Jones (1989). (Neely 2007, p 145)

Strategic Measurement and Reporting Technique

The SMART (Strategic Measurement and Reporting Technique) (Figure 3) was developed about two years later by Wang Labs and it also supported the need to include internally and externally focused performance measures (Lynch and Cross, 1991). Importantly, echoing the DuPont ratio system it introduced the concept of cascading measures down the hierarchy of the organisation to ensure that departmental and individual activity properly supported the corporate goals.

Figure 3 SMART Pyramid



Reproduced from Neely 2007, p146

Results-Determinants Framework

At more or less the same time as Wang were developing their framework Fitzgerald et al (1991) proposed a framework (Figure 4) for the service industries classifying two types of measures: results (competitiveness, financial performance) and determinants (quality, flexibility, resource utilisation, and innovation). A key feature of the results-determinants framework was its inclusion of the notion of cause and effect and, therefore,

initiated the debate about the need to identify performance drivers to achieve the required outcomes. The idea was to prove highly influential to the future development of performance frameworks.

Figure 4 Results-Determinants Framework

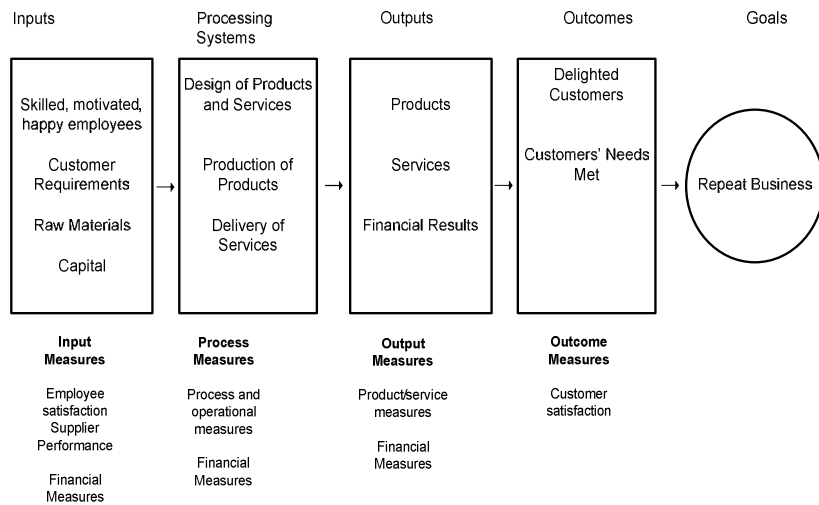
Results	Competitiveness
	Financial Performance
Determinants	Quality
	Flexibility
	Resource Utilization
	Innovation

Source: Fitzgerald et al. (1991) Reproduced from Neely 2007, p147

The Input-Process-Output-Outcomes Framework

Brown (1996) further developed the concept of linking measures through cause and effect relationships and his macro process model (see Figure 5) showed linkages between 5 stages: inputs, processes, outputs, outcomes, and goals.

Figure 5 The Input-Process-Output-Outcomes Framework



The input-process-output-outcome framework

Source: Brown (1996) - Reproduced from Neely 2007, p 147

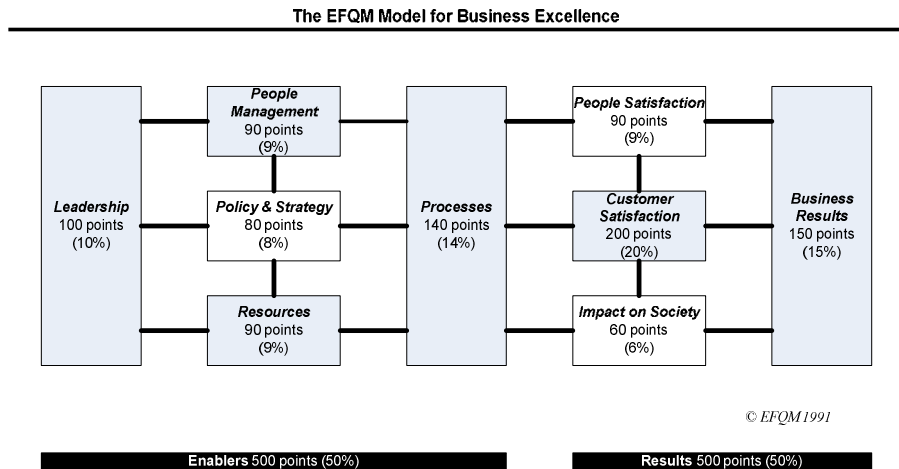
Business Excellence Model

The European Foundation for Quality Management's (EFQM) Business Excellence Model (see Figure 6) recognises there are many approaches to achieving excellence. It assumes that excellence in performance, customers, people and society (results) are achieved through leadership driving policy and strategy that is delivered through people, resources, and processes (enablers). Again, there are assumed cause and effect linkages between the enablers and results. The model can be used to:

1. Develop the vision and goals.
2. Identify and understand the key linkages and cause and effect relationships.
3. Provide a diagnostic tool for self-assessing the current "health" of the organisation.

Through this process an organisation, the EFQM claim, is better able to balance its priorities, and allocate resources. Self-assessment has wide applicability to organisations large and small, in the public as well as the private sectors.

Figure 6 The EFQM Business Excellence Model



Source: *Improving performance using the EFQM Model for Business Excellence*, European Foundation for Quality Management, page 8.

Reproduced from Neely 2007, p 149

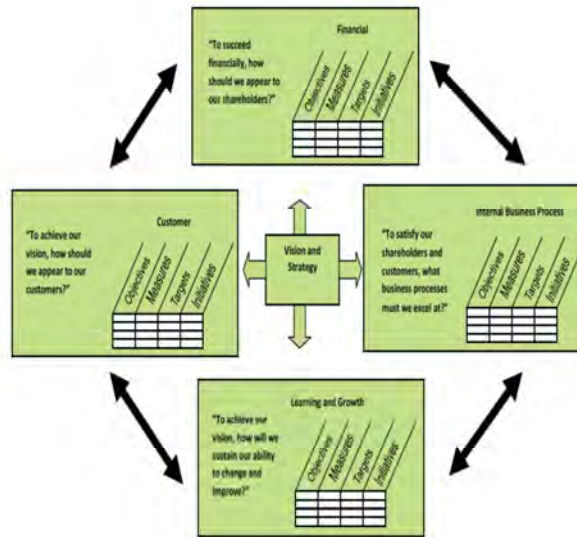
Balanced Scorecard

Kaplan and Norton's (1992) Balanced Scorecard (see Figure 7 below) enables management to consider four aspects (perspectives) of their business:

1. How do stakeholders regard them as an organisation (financial)?
2. How do the customers/clients view the organisation (customer)?
3. How should the organisation view its own competencies (internal process)?
4. How will the organisation continue adapting to meet customer requirements (innovation and learning)?

When it was first introduced the Balanced Scorecard perspectives were presented in the four-box model shown below (see Figure 7). Initially, Balanced Scorecards were used as performance management systems and many organisations produced management dashboards to provide a more comprehensive understanding of the Key Performance Indicators (KPIs) in these four perspectives. This model will be examined in detail in later sections of the review, as it was selected for investigation in the research phase.

Figure7:BalancedScorecard

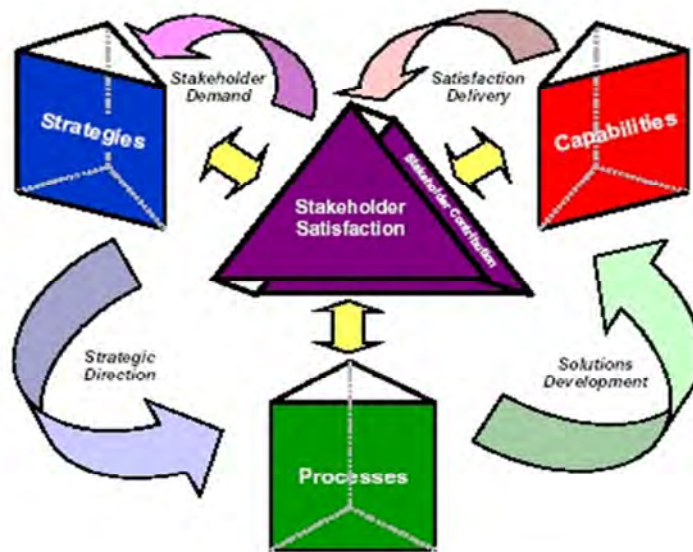


Source: Robert S. Kaplan and David P Norton, Translating Strategy into Action The Balanced Scorecard, Harvard Business School Press: 1996, page 9.

Performance Prism

The Performance Prism (see Figure 8 below), with its internal and external stakeholder focus, encourages managements to consider the stakeholder requirements in relation to their own strategies and competencies. The Performance Prism was developed to overcome the perceived weakness of the Balanced Scorecard which, on the face of it, did not concern itself with external stakeholders. The Performance Prism was designed to encourage management teams to ascertain what the organisation required from its stakeholders and what they in turn required of the organisation. The concept behind the framework was that long term success was built on a better understanding of the key stakeholders and making suitable responses to these needs.

Figure 8 Performance Prism



Source:(Neely, Adams et al. 2002, p 181)

Summary of Strengths and Weaknesses of the Frameworks

Several performance measurement frameworks had been proposed over the past two decades and they are somewhat inconsistent in their approaches, which can cause confusion to management teams attempting to select a suitable framework that will meet their particular needs.

The performance matrix is a straightforward framework but it does not cover all the current measures required by businesses/organisations (Neely et al 1995). The Results-Determinants, and the SMART frameworks had much to commend them as they both recognised internal and external stakeholders, and the latter (SMART) built upon the DuPont notion of cascading objectives and measures but neither of these were taken up by organisations and there is, therefore, little evidence to support whether they would be successful models (Neely et al 2002). In the Input-Process-Output-Outcomes Framework, Brown (1996) assumed that there was a linear relationship between the inputs, processes, outputs, and outcomes with the preceding factor determining the next which may be over-simplifying the

relationship but it was a useful model for the public sector at the time of the proposal.

The Balanced Scorecard has been criticised for ignoring its end-users, suppliers, external communities, and regulators (Bourne and Bourne 2007). However, it does better with its stakeholders than measures such as economic profit, or shareholder value (which are entirely internally focused) (Neely et al 2002). Arguably, the Business Excellence Model takes a wider view of the organisations' stakeholders but some of its perspectives are simply immeasurable in any verifiable way (Neely et al 2002). The Performance Prism seeks to overcome some of the criticisms levelled against the preceding frameworks by taking the superior elements and integrating them into one comprehensive and coherent framework (Neely et al 2002). It emphasises the needs of all the relevant stakeholders but fails to specify the importance of the employee, which is surprising given how much most organisations vaunt the importance of their staff. Moreover, the labelling of the Performance Prism's facets and their interconnecting complexities are probably causes for its lack of universal appeal.

Neely, Kennerley and Adams (in Neely (Ed) 2007) suggest that a framework that is fit to measure performance should provide: a balanced picture of the business (financial and non-financial measures), a succinct overview of the organisation's performance, a set of measures that is multidimensional, a comprehensive performance measures matrix, and measures which should be integrated both across the organisation's functions and through its hierarchy. On balance, the Balanced Scorecard presents a popular, well tried and tested model for adoption and it will be the subject of intense investigation for its suitability at the RBGE.

The Balanced Scorecard – Adoption

The relatively short journey by framework developers/researchers has been described which moved performance frameworks from being primarily financially oriented ones to ones which recognised the utility of non-financial indicators, and finally, to those demonstrating cause and effect linkages between the measures. However, the most popular framework in

use today is the Balanced Scorecard developed by Kaplan and Norton (1992, 1996). According to Marr (2010) about half of the major companies in the US, Europe and Asia are using the Balanced Scorecard approach. The official figures vary slightly but the Gartner Group suggests that over 50% of large US firms had adopted the Balanced Scorecard by the end of 2000. The Advanced Performance Institute also quotes a study by Bain & Co which found that about 44% of organisations in North America and 26% of firms in Germany, Switzerland, and Austria use Balanced Scorecards and the numbers continue to grow. This was confirmed by the International Study, and the North American studies which provided foundations for comparative analysis in the global arena as well as trend analysis for North America. The North American Study conducted by Lawson, Hatch et al (2008) received 382 usable responses from 44 countries and of these, 193 respondents (50%) indicated that they use some kind of scorecard system. The International On-Line Scorecard Study received 150 usable responses. The same percentage (50%) indicated that they used a scorecard system. De Geuser et al (2009) refers to another study carried out by Bain & Company which reported that by 2005 some 57% of executives used the Balanced Scorecard (Rigby 2005) and by 2007 that percentage had increased to 66% (Rigby 2007), implying an increasing satisfaction with the effectiveness of the Balanced Scorecard. The percentage rates are not identical but fall within a similar range to provide credence to the fact that many top companies have adopted the Balanced Scorecard and more intended to do so. This level of participation amongst credible organisations suggests that the Balanced Scorecard is deemed to possess valuable attributes.

Purpose

Simons (2000) argues that the Balanced Scorecard is designed to communicate strategy by explicating the various linked objectives that need to be achieved. He suggests that the organisation's mission and strategy is translated into goals and measures and organised into four perspectives (ways at looking at performance): financial, customer, internal business processes, and innovation and learning (see Figure 7 above). The Financial Perspective covers the financial objectives of an organisation and enables managers to track financial success and shareholder value. The Customer

Perspective covers the customer objectives such as customer satisfaction, market share goals as well as product and service attributes. The Internal Process Perspective covers internal operational goals and outlines the key processes necessary to deliver the customer objectives, and the Learning and Growth Perspective covers the intangible drivers of future success such as human capital, organisational capital and information capital including skills, training, organisational culture, leadership, systems and databases.

Simons (2000) further argues that the Balanced Scorecard is a complement and not a substitute for the organisation's other management control systems. He states that the measures should be selected on the basis of being able to direct management's attention to strategically important issues rather than day-to-day operational matters for which there will be a myriad of measures but should not distract the top management from their focus on directing strategy.

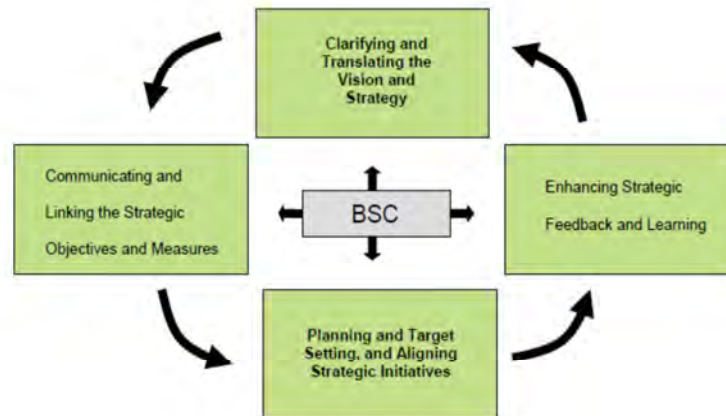
Nature

Kaplan and Norton (1992, 1996) argued that financial performance and the drivers of it (customer, internal business process) and future performance drivers (innovation and learning) should have equal weighting (but other writers who will be discussed later disagree with this concept). They also argued that the real power of the Balanced Scorecard would only come when the measures supporting the objectives contained within the perspectives were directly linked to strategy (see Figure 9 below).

Cause and Effect Linkages

The Balanced Scorecard highlights that delivering good performance in the financial perspective is achieved by ensuring delivery of the objectives in the other perspectives but, principally, giving the customers/clients what they want. Consequently, it is necessary to ensure that the internal business processes are set up to deliver the goods or services demanded by customers and the learning and growth perspective provides the necessary research and understanding of what competencies are required to set up the right processes – human, structural, and infrastructural.

Figure 9 The Balanced Scorecard Strategic Framework



The Balanced Scorecard as a Strategic Framework for Action

(Source: Kaplan & Norton, 1996, p. 289)

Niven (2003), and Kaplan and Norton (1996) concluded that what was needed, therefore, was a system that: provided real insight into an organisation's operations, balanced the historical accuracy of financial numbers with the drivers of future performance, and assisted with implementing strategy; this means that there needs to be a relevant costing system associated with the strategy execution and this will be discussed in a later section. These requirements reflected the views on performance measurement articulated by the writers discussed above. Niven (2006) and Marr (2006) suggested that the Balanced Scorecard was able to meet these challenges by using measurement as a new language to describe the key elements in the achievement of strategy.

According to research by Kaplan and Norton (1992) more than 70% of organisations developed strategies or corporate plans but found that approximately only about 10% surveyed were able to successfully execute their strategies. Niven (2005) cites Kaplan and Norton (2001) who attributed these failures to four barriers to strategy execution:

1. Vision barrier - where only a very small minority of the workforce understand what the organisation is trying to achieve;

2. People barrier - only about 25% of managers are motivated to succeed;
3. Management barrier - where most management teams spend very little time discussing strategy progress;
4. Resource barrier - where most organisations do not link the budgets to their strategy.

Therefore, a satisfactory framework would need to take these factors into account to avoid the pitfalls of strategy execution experienced by organisations.

Desired Attributes of Scorecard Systems

The two on-line surveys conducted by Lawson, Hatch et al (2008) mentioned above provided an insight into what users saw as useful attributes of a scorecard system. Both studies revealed practical insights about the adoption and the use of scorecards at the various phases of their implementation. What arose from these studies is that some of the attributes of scorecard systems appear more important to adopters of scorecard systems than those who did not adopt such a system. The most significant attributes included:

- Many types of measures (leading, lagging, financial, non-financial, mixed).
- KPIs/measures that roll up to aggregate measures.
- A cause and effect map (link strategic objectives to action).
- Ability to collaborate on results (discussion, messaging, e-mailing).

According to Lawson, Hatch et al (2008) many of the adopters of the scorecard system have not yet attained all the functionality that they think the systems should have. The implication is that additional benefits from scorecard systems will be achieved if the systems are enhanced to possess those missing attributes. Most notably, they suggest, the following attributes are desired by many organisations but which are currently missing from their existing systems:

- Ability to calculate relationships between measures (e.g. correlation analysis).
- Ability to link the reward system to the targets and results.

- Ability to collaborate on results (discussion, messaging, e-mailing).
- Ability to communicate vision and strategy to employees.
- Cause and effect map (link strategic objectives to action).
- Ability to graph/measure data over time (see trends).
- KPIs/measures that roll up to aggregate measures.

These omissions also gave rise to some of the criticisms (discussed later) by some writers about the Balanced Scorecard as a system for managing organisational performance. Some progress has been achieved on these issues by current performance management systems geared to the Balanced Scorecard but some matters remain unresolved for the time being. Marr (2006) suggests that there are ten principles of good performance management: a clearly understood strategy, relevant PIs, performance analyses carried out, an enabled learning culture developed, organisational alignment, staff buy-in, up-to-date systems, good and timely reporting, software that meets the organisation's needs, and staff capacity to make it work. All of these observations are in line with other writers but what is not articulated well in the literature is quite how to achieve these sensible goals. This is an area that needs to be looked at in the research phase.

Developments/Modifications

Simons (2000) posed the question of whether the generic Kaplan and Norton (1992, 1996) version of the Balanced Scorecard and its four perspectives (financial, customer, process and innovation and learning) should be considered the final word in Balanced Scorecard design. He concluded as did Kaplan and Norton (1996), and Niven (2003) that the original design should be seen as a starting place and thinking should not be limited to that version alone. Niven (2003) developed this line of thought with his public sector modification placing the customer perspective at the top linked directly to the organisation's mission. Public sector adaptation will be discussed later in this review but interestingly the workshops conducted by Kaplan and Norton to this day still refer to the original design and perspectives. There is some evidence of adaptation of the Balanced Scorecard in the public sector but mainly confined to ideas put forward by Niven (2003). Simons (2000) suggested that most organisations rarely use

less than four perspectives but some use one or more additional perspectives to include important stakeholders and suppliers. The key message Simons attempts to impart is that the number and descriptions of the perspectives should meet the needs of the organisation's own particular strategy requirements and not attempt to fit into some prescribed [*by others*] version. Again, this supports the notion that the Balanced Scorecard should be adapted to be fit for purpose.

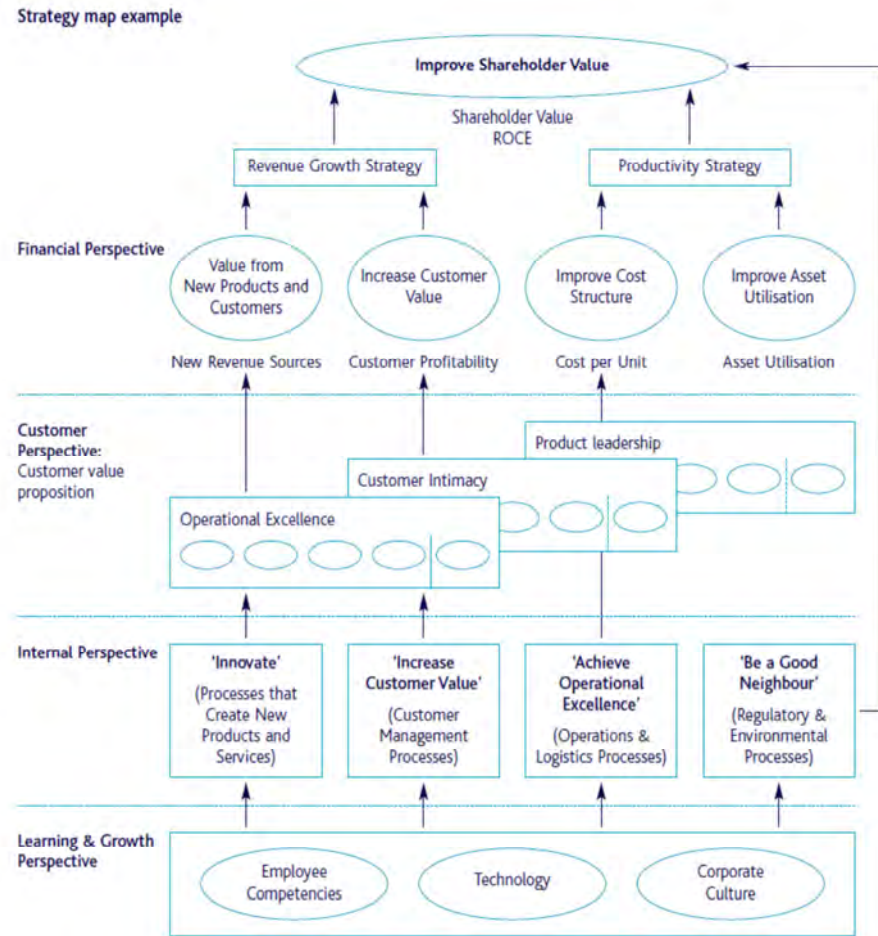
Strategy Maps

Strategy maps are documents that present graphically the principal objectives contained in an organisation's perspectives developed in their Balanced Scorecard. Strategy maps, therefore, outline what organisations want to accomplish (financial and customer objectives) and how they plan to accomplish them (internal process, and learning and growth objectives) and assume the cause and effect logic described above (Kaplan and Norton (2004); Niven (2005); and Armitage and Scholey (2006)).

The strategy map shows how one objective drives another and is the hypothesis of how the strategy will be achieved in an integrated and cohesive manner. A strategy map is devised with a set of related objectives which underpin the objectives set higher up the map. Marr (2010) states that a strategy map highlights that delivering the right performance in the one perspective (e.g. financial success) can only be achieved by delivering the objectives in the other perspectives (e.g. delivering what customers want). To succeed every organisation must meet customer requirements and financial obligations and these requirements need to be met with the appropriate processes and staff skills (Tucker, Meyer et al. 1996; Norton 2000; Niven 2003; Kaplan and Norton 2004; Niven 2006; Norton 2006; Bourne and Bourne 2007). The strategy map then becomes a very powerful tool to articulate the cause and effect chain and to show how the objectives link together. Many employees do not have a sense of accounting practices and what it is accounting information can tell them (Niven 2003; Kaplan and Norton 2004) so the strategy map shows the employees where their activities contribute to the corporate goals at high level or in more detail in cascaded

strategy maps, where more operational detail will be found (see Figure 10 below).

Figure 10 Example of a Strategy Map



source: Adapted from Kaplan and Norton, (2000)

Public Sector Compared to the Private Sector

The Balanced Scorecard was originally conceived for the for-profit organisation and as private sector firms began to use and demonstrate the utility of the Balanced Scorecard, some public and not-for-profit agencies began to see its potential and adopted the scorecard (Niven 2003). The public and not-for-profit sectors need to demonstrate whether they are

making their stakeholders better off as a result of their efforts and, therefore, they need to measure inputs, outputs, and most importantly, outcomes. According to Marr (2006, 2009), Niven (2003, 2006), and Kaplan and Norton (2008) the Balanced Scorecard has risen to the performance measurement challenge of the private sector and has been shown to be equally well-equipped to assist 21st century not-for-profit and public sector organisations.

Purpose

In the for-profit Balanced Scorecard model, the point of organisational activities is to improve profitability and the measures on the scorecard should reflect that reality (Kaplan and Norton 1996). However, not-for-profit and public sector work is usually to provide some common good for a sector(s) of the community they set out to serve. It is only through measurement or assessment that they can determine whether they are making a difference as well as ensuring appropriate accountability for resources given to them (Niven 2003, Marr 2009). “Monitoring performance, and learning from results in the customer, internal process, employee learning and growth, and financial perspectives will provide the short to medium-term information required to get ever closer to achievement of the mission” (Kaplan 2002). Marr (2010) found that organisations who adopted these principles were able to obtain consensus about the strategic aims, and select useful PIs to extract relevant insights into performance. These organisations could then create a positive culture of learning to obtain employee buy-in which would allow organisational alignment. The learning environment enables strategic objectives and performance indicators to be updated or amended to remain relevant as well as enabling reporting and communicating performance information to staff members. Of course, these attributes are equally applicable to the private sector.

Many public sector organisations employ knowledge workers who bring their own idiosyncrasies to the organisation and therefore complicate matters further. Austin and Larkey (in Neely (Ed) 2007) suggest conventional performance measurement frameworks have little to say about managing knowledge workers and can often have dysfunctional effects in contexts in which knowledge workers hold important. This is because there needs to be

an understanding of the use to which performance measurement is put in an organisational setting. The intended uses can usefully be divided into two categories: firstly, motivational measurement which is intended to affect the people who are being measured. It is an attempt to control individual activity that, it is assumed, will not be congruent with organisational objectives in the absence of the measurement (McGregor's (1960) Theory X); this is the use of measurement that is implicit in most conventional measurement frameworks. Secondly, informational measurement is valued primarily for the logistical, status and research information it conveys, which provides insights, supports organisational learning and allows better short term management and long term improvement of organisational processes (McGregor's (1960) Theory Y). This use of measurement has little to do with control and much to do with learning. Motivational use of measures is unlikely to be helpful for a variety of reasons. Incompleteness in measures will probably result in a distortion of effort that is not constructive. However, informational uses of measurement are likely to be very helpful as knowledge workers have an appetite for measurement information that can help them do their jobs or improve their performance. These descriptions of uses of measurement reflect Marr's categories shown in Table 2 above. The idiosyncratic resourcefulness that knowledge work requires can be greatly enhanced by effective use of informational measurement. The presence of knowledge working necessitates a shift away from traditional feedback-based control to measurement-facilitated discovery. Managers need to convince workers to participate willingly in the measurement of information that could potentially be used against them (Austin and Larkey, 2007).

Adaptation

With some adaptation the Balanced Scorecard can prove to be an equally effective tool in the not-for-profit/public sector as it is claimed to be in the private sector (Kaplan, 1996; Niven, 2003; Marr, 2009). For such adaptation to occur, the management of the public sector organisations need to fully understand what it is they are trying to achieve and for whom; in other words, they must be fully conversant with their expected outcomes and the resources required to enable such outcomes. This is usually more complex than it sounds (due to the multi-stakeholder demands on these bodies) and

the Balanced Scorecard can provide the means to help identify the customers and their expectations if the correct perspectives are properly identified at the start of the strategy formulation process. Public sector Balanced Scorecards are differentiated by placing mission at the top of the framework. Connecting directly to the mission is the customer perspective (Niven 2003) – see Figure 11 below:

Figure 11 Public Sector Balanced Scorecard



Reproduced from Niven 2003, p32

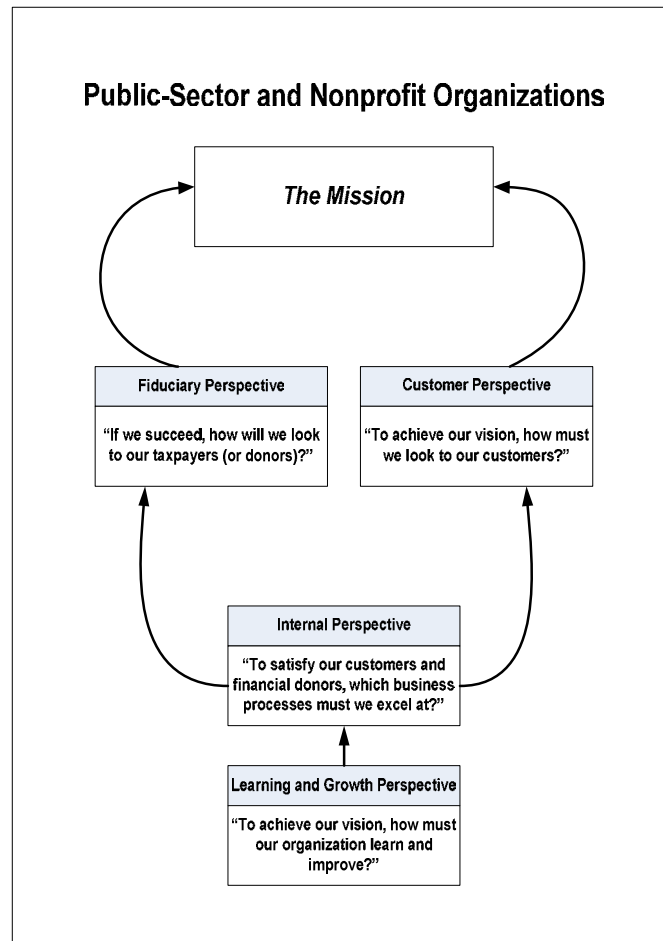
What has been said by many of the contributors to the Balanced Scorecard debate is that the scorecard must fit the needs of the organisation (Kaplan and Norton 1996; Kaplan 2002; Ittner and Larcker 2003; Niven 2003, 2006; Bourne and Bourne 2007). Research has indicated that a majority of public sector organisations (USA) use the same perspectives as Kaplan and Norton developed in their original scorecard, albeit with slightly amended perspective descriptions; financial, customer, internal processes, and employee learning and growth but may configure it in a similar fashion to that described above by Niven (2003). However, adaptability is possibly the Balanced Scorecard’s strongest attribute, the point being that one can choose perspectives that are right for the individual organisation and as many are needed to fulfil the needs of the particular organisation. Niven (2003) found that many not-for-profit and government agencies will choose to place their

mission perspective at the top of their scorecard. Others may split the customer perspective in two, including both customers and other stakeholders. Niven (2003) and Marr (2009) also suggest that perspective names can be changed to reflect the work done in the public and not-for-profit sectors. It should not be forgotten that the overarching purpose of the scorecard is to assist the organisation with executing its strategy (Grant 2008, Niven 2005). Therefore, those charged with that responsibility must understand what it is they are attempting to achieve and be unafraid to make the requisite adaptations necessary to ensure success in achieving the mission. The case is made for adopting the Balanced Scorecard in the public sector if there is sufficient adaptation of the perspectives in the Balanced Scorecard that properly reflect the organisation's unique strategy to maximise the benefits of assessment of progress to achieving the strategy.

Strategy maps are equally applicable to public sector and not-for-profit organisations and the perspectives in the strategy map must equate to those developed in the Balanced Scorecard to ensure that the appropriate cause and effect links are developed; of course, the map must link up to the overarching mission (see Figure 12 below). These strategy maps should be cascaded down to the operational levels so that the employees whose job it is to execute the strategies through operational activities can see how their work directly links to the overall organisational goals. Difficulties can arise if the structure of an organisation is not set up to follow the strategies put in place (Hax and Majluf, 1983). This can often be the case in the public/not-for-profit sectors where structures are set up for administrative reasons (such as managing complementary skill sets within one division) but often staff from these divisions carry out functions in cross-cutting ways to achieve the strategic goals. The cascaded strategy maps can assist with this issue if objectives are to be achieved by staff from more than one division and these objectives are shown in each of the cascaded divisional strategy maps so that staff can report on progress. This means that there must be a linkage from the cascaded maps to the corporate map and the information abstracted at that level. This is an issue that will be followed up in the research phase. The strategy map is a powerful communication tool, which shows the cause and effect linkages and is often now used in place of the scorecard within

organisations, albeit based on exactly the same principles; it is applicable to both private and public sector organisations.

Figure 12 Public Sector Strategy Map



Sourced from: Kaplan, Robert S. and David P. Norton. *Strategy Maps Converting Intangible Assets Into Tangible Outcomes*. Harvard Business School Press: Boston, Massachusetts. 2004. Page 8.

Potential Benefits of Using Scorecard Systems

Much of the current literature describes the benefits of scorecard systems as arising from their use as a strategic management tool – focusing on the alignment of key management processes, people, and systems to organisational strategy and demonstrating cause and effect linkages, which in turn permits a better analysis of achievements, (or lack of). A diagram

showing this process (reproduced from the API website) is given below (Figure 13):

Figure 13 Strategic Performance Management Process



From research carried out by Rigby for Bain and Co (2005, 2007), the Gartner Group 2000, and Kaplan and Norton (variously) show that scorecard systems are being used for both operational and strategic purposes. The most frequently cited reason for implementing a scorecard system is the need to track progress towards achieving organisational goals. Although this reason may appear to be operational in nature, tracking of goals can be considered strategic when it relates to an organisational goal rather than an operational target. The next two most frequently cited potential benefits from implementing a scorecard system were strategic: the need to communicate strategy to everyone and the need to align employee behaviour with strategic objectives. Other reasons for scorecard implementation include combined operational and strategic needs: being able to measure people, projects, and strategy; linking and aligning the organisation around strategy; and the need to measure performance at various levels.

An important implication of these findings is that organisations need to clearly define and communicate the reasons for implementing a scorecard

system (operational, strategic, or both). The reasons will influence both the design of the scorecard system and the resulting benefits that are achieved. When implementing a scorecard system there needs to be awareness of the desired benefits and for the system to be designed accordingly. While there are many benefits that are directly attributable to a scorecard system, others are more indirect. Some of the indirect benefits include fostering a more open, collaborative culture, and sharing results with other parts of the organisation instead of hiding them to retain power. The most commonly cited direct benefits include:

- Ability to measure performance.
- Increased communication.
- Organisational alignment.
- Ability to align employees' behaviour with strategy.
- Understand measures and strategy cause and effect.
- Ability to link performance to compensation.
- Decreased costs.
- Ability to make strategic decisions faster with better data.
- Increased revenues.

Another benefit attributed to scorecard systems is to go beyond driving performance improvement in organisations to facilitating sustainable alignment. To truly change employee behaviour, the new behaviour must be reinforced frequently. Scorecards are very good at continually providing feedback on progress Marr (2010).

Marr's (2010) research has shown that organisations that use a Balanced Scorecard approach tend to outperform organisations without a formal approach to strategic performance management. He suggests that amongst the key benefits of using a Balanced Scorecard are that the Balanced Scorecard and strategy map force managers to think about cause and effect relationships and as a consequence consensus is reached over a set of interrelated strategic objectives and outcomes and performance drivers are identified. Therefore, because these objectives are mapped on one piece of paper (the strategy map) organisations can start to communicate their

strategy more easily to their stakeholders. Due to this structured approach, Marr suggests that companies are able to measure what actually matters, thereby increasing benefits from the way this information is used to guide management and decision-making. Finally, Marr suggests, greater organisational and employee alignment results from the use of strategy maps derived from well-constructed scorecards.

Criticisms of the Balanced Scorecard

The dialogue above provides a reasonable case for implementing the scorecard and if appropriate processes are carried out there appears to be good reason to proceed yet not all organisations are using it. No system can be perfect and meet absolutely every conceivable need and, therefore, it is reasonable for there to be some valid criticisms of the Balanced Scorecard. The key issue will be to identify and examine these criticisms, assess whether they can be overcome in a cost effective manner and determine whether, in fact, the Balanced Scorecard is usable and able to provide the lauded benefits. A discourse on some of the pitfalls of and arguments against using the Balanced Scorecard follows below.

General Criticisms

Murby and Gould (2005) point to the lack of a rationality and logic to the original presentation of the Balanced Scorecard which makes it difficult to comprehend at first sight. Moreover, they question whether there are always valid objectives and associated targets which allow sufficient tracking of cause and effect linkages. They also raise concerns about control features inherent in the scorecard systems which may not be rooted in the organisation which will result in a reduced buy-in to the process. Malina and Selto (2001) found similar issues in their empirical study. They identified that although many organisations found that the Balanced Scorecard is an effective mechanism for managing strategy, there were internal disagreements at differing levels of the organisational hierarchies about specific aspects of the Balanced Scorecard as an effective device for communicating, controlling and evaluating the strategy. This may have been due to the failure to “root” the system within the organisation.

Lack of Commitment from Senior Management

Bourne and Bourne (2007) suggest there are many benefits to the Balanced Scorecard but also concede that some factors will cause the Balanced Scorecard to be unsuccessful; these include: the failure to fully design the measurement system, failure to actually use the system through lack of commitment by senior staff, and failure to update the system to reflect current strategic and operational objectives and measures when the strategy or environment changes. These failures can be attributed to poor resourcing when developing the scorecard, and most importantly, a failure of senior management to commit to the project which they commissioned and this is why it is so important for them to be fully engaged in the development process and assume joint ownership. Ittner and Larcker (2003) support these criticisms by their research and comment that the top down only approach to strategy formulation techniques adopted by some management teams contribute to these faults.

Stakeholders are Ignored

Bourne and Bourne (2007), Neely, Adams et al (2001, p 7-15) argue that some criticisms of the Balanced Scorecard that need to be addressed are that “people [*employees*] are excluded, suppliers are excluded, regulators are ignored, community and environmental issues are missing, and competitors are ignored”. Where this happens it can be ascribed to the design of the scorecard and what factors were taken into account during that process. It is clear from these discussions that the whole set of stakeholders cannot be ignored because, inevitably, their action will impact on financial performance and shareholder value. Bourne and Bourne concluded that the main criticism was that the original Balanced Scorecard was not a “multi-stakeholder framework”. This can make it more inward looking and more focused on strategy implementation than other frameworks.

But is being inward-looking a problem? Niven (2005) suggests that 70% of corporate failure is not due to a lack of a strategy (which ought to take into account the external operating environment) but due to a failure to execute the strategy – an internal matter, and therefore, that fact that the Balanced Scorecard is inwardly focused does not in itself present a problem although it is more likely to be an issue in the public sector due to its commitment to

external stakeholders. Whether stakeholders are ignored or not comes down to design of the scorecard itself and an understanding of how the strategy was formulated; if stakeholders are ignored then the scorecard will not assist with strategy execution as much as it could if stakeholders are included.

The Linkages between Objectives are Logical rather than Causal

There is general agreement amongst scholars that it is extremely difficult, if not impossible, to demonstrate an absolute causal link by separating out the independent variables from a business that has many associated activities contributing to an outcome (Kaplan and Norton 1992; Kaplan and Norton 1996; Nørreklit 2000; Ittner and Larcker 2003; Niven 2006; Bourne and Bourne 2007; Nørreklit and Mitchell 2007; Kaplan and Norton 2008; Nørreklit, Jacobsen et al 2008). A business cannot easily conduct experiments in the same way as scientific experiments can be carried out in a laboratory using control groups and therefore, it can be very hard to prove the causal link between measures. Nevertheless, for those clearly defined activities that have a linear relationship there are statistical methods such as correlation analysis and simple/multiple regression analysis for testing such causal models. Trying to produce quantitative links between financial and non-financial results may be a waste of valuable resource effort, which will cause disillusionment amongst staff. However, qualitative analysis, employing such techniques as focus groups and one-on-one interviews confront management beliefs about what matters to customers, employees, suppliers, investors, and other stakeholders; these can be used to validate the relationships in a model (Marr 2006, Niven 2006). As a result, the points made by Nørreklit and Niven that the relationships are more logical than causal do bear out (Nørreklit 2000; Niven 2006). To prove meaningful, the measures on the Balanced Scorecard must link together to explicate the strategy. It may take time to gather sufficient data to test correlations, but simply having managers begin to question the assumptions underlying the strategy is a major improvement over making decisions purely on financial numbers. In the research carried out by Bourne and Bourne (2007), they concluded that it was difficult to assess whether the scorecard did make a difference because of the issues discussed about isolating variables.

Nevertheless, they did take the view that many companies who did believe in the scorecard as a suitable framework for success also believed their corporate performance improved measurably as a result of using the scorecard (Bourne and Bourne 2007). If that belief is well founded, then arguably the scorecard has achieved what Kaplan and Norton set out to provide – a strategy management and performance management system that would lead to a better execution of strategy and provided that management does carry out a validation exercise on their scorecard assumptions then the argument about causal relationships versus logical relationships may not be so important.

A Critical Analysis of the Balanced Scorecard

These criticisms can be seen as reasonable and logical. Indeed, it was such criticisms that led Neely et al to develop their Performance Prism. However, a significant critic of the Balanced Scorecard has been Hanne Nørreklit (2000, 2003, 2008). It is worth looking at her criticisms in some detail to determine whether some of them can be addressed by the construct developed at the RBGE.

Nørreklit (2000) reviewed the assumptions made about the Balanced Scorecard by Kaplan and Norton (1992). She accepted the notion that the Balanced Scorecard moved strategy management from employing just financial controls to a much more integrated control system by including a number of non-financial measures. Kaplan and Norton (1992) suggest that these measures are linked in a cause and effect relationship between the various perspectives contained in the scorecard. Whilst Nørreklit accepts that this chain of linkages may improve internal communications about the extant strategy she rejects the idea that the linkages are causal. She argues they are more logical and because of that the Balanced Scorecard encourages invalid assumptions about future performance. Secondly, she argues that the Balanced Scorecard may fail because there is no assurance that it is firmly “rooted” in the organisation as a whole. Therefore, Nørreklit argues it cannot be considered a strategic management tool and the realised strategy is likely to be different from the intended strategy (of course, Mintzberg (1987) makes those assertions as well although his comments were not related to the Balanced Scorecard). Nørreklit (2000) suggests that the use of accounting

data and a “financial calculus” are necessary but not sufficient to determine corporate performance. Financial information can provide the organisation with the means for deciding on such matters as prices for products and therefore can be a basis for analyses when determining the organisation’s strategies. Nørreklit, however, does not address the public sector requirements when concentrating on the “financial calculus”. However, arguably, the financial calculus can provide the necessary controls for resource allocation and, therefore, the ability to deliver strategic objectives which are more heavily determined by non-financial measures in the public and not-for-profit sectors. Even more applicable to the public sector is Nørreklit’s assertion that the linkages between the measures are more about ensuring some form of complementarity and “coherence” rather than causality. Her argument for such a view is that what is intended by the actions required by organisational employees is to obtain the desired results, which requires them to be able to access resources to ensure a successful conclusion. To achieve this desired state Nørreklit argues that it is necessary to analyse whether the strategy is formulated taking into account the available or requisite resources. This comes back to how the strategy is formulated, whether a helpful framework is utilised, and whether there is adequate engagement with staff who have a valuable and valid contribution to make to the process.

Nørreklit (2003) makes a highly intellectual argument for dismissing the Balanced Scorecard as a valid tool by analysing the linguistics employed by Kaplan and Norton (1992, 1996, 2001). The point she makes is that the Balanced Scorecard has created a momentum of acceptability based on the charisma of the authors, to some extent the marketing hype they have created about it, and the fact that the authors are embedded in Harvard Business School. On the latter point Nørreklit suggests that just because a model emanates from Harvard that in itself does not make it a good thing. Using her own logic, a Harvard origin for the Balanced Scorecard does not make it a bad thing either. The principal issues arising from this paper is a repeat argument (from Nørreklit 2000) about the cause and effect relationships discussed above and whether the Balanced Scorecard is a strategic control model. On the point on whether the Balanced Scorecard is a valid strategic

control model the conclusion by Nørreklit is that the Balanced Scorecard does not monitor the external environments, which are arguably essential components of strategy. Further, she argues that due to its top-down formulation processes it is not sufficiently “rooted” in the organisation. In Nørreklit, Jacobsen, and Mitchell (2008) the authors assert that “business measurement is notoriously difficult” and therefore they caution users of any measurement system, including the Balanced Scorecard, against the spectre of “unanticipated and dysfunctional consequences”. They warn against the so called “cause and effect relationship” of non-financial measures predicting financial performance. They also raise concerns that the Balanced Scorecard may be too simplistic a representation of an organisation which is inherently complicated. Additionally, the Balanced Scorecard does not take into account timing differences between investments and results and, therefore any analyses based on the Balanced Scorecard could be problematical. Furthermore, the authors worry that senior management may remain isolated from the workforce if they rely solely on feedback through the Balanced Scorecard reporting mechanism. They suggest that there is no substitute for management seeing first hand for themselves the impact of their strategies. Finally, they worry about the selection of poor operational measures derived from the strategic objectives set in a top-down process. To overcome some of these difficulties the authors suggest that management must engage with the workforce to review decisions with an open mind set, be willing to change direction if the argument is sufficiently compelling and learn from experiences. In other words, for the Balanced Scorecard to be successful it needs to be an integrated management tool that obtains buy-in from staff and for emerging strategies to be considered and, if suitable, incorporated into the organisational strategies. These factors are highly relevant whether in the private or public sectors.

Performance Measurement: Its Contribution to Governance

Governance has been defined by the International Federation of Accountants (IFAC) and the Chartered Institute of Management Accountants (CIMA) as “the set of responsibilities and practices exercised by the board and executive management with the goal of providing strategic direction, ensuring that objectives are achieved, ascertaining that risks are managed

appropriately and verifying that the organisation's resources are used responsibly" (IFAC/CIMA 2004). Lees (2010) comments on CIMA's philosophy of enterprise governance which sets out to balance two dimensions of corporate governance: conformance and performance. Conformance includes board structures and codes, audit, remuneration and other statutory/regulatory requirements placed on organisations. Conformance issues will not be addressed in this review but it is assumed that organisations will comply with such requirements. Performance concerns itself with strategy and the key drivers for success and it is this dimension that this review will concentrate on.

The main theoretical concepts that have influenced corporate governance include agency theory, transaction cost economics, stakeholder theory, and stewardship theory (Tricker 2009; Mallin 2010). Stakeholder theory is one of the most relevant to public sector organisations as such organisations have a (often statutory) responsibility to the wider community over and above their principal funders (Mallin 2010). This brings in the requirement for transparent reporting on activities and performance to the public and sits comfortably with the IFAC/CIMA (2004) definition discussed at the beginning of this section. It also supports the assertion that an additional perspective of the Balanced Scorecard could be one devoted to stakeholders (Niven 2003). Tricker (2009) cites Hilmer (1993) who opined that a board's principal purpose was to ensure that the executive management were performing in a manner that would meet high expectations whilst taking risk into account to ensure that the principal funders were not put in unnecessary jeopardy. Tricker (2009) himself suggests that a board's tasks include strategy formulation, supervision of executive management, and accountability to external stakeholders.

In practice, the business of strategy formulation and policy making is commonly delegated to the chief executive and the senior management team. Consequently, there will be a need for the board to monitor progress in achieving the agreed strategies. Supervision of management and accountability matters are within the province of conformance and strategy execution and policy making are to do with performance, the two

components of enterprise governance as defined by IFAC/CIMA (2004). Over the past decades there have been many codes of practices produced in the UK aiming to improve governance: Cadbury (1992), Greenbury (1995), Hampel (1998), UK Combined Code (1998), Turnbull (1999, 2005), Higgs (2003), Tyson (2003), Revised UK Combined Code (2003), Myners (2004), and Revised UK Combined Code (2006).

Whilst most of the above codes related to the private sector, Mallin (2010) noted that there was increased focus on governance of the public sector. Nolan (1996)³ set down standards for openness and good practice on appointments and Langlands (2005)⁴ presented six principles of good governance. Amongst these principles was the need for providing the means for taking informed, transparent decisions, managing risks, and performing effectively. Simons (1995) cites Cyert and March and suggests that organisations cannot manage all goals at the same time. Consequently, the organisation must focus particularly on achieving its main objectives (Cyert and March 1963). To achieve this aim boards need to have some processes of management control in place to provide the necessary assurances that the organisation is performing as expected, achieving their stated objectives, and that no surprises occur (Simons 1995).

Management Control – How It Assists With Strategy Execution

Anthony (1988), and Lorange, Scott Morton, and Goshal (1986) define management control as the processes used to support managers in assessing the organisation's progress in the accomplishment of its goals and where discrepancies exist, to support areas needing attention.

Merchant and Van der Stede (2007) argue that management and employees must have knowledge of what the strategic and operational objectives are before a Management Control System can be designed. Because a strategy

³ Nolan, Lord (1996), *Standards in Public Life: Local Public Spending Bodies, Second Report of the committee May 1996*, HMSO London

⁴ *Good Governance Standard for Public Service* produced by the Independent Commission for Good Governance in Public Services chaired by Sir Alan Langlands

sets down what the organisation is attempting to achieve that in itself forms part of a control system. In other words it defines some limits as to the extent of the activities that may be performed. However, according to Merchant and Van der Stede (2007) the KPIs have to be “congruent with the organisation’s objectives” if the wrong activities are not to be carried out by the staff; this means that the strategy formulation process is of paramount importance as is the subsequent communication processes.

Management Control Systems - Nature

Merchant and Van der Stede (2007) argue an old-fashioned view of a Management Control System is of the use of feedback loops, where managers measure performance, compare that measurement with a preset performance standard, and if necessary, take corrective action. However, they believe that a broader view is necessary and Management Control Systems should focus on “encouraging, enabling, or sometimes forcing, employees to act in the organisation’s best interest”. Examples include planning processes, expenditure approvals, computer passwords, segregation of employees’ duties. Therefore, Management Control Systems include “all devices or systems managers use to ensure that the behaviours and decisions of their employees are consistent with the organisation’s objectives and strategies” (Merchant and Van der Stede 2007). Drury (1996) states that some other control systems that exist include Activity Based Management (based on Activity Based Costing (ABC)), performance measurement, benchmarking, business process re-engineering and, more recently, the Balanced Scorecard as a means of linking financial and non-financial measures. Any effective operational and performance management system should emphasise both financial and non-financial measures, and support the specific strategies of an organisation. Consequently, a Management Control System must accommodate both hierarchical and emergent models (Simons 1995). Simon’s key assumptions are that control systems manage the tension between opportunity seeking behaviour and limited attention, there is an interaction between intended strategy and emergent strategy processes, and Management Control Systems can reconcile these tensions between individual self-interest and innate desires to contribute. Simons (1995) states that Management Control Systems have a role to play in reducing the risks

of straying from activities that directly contribute to the achievement of the corporate goals, directing staff and allocation of other resources to achieve the targets, but at the same time encouraging staff to consider alternatives which might make the achievement of the goals a more likely outcome, and removing fear from staff to question the current modus operandi.

The Role of Management Control Systems

What the above argument suggests is that Management Control Systems are tools for implementing strategies and that strategy formulation is a top-down process. The Management Control System then measures progress and senior management take the necessary corrective action (Mintzberg 1987, 1990). This view contains some assumptions that strategies are deliberate, and articulated in advance of implementation, formulation is separate from implementation, formulation is reserved for top management, and strategy is the plan. Formulation is, therefore, analytical and conceptual (Simons 1995). However, the reality is somewhat different and in an emergent view strategy can materialise from all levels of the organisation as individuals search for and create opportunities. These views although competing are not mutually exclusive. Mintzberg (1987) suggests that both models operate concurrently.

Management Control Systems – The Simons Perspective

Simons (1995, p5) developed his framework for control based on the information types that management require to function. He defined a Management Control System as the “formal, information-based routines and procedures managers use to maintain or alter patterns in organisational activities”. His framework was based on an organisation’s strategy. He then introduced four “constructs” that must be understood for successful strategy execution: core values, risk, performance measures, and strategic uncertainties. Each of these constructs was to be controlled by different systems or “levers of control” (suggested systems in brackets):

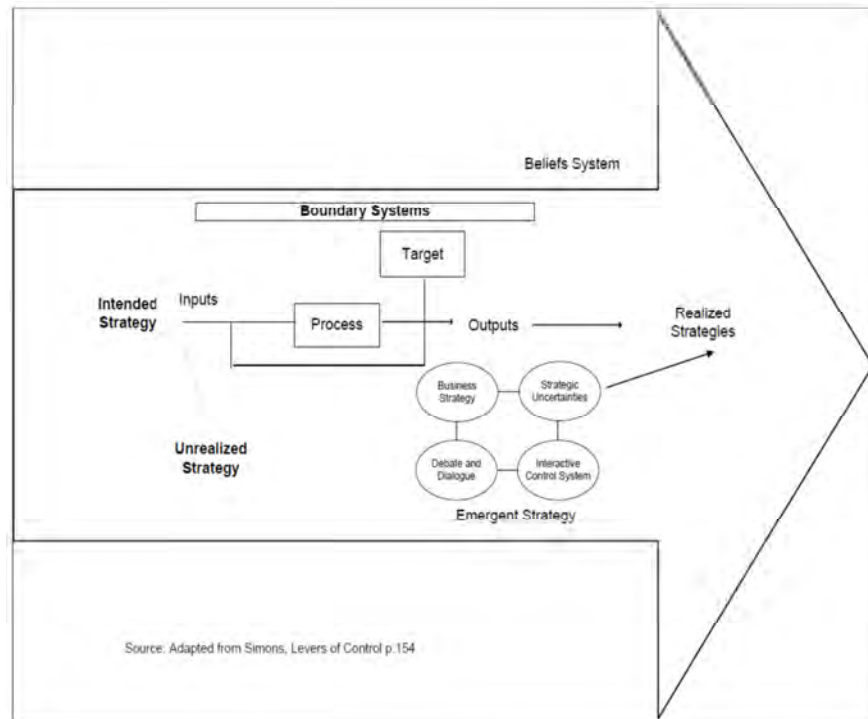
- Belief systems – to inspire the search for new opportunities (vision statement).
- Boundary systems – to set limits on behaviour (values statement).

- Diagnostic control systems – to motivate, monitor, and reward (Balanced Scorecard).
- Interactive control systems – to stimulate learning and emergent strategies (Balanced Scorecard).

Simons argues that effective managers employ these levers to manage their business in an inspirational manner whilst ensuring that performance is achieved with the aim of successfully executing the strategy. According to Simons information generated is important and needs to be addressed by senior management and will demand frequent attention from operational managers at all levels; the Balanced Scorecard can be used to facilitate this function. These controls, if used effectively, allow for emergent strategies to augment intended strategies on the journey to the realised strategies. The diagram (Figure 14) below depicts the relationship between intended, emergent, and realised strategies and showing the various control levers in place to assist with successful execution.

Diagnostic control systems are essential for implementing intended strategies and attempts to measure output variables that represent important performance dimensions of a strategy. The Balanced Scorecard is a method for analysing critical performance variables and measures associated with intended strategies and can be termed a diagnostic control system. Diagnostic control systems permit the organisation to achieve its goals without constant management supervision provided that the goals were set with staff involvement, exception reports are received by management, and important exceptions are followed up by management. All of this suggests that boards and their executive management team need information presented to them in a coherent manner which facilitates them exercising their roles effectively.

Figure 14 Levers of Control



Lorsch (2002) stated that “If directors were getting a balanced scorecard, they would be much more likely to be informed about their companies on an ongoing basis. The scorecard’s emphasis on strategy (linking it to all activities, day-to-day and long term) could help directors stay focused”. This suggests, therefore, that for a Balanced Scorecard to work effectively as a control system it must cater for this type of working and will require non-financial measures as a key component of the control method. If the objectives in the cascaded scorecards at sub-business unit reflect those in the corporate scorecard then the existing structures could be maintained as their departmental and personal objectives will be properly aligned. It is a simpler proposition to ensure the scorecards are adapted than to change organisational structures, which could bring about considerable resistance to change and consequent failure to execute the desired strategies. Earlier discussion touched on the issue of structure and strategy and how difficulties can arise if the structure is not set up to follow the strategy (Hax and Majluf 1983). The cascaded strategy maps can assist with this issue if there are

objectives to be achieved by staff in more than one division. Consequently, there must be linkages from the cascaded maps to the corporate map and the information abstracted back to that level.

Where the above discussion leads to is that good governance is a prerequisite to successful strategy execution. There needs to be a means to communicate the strategy, its objectives, and measures to be achieved. Whilst there are a variety of methods to achieve this, the Balanced Scorecard is one such framework for governance that appears to capture all of the qualities that such a system needs provided it is properly designed, involves staff at various levels and is acted upon in a timely manner in order to keep its credibility with the work force; all of this is very much the responsibility of senior management (Simons 1995, 2000). Additionally, there is agreement that financial measures still play an important part of any governance processes and the next section will discuss various methods employed to provide that support.

Costing Systems

Earlier discussion has focused on the need to develop non-financial measures that would drive performance to achieve the organisation's strategic goals. However, as stated above financial measures play key roles not only to provide a picture of what has already occurred but to provide supporting data for activities going forward. This section will look at what costing systems are available to provide that support.

Traditional Budgeting

In support of achieving strategic goals financial performance needs to be viewed in the context of the organisational objectives as a whole (Kaplan and Atkinson 1998). Drury (1996) suggests that strategic planning needs objectives to be specified in order to focus organisational activity in the long term to achieve the strategic goals. However, he also suggests that budgeting, which supports planning activity, focuses by necessity on the short term environment and identifies the resources that are immediately available to managers. Budgets aid planning by describing expected income and expenditure items against the significant activities carried out. Traditionally, in a command and compliance approach to control the

principal tool employed for control was measuring performance at the various hierarchical levels of an organisation by comparing budgeted results with actual results and carrying out variance analysis with a view to apportioning blame for underperformance. The difficulty with this type of performance assessment is that the budget is often set annually and will not change even if the plans change, rendering any subsequent analyses questionable at best. Additionally, dysfunctional behaviour can occur if managers' rewards are based on budget achievement rather than requiring a focus on longer term strategic objectives. In not-for-profit organisations the annual budgeting activity will look at how budgeted financial performance costs compared with actual financial performance costs but typically provides no analyses of how well the organisation performed its functions, which are usually non-financial in nature (Drury 1996). Innes and Mitchell (1998) argue that strategy formulation is assisted by knowledge of the total costs of carrying out organisational activities, and, therefore, a key component of management accounting information is a focus on costs, which arise from the procurement and subsequent usage of resources. Traditional costing systems involve two stages; firstly, the support costs are assigned to the output departments as are the costs directly arising within the output departments. Secondly, all the organisational overheads are attributed from the support departments to the output departments on an agreed basis, such as labour hours or machine hours. The disadvantage of this system is that it allocates all overheads in this manner which then results in distorted total costs when the overhead is not actually consumed in such a direct way (Drury 1996). Innes and Mitchell (1998) argue that there should be some causal relationship between the overhead cost and the activity and therefore, an assumption of a correlation between the overhead cost and the direct cost base such as labour or materials but the problem arises with this type of conventional costing system when the overheads are not altered significantly with changes in output activity as is often the case with service industries found in public sector/not-for-profit organisations.

Activity Based Costing

In response to these challenges Activity Based Costing was developed. Innes and Mitchell (1998) explain that Activity Based Costing differs from conventional costing processes by the way it treats overhead costs which are not directly related to volume of activity. With Activity Based Costing, the first stage is similar to that of the conventional cost accounting process but the second stage assigns overhead expenses of both the support and output activities to the activities that consume the resources. Innes and Mitchell (1998) confirmed that Activity Based Costing identifies the relationship between activities and resources needed by assigning costs to each of these resources, thereby giving visibility to the breakdown of total expense of the activities in their entirety. This means that Activity Based Costing can be equally applied to the service industry, including the public and not-for-profit sector (Kaplan and Atkinson 1998). This is because Activity Based Costing can be adapted by linking indirect costs to the services provided through Activity Based Costing drivers and this will provide more accurate costing of services. Research by Innes and Mitchell (1998) indicate that Activity Based Costing works in some circumstances and it has its advocates particularly when product lines/activities are being assessed for “true” profitability but the principal objections to this form of management accounting are the efforts required to implement such a system, to collect sufficiently accurate data to make the process robust enough, and to manage a costing process that interacts with activities that cross areas of responsibility. These difficulties whilst not insurmountable may give rise to resistance from staff members due to perceived difficulties and a failure to see any benefit increasing the likelihood of failure. In an attempt to overcome these types of difficulties, which are largely administrative and bureaucratic in nature, Kaplan and Anderson (2007) developed a system which they claimed was simpler, cheaper and more powerful than conventional Activity Based Costing; this was called Time Driven Activity Based Costing. However, whilst the claims that Kaplan and Anderson make may be true the system still requires careful analysis of cost drivers and their subsequent application. Time Driven Activity Based Costing, by the developers’ own admission, is best suited where processes are standardised, and there is a wide diversity of activities and clients with large overhead

costs. These processes are very much related to financial measures and in organisations where non-financial drivers are more important Time Driven Activity Based Costing is unlikely to be sufficiently attractive for such organisations to make the considerable effort required to implement. The issues that Innes and Mitchell (1998) noted with implementing conventional Activity Based Costing are likely to surface again. However, decision-making is a forward-looking activity and as a consequence so should financial management be. Therefore, the accountant's role ought to be supporting decision-making by assisting with value assessments about future activities.

The discussion above considers the issues arising from conventional budgeting systems which rely on cost management processes, whether they are conventional, Activity Based Costing or Time Driven Activity Based Costing, and relatively static plans (the budgets) with little flexibility to adapt to changing environments. Activity Based Costing and Time Driven Activity Based Costing have limited utility in public sector/not-for-profit organisations due to the considerable effort required to implement with little perceived benefits.

Does the Beyond Budgeting Debate Assist?

Hope and Fraser (2003) argue that budgets often influence management performance. They, therefore, suggest that a new model is required that will assist organisations to empower their staff to achieve their strategic aims. They propose abandoning the annual budgeting process and replacing it with a system that evaluates managers on prevailing environmental conditions rather than those that were assumed to exist considerably in advance of the start of the reporting period. They also advocate decentralising the organisation to its maximum potential – in other words, invoke a culture of trust. By doing this a greater level of transparency will occur and avoid the “gaming” that occurs to achieve promised rewards based on conventional budgets, which in turn strengthens the governance process. This type of approach may require a change in management culture where the senior managers will need to make clear what the boundaries for decision-making are, provide a clear purpose for the organisation and adopt a supportive role. If the “Beyond Budgeting” model advocated by Hope and Fraser was

considered highly effective, why has it not been more universally adopted? The answer may lie in the fact that whilst many of the principles proposed make sense from a business management perspective, organisations are still subject to the bureaucratic processes of governance and accountability requirements that are based on more conventional financial systems; this is especially true of the public sector and charitable organisations. Consequently, Hope and Fraser's model could be implemented in more organisations but probably on top of the existing processes and, therefore, additional effort would be required which may meet with some resistance from staff, unless they could see very real and tangible benefits arising.

Is There a Case for an Alternative System?

During the nineties American legislation and presidential actions started a process which would link government departmental budgets to outcomes rather than inputs. Niven (2003) observed that despite these well intentioned initiatives progress was slow and ineffectual. He suggested that a major part of the problem was due to poor performance measures which were ill thought out and poorly designed. Additionally, managers were still allocating their resources based on traditional methods (very often last year's outturn plus a percentage uplift) rather than thinking about what was required from the performance management system.

Niven suggests that the Balanced Scorecard is able to overcome difficulties experienced with other performance management systems. He argues if the Balanced Scorecard is properly designed then the resource allocations process can be linked back to the Balanced Scorecard. He suggests if the objectives, measures, and initiatives contained in the Balanced Scorecard, are properly cascaded to the sub business units then it will be a relatively straightforward process to form a basis for budget requests. Niven does not explain in any detail how the budgets are to be established but it is assumed that he expects the activities to be confined to established cost centres and, therefore, the main difficult issue that is raised surrounds deciding on priorities for spending a limited financial resource. What he does not explain is how to deal with budgets for activities that are performed by employees operating outside (at least for part of the time) their own cost centres.

The limitations of these accounting methods and the issues previously discussed on strategy and structure coupled with the difficulties encountered when the administrative structures are linked to conventional accounting models may require an alternative costing model to be developed which is relatively simple and cheap to implement and apply, can be easily understood by all levels of the organisation and assist with the management of strategic activities. Drury (1996) argues that modern accounting systems place an increased emphasis on collecting and analysing non-financial data on activities that are necessary to achieve the organisational strategy. There appears to be general agreement amongst the writers that whilst a model that collects non-financial data is required it needs to be supported by a financial model that supports achievement of strategic objectives in the most straightforward manner. Various models do exist but tend to be overly complex and expensive to implement and apply. Consequently, the case is made for developing a more suitable and relevant financial system for public sector/not-for-profit organisations to support strategy execution where the total cost of achieving the objective is illuminated. This will in turn contribute to the governance systems in place.

Potential Problems and Issues

There are a number of issues that need to be considered when implementing a new system in an organisation. These are discussed below.

Change Resistance – Nature

Unsurprisingly, difficulties can arise with the introduction of new systems. Lawrence (1969) and Coch and French (1965) suggest such resistance may take a number of forms: deliberate reduction in work output, strikes, sudden poor attitudes towards management (particularly those seen as responsible for the change), sabotaging of the new systems, downright refusal to use the new systems, endless comments (often based on ignorance) by staff as to why the change will not work. Even the more petty forms of this resistance can be troublesome and time consuming for the management team.

Change Resistance – Causes

When researching into the introduction of Activity Based Costing, Innes and Mitchell (1998) found some reluctance to move forward with the project

because it was felt that there were insufficient resources available to carry out the work, there were other higher priorities needing attention before Activity Based Costing, and that the managers were still to be persuaded of the benefits. Another reason given was that the benefits from implementing Activity Based Costing were perceived to be unlikely to outweigh the cost of making the effort. Moreover, the time needed by staff to maintain such a system after implementation was not available and the project would fail (Innes and Mitchell 1998). De Waal (2002) suggests that managers resist evaluation and sharing their knowledge with others in the organisation as it makes their performance more transparent and indeed, more accountable. These experiences are relevant in that they relate to the imposition of a new system that makes costs more visible and thus managers more accountable. Installation of a Balanced Scorecard system could face similar difficulties for comparable reasons. Del Val and Fuentes (2003) carried out a study of Spanish firms to discover why resistance to change arose. Many of the reasons espoused above were found to exist. They also found that failure of leadership to sponsor the change; tried and tested routines; indecision on how to implement; a lack of resources; and general cynicism towards yet another management idea contributed to building up resistance from the workforce. They found that the most significant factor in resistance was the existence of “deep-rooted values”. Additionally, other major factors included the vested interests of different factions of the workforce, failure to communicate effectively about the reasons for change, and insufficient resources to implement the new programme. Performance management systems such as the Balanced Scorecard fall into the category of new information systems which can experience some form of resistance (Scapens and Roberts 1993). Scapens and Roberts (1993) suggest that it is not “illogical or emotional” for such resistance to arise as it will probably be caused by a range of legitimate fears as discussed above. Therefore, the introduction of a performance management system also needs to take cognisance of the management of change as well as that of the technical introduction of a new system (de Waal 2002). Judson (1991) and Buchanan et al (2005) suggest that managers need to understand the underlying causes of resistance to change. They intimate that management need to be aware of

what the employees will perceive as potential gains and losses, the extent (significance) of these gains/losses and whether the individuals will decide whether the gains will outweigh the losses. Interestingly, Gratton (2000) and de Waal (2002) suggest that resistance is more likely to be found in an organisation which is stable, has developed ways of doing things over a long period of time and these processes have become institutionalised. Consequently, Gratton claims it becomes increasingly difficult to implement change as the effort required to make the change is perceived as insurmountable compared with carrying on with the status quo.

Overcoming Resistance

Buchanan et al (2005) and del Val and Fuentes (2003) argue that the management team need to develop strategies for dealing with such matters. Having identified causes of resistance del Val and Fuentes concluded that it would be helpful to determine whether the organisational culture was sufficiently adaptable to face up to the proposed changes. They posited that such a review would allow management and employees to exchange views on the need for the change and the concerns arising from such proposals. Where training needs were identified from these discussions they could be built into the management of change process and explanations given on how the staff can make a contribution to the future success of the organisation. Consequently, any concerns about capabilities could be overcome, provided sufficient resources were made available to implement and manage the process.

Arguably, an organisation's strategy is executed through cascading targets, objectives and KPIs down through the organisation and if the objectives and measures are properly aligned to the strategy and the managers have been involved in developing that process there will be a much greater understanding and consequently they will be more motivated to contribute positively. The way that management intend to apply a performance management system can have a profound effect on its acceptability. De Waal (2002) found that where management saw performance management as an aid to progress, used the resultant information to support decisions, and provide the necessary resources to assist employees achieve their objectives then there was much more likely to be acceptance. However, if staff

perceived that the system would be used to penalise poor results, then sub-optimising behaviour would result, in addition to resistance to the installation of any such system. Gratton (2000) and Olve, Roy et al (1999) suggest that if it can be shown that the current methods have become unsatisfactory then there may be more of an inclination to change.

Burns, Ezzamel, and Scapens (2003) concluded that there was no one solution that would enable change to occur painlessly. They took the view that organisational culture and the ways of doing business were extremely powerful “institutions” which required careful consideration before deciding on how to implement change. Therefore, where it was generally accepted practice to have, for example, a culture of performance management and widespread accountability for individual actions, then the introduction of such a system would be less problematic than trying to introduce such a system into an organisation that did not currently have such a process in place. Consequently, before embarking on a significant change management programme it may be necessary to challenge the status quo with a wide sector of staff (Burns, Ezzamel et al 2003). These writers also suggest that it is necessary to identify what internal assumptions are made about working practices and from where they emanate. Moreover, there needs to be an exploration of how such practices are continuously reinforced and what power groups exist within the organisation that maintains these assumptions. Finally, there needs to be a determination of whether such practices will be a barrier to the implementation of a new system.

Lawson et al (2008) suggest that a champion will help the process of implementation along by advertising success, maintaining positive communications and identifying issues that need resolving. Writers such as Olve, Roy, and Wetter (1999) and Burns, Ezzamel et al (2003) concur with the view that good communications backed up with good training and written instructions will assist with a change programme. Burns, Ezzamel et al (2003) argue that in addition to the new technical competencies required of staff, there needs to be a change of culture regarding the practices if such change is to stand any chance of success. One option is to enforce the change on staff. Judson (1991) argues that this needs authority to be exerted

by the management chain and would require the use of sanctions (assuming effective sanctions exist within the organisational structures) if staff did not co-operate. Whilst this might work in some cultures where obedience to authority is the norm, in most western cultures it will only work in the short-term and is likely to lead to staff finding ways to oppose the change by sabotaging chances of success by making every step of the change process as difficult as possible and abandonment of the project likely due to frustration. In most organisations the structures to make compulsion a viable option do not exist and management will be looking to their employees to be creative and participative in this process. If compulsion is the means being used management are unlikely to gain the level of co-operation necessary for success (Judson 1991).

Therefore, to successfully implement a new performance management system like the Balanced Scorecard the buy-in of the whole organisation from top to bottom is required (Nørreklit 2003; De Geuser, Mooraj et al 2009). There needs to be sensitivity to the fact that some staff might identify that the change is necessitated as a result of perceived or actual criticisms of their personal or group performance. Management must also be willing to be adaptable with the change programme as it is implemented as some emerging improvements will be suggested by staff. Introducing the Balanced Scorecard may encounter resistance but understanding the issues surrounding resistance and making sure that employees are fully consulted and involved will lessen the impact of such resistance. What is clear is that anyone intending to make systemic change needs to have an understanding of why people are following current practices and what factors would readily make them accept change. Simply imposing change without an adequate communication policy is unlikely to succeed in the long term. Despite the possibilities of resistance, there have been successful implementations and these are discussed below.

Application of the Balanced Scorecard in Practice

Although there can be difficulties introducing a system like the Balanced Scorecard and there are some valid criticisms of the Balanced Scorecard as a framework, a counter-argument to the criticisms outlined above was advanced by De Geuser et al (2009) who recently carried out a study of 76

firms to see whether there was any basis to the benefits claimed for the Balanced Scorecard other than by those made by the inventors with a vested interest in making such assertions and if these substantial claims stood up to the test of time and reality. They were interested in two facets: whether the Balanced Scorecard did actually add value, and if it did, how?

Following up criticisms about lack of research into the real effectiveness of the Balanced Scorecard rather than it having just a feel good factor about it, De Geuser et al (2009) questioned studies that state there is a clear lack of evidence on effectiveness. Nørreklit (2003) wrote that the Balanced Scorecard appeals more on its reputation given to it by its “guru” inventors and its psychological appeal rather than any firm logic applied to it. De Geuser (2009) did not accept that argument on the face of it and set out to apply a Management Control System framework to determine just how effective the Balanced Scorecard was.

They used a methodology that they attributed to Foster and Swenson (Foster and Swenson 1997) which “included a means comparison of success measures based on 4 dimensions: (1) the management evaluation of implementation success, (2) the costs and benefits of associated with the development of the Balanced Scorecard, (3) the integration of the Balanced Scorecard into the management processes of the organisation, (4) the decentralisation of firms and their work units”.

De Geuser et al (2009) looked firstly at whether the Balanced Scorecard contributed to organisational performance. What they set out to determine was whether the Balanced Scorecard did actually meet Kaplan and Norton’s purpose of providing a framework for seeing how the various elements of the business contributed to overall success and assisted with ensuring that the various business units were actually aligned to the strategy. They wished to challenge the assertions by Nørreklit and Mitchell (2007) that the causality between the principles set out by Kaplan and Norton (2001) for their “Strategy Focused Organisation” was merely just a theoretical construct. These principles were that the executives could lead change, that the Balanced Scorecard was an aid to operationalising the corporate strategy, that it could assist with ensuring that the whole organisation was aligned

(business units, departments and corporate HQ staff) to the corporate strategy, and by making everyone familiar with the strategy it would become a part of the employees' daily routine (Kaplan and Norton 2001). Using the Foster and Swenson model they concluded that decentralisation and empowerment were necessary attributes for a successful organisation and that the Balanced Scorecard (if cascaded) aided those processes. Consequently, they concluded that the Balanced Scorecard did contribute positively to performance (De Geuser, Mooraj et al 2009).

Next they looked at “sources of organisational performance” to determine how the Balanced Scorecard provided value. Again, they decided to test whether the Balanced Scorecard did add value by carrying out a regression analysis on the validity of the principles: the need for top management support, the central role that the Balanced Scorecard provided for formulation of strategy and deciding upon priorities, the alignment of the organisation's processes and employees, the involvement of everyone in the Balanced Scorecard development, and finally, how much the Balanced Scorecard influenced organisational practices and processes. What they found was that there appeared to be a correlation between the use of the Balanced Scorecard and translation of strategy into action, alignment of people and processes improved with the use of the Balanced Scorecard, and that strategy became an everyday activity for employees throughout the organisations. They were surprised, however, to discover that the lack of top management support was not a significant factor in making the Balanced Scorecard a useful tool – they ascribed this outcome to the decentralisation of some of the organisations under study and the interpretation of what was meant by top management (De Geuser, Mooraj et al. 2009). They concluded that this latter finding deserved further study as it was contradictory to other research outcomes into strategy implementation.

In summary, they produced some empirical results based on a survey of 76 businesses and their results indicated that the Balanced Scorecard had a positive effect on performance and that the business management activities and employees worked in a much more focused and joined-up manner. According to Lawson, Hatch and Desroches (2008) 84% of those firms

adopting best practice on scorecard usage were able to demonstrate ability to measure performance. Additionally, they found that successful scorecard systems allowed an organisation to not only measure performance but also to maintain sustainable alignment of activities, thereby contributing to an improved bottom line. This was further confirmed by a 2006 Palladium Group survey of 143 organisations which showed that of more than half the respondents that were using a formal strategy execution management process, nearly 75% were outperforming their peer group. Among those without such a formal process, 75% were underperforming, or at most, matching the average performance of their peers (Kaplan and Norton 2008). The high adoption rates of the balanced scorecard among top companies (see above section on Adoption) give some credence to De Geuser's findings and there is, therefore, a case based on empirical evidence that the Balanced Scorecard is considered an effective framework for strategy execution by a significant number of companies and is a relevant tool for this study.

Experiences of Specified Users

The surveys above indicate an overall satisfaction with the Balanced Scorecard by users as a framework for improved performance. Looking more specifically at the not-for-profit sector Kaplan and Norton (2001) cite several organisations that claimed to have benefitted from adopting the Balanced Scorecard: The May Institute, New Profit Inc, The United Way of Southeastern New England (UWSENE), Duke Children's Hospital, and the Montefiore Hospital. These organisations all adapted the scorecard to the model suggested by Niven (2003) placing the customer very much at the top of the scorecard and connecting to their mission. In May's case they placed the financial perspective at the top of their strategy map to signal the importance of finances coming from their donors. According to Kaplan and Norton (1996, 2001) these organisations found that once they had modified the original 1992 model they were able to achieve consensus on their strategies and effectively align their organisations to execute their strategies.

However, Kaplan and Norton (2001) also acknowledged that not all organisations were able to succeed with the Balanced Scorecard. They cited the ACE Group of Companies who acquired the CIGNA Property and Casualty (a good example of Balanced Scorecard usage) but did not retain

any of the management team from CIGNA and as a consequence the Balanced Scorecard project withered through lack of interest. UWSENE also experienced difficulties due to a change of leadership – the new CEO having no commitment to the Balanced Scorecard as a concept; a similar issue arose at United Way of America. Lawson, Hatch et al (2008) argued on the basis of a SHAPs (SUNY, Hyperion, and Pepperdine scorecard) study that the most common reasons for Balanced Scorecard projects to fail were that the system did not have sufficient profile, management were indifferent to the Balanced Scorecard, too much time was spent making it work, and staff were not engaged. All of these issues accord with the research carried out by other writers cited in this review.

However, Lawson et al (2008) also found that organisations like Suzano Petroquímica, First National Bank, City of Boston, Fujitsu Services OY all found that by implementing a Balanced Scorecard, they were able to better communicate the strategy to their staff, improve organisational alignment, better measure performance, understand cause and effect linkages, and make strategic decisions in a more timely manner. In the UK Marr (2009) carried out case studies in a not-for-profit context i.e. Belfast City Council, the Royal Air Force, the Home Office, Insurance Mutual (TT Club), the Motor Neurone Disease Association, the National Lottery Commission and, more recently, Audit Scotland. According to Marr, all of these organisations have adapted their Balanced Scorecards to better suit their needs and have enjoyed benefits similar to those outlined in the US case studies. Marr also found that the scorecards required updating over time as the strategies were revised. Moreover, he argues from these case studies that it is essential to have a clearly articulated strategy to provide the basis for an effective performance management system.

Summary

In the 21st century sole reliance on financial measures of performance is being queried as factors such as employee knowledge, customer relationships, and innovation and increasingly recognised as producing much of the value created by organisations. This is particularly so since the demise of much of our manufacturing industries and now that our wealth creating firms are predominantly knowledge-based or service-based.

Strategic performance management is about engaging everyone in the strategy and its execution, so that organisational performance becomes everyone's responsibility and measurement should support this process. For any strategic performance management initiative to become successful, an appropriate environment/culture needs to be developed by moving away from the command and control mentality where measures are used to assess people's past performance and make judgments on whether they have achieved their targets or not. If there is a move to an enabled-learning environment, indicators are used to learn, test managerial beliefs, challenge, and improve future performance, and the causal link between the measures/objectives and how the organisation as a whole works is fully understood then there will be a better understanding of the organisation's interaction with its operating environment.

As a consequence of the dissatisfaction with measurement systems that relied solely on financial measures, managers began to look for an alternative system to measure and manage their organisation's performance. In particular, there was agreement that frameworks that incorporated non-financial measures and provided some balance to the more traditional financial measures would be of benefit. In addition some enhancement of predictability by emphasising cause-and-effect has been apparent. A framework that is fit to measure performance should provide: a balanced reflection of the business model in use (financial and non-financial measures), a succinct overview of the organisation's performance, a set of measures that is multidimensional and provide coverage of key areas of performance, and measures which should be integrated both across the organisation's functions and through its hierarchy.

The most popular contemporary framework in use has been the Balanced Scorecard developed by Kaplan and Norton (1992) which was designed to communicate strategy by explicating the various linked objectives that need to be achieved. Much of the current literature describes the benefits of scorecard systems as arising from their use as a strategic management tool – focusing on the alignment of key management processes, people, and systems to organisational strategy and demonstrating cause and effect

linkages, which in turn permits a better analysis of achievements. Modern accounting systems place an increased emphasis on collecting and analysing non-financial data on activities that are necessary to achieve the organisational strategy. There appears to be general agreement amongst the writers that whilst a model that collects non-financial data is required it needs to be supported by a financial model that supports achievement of strategic objectives in the most straightforward manner. An example particularly pertinent to the public sector which operates under clear spending constraints is that of costing.

There is a need for boards to monitor progress in achieving their agreed strategies. Supervision of management and accountability matters are within the province of conformance, and strategy execution and policy-making are to do with performance; these are the two components of enterprise governance as defined by IFAC/CIMA (2004). Any effective operational and performance measurement system should emphasise both financial and non-financial measures, and support the specific strategies of an organisation. Consequently, a Management Control System must accommodate both hierarchical and emergent models. Lorsch (2002, p 9-11) stated that “If directors were getting a balanced scorecard, they would be much more likely to be informed about their companies on an on-going basis. The scorecard’s emphasis on strategy (linking it to all activities, day-to-day and long term) could help directors stay focused”.

To successfully implement a new performance management system like the Balanced Scorecard the buy-in of the whole organisation from top to bottom is required. It will be necessary to identify what internal assumptions are made about working practices and from where they emanate. Moreover, there needs to be an exploration of how such practices are continuously reinforced and what power groups exist within the organisation that maintains these assumptions. Therefore, introducing the Balanced Scorecard may encounter resistance but understanding the issues surrounding resistance and making sure that employees are fully consulted and involved will lessen the impact of such resistance.

There are many benefits to the Balanced Scorecard but there are some factors which will cause the Balanced Scorecard to be unsuccessful; these include: the failure to fully design the measurement system, failure to actually use the system through lack of commitment by senior staff, and failure to update the system to reflect current strategic and operational objectives and measures when the strategy or environment changes. These failures can be attributed to poor resourcing when developing the scorecard, and most importantly, a failure of senior management to commit to the project which they commissioned and this is why it is so important for them to be fully engaged in the development process and assume joint ownership.

In summary, surveys indicated that the Balanced Scorecard had a positive effect on performance and that the business management activities and employees worked in a much more focused and joined-up manner. Additionally, successful scorecard systems allowed an organisation to not only measure performance, but maintain sustainable alignment of activities, thereby contributing to an improved bottom line. However, a key to success is to make appropriate adaptations to ensure the Balanced Scorecard meets the needs of the organisation in question, which requires a deep understanding by the senior management team of what it is they are trying to achieve and how best to measure their successes. A relevant, supporting costing system is necessary to contribute to effective strategy execution and governance. Without this understanding, cost savings can soon prove to be false economies and organisations risk damaging the competencies they need for the longer term. Moreover, poor allocation of scarce resources may result.

The research phase needs to identify whether the existing Balanced Scorecards in popular use are suitable for widespread use or whether specific adaptation is required and how this meets the research objectives and questions. Moreover, current costing systems need to be examined to determine whether they meet the needs of public sector organisations attempting to understand the costs of achieving their strategic objectives, and if this is not the case develop a system that does.

The literature review sets up a research project that involves developing novel solutions to an existing problem. The research strategy is discussed in the next chapter.

Conclusions

What has been established in the review of strategy and strategic planning is that there is a role for strategic planning to allow for the varying stakeholders requirements to be incorporated when formulating strategies. However, there is a risk that top management will be isolated from their workforce if they adopt a wholly top down formalised planning process that does not engage the staff who will be required to execute the strategies. The strategy formulation process needs to provide the means to coordinate the activities of the whole workforce in a coherent manner and this means that staff engagement will allow for emergent ideas to surface, for staff to buy in to the organisational goals which will increase the likelihood of successful strategy execution, the goal of any governance process. It can be concluded that strategy formulation is a complex process which can benefit from some coordination device to assemble the top down and bottom up contributions. The Balanced Scorecard, if appropriately adapted and supported by a relevant and easily implementable costing system, can make an effective contribution to performance management of both private and public sector organisations. This assertion is supported by the widespread adoption of the Balanced Scorecard around the globe. Some lessons can be drawn from the review and these are specified below:

- 1) The performance management package, and in particular the Balanced Scorecard, must:
 - a) Have top management support.
 - b) Clearly articulate the organisational strategy by judicious selection of objectives and measures.
 - c) Involve staff at all levels in the selection of the measures to assist with successful implementation and subsequent operation.
 - d) Be cascaded down and across the organisation to sustain organisational alignment with the strategic goals.
 - e) Have the ability to be revised to reflect environmental change.

- 2) Relevant and appropriate non-financial indicators will provide information on strategy progress and if costing data is directly related to the achievement of the strategic objectives then it is reasonable to deduce that a combination of both financial and non-financial measures incorporated into the Balanced Scorecard system are critical for:
 - a) Providing data on cost effectiveness/profitability.
 - b) Indicating where and how activities are driving strategy execution.
- 3) Governance covers both compliance and performance dimensions of an organisation's activities. The adapted Balanced Scorecard is capable of making a significant and critically important contribution to the performance management requirements by:
 - a) Assisting with strategy formulation.
 - b) Providing the means to measure progress with achieving strategic goals by monitoring both financial and non-financial data.

RESEARCH METHODOLOGY

Specification of the Problem

The problem identified at the RBGE was that considerable effort was devoted to the production of corporate plans to satisfy an external stakeholder (Scottish Government). They were not put to any use by the RBGE management team during the course of the year nor were any attempts made to track progress towards achieving the goals set down in the plan. Although the RBGE produced management accounts no one could state what the costs of achieving the objectives were and therefore it was not possible to use financial data to assist with prioritising activities or the allocation of resources. Like all other public sector bodies, botanic gardens are subject to operating in an environment of financial constraint. To fulfil their broader social purpose it is essential that the economic resources available are used as productively as possible. To solve these issues it is proposed that sound strategic and performance management information systems have to be developed for the management team of the botanic garden.

The Literature Review

The literature review provides information on how it is possible to adapt the Balanced Scorecard to assist with the execution of strategy; Kaplan and Norton (1996), Niven (2003), and Marr (2009) all argue that the Balanced Scorecard is suitable for adaptation and it is suggested that with adaptation of the perspectives the Balanced Scorecard can also assist with strategy formulation. Moreover, the review explored the possibilities of improving governance processes by adopting relevant costing systems that directly supported the strategic objectives. However, there was little information on how these concepts were or could be used in organisations like the RBGE, (a Non Departmental Public Body, and registered Scottish charity). Consequently, a novel model was required to be constructed and evaluated *in-situ*. This requirement, therefore, leads to the research design described below to solve the RBGE's problem.

Research Design

The research design is the general plan on how the research objectives will be achieved and the research questions (see introductions page) will be answered. It explains how evidence will be collected, and analysed. The research method chosen is a constructive approach to research (Kasanen, Lukka et al 1993) which bears similarities to action research. A case study setting, the RBGE will be used as the site to conduct the research. This chapter explains and justifies these choices.

Research Orientation

Bryman and Bell (2003) suggest that business research is subject to considerable debate concerning its relevance to practitioners and its fundamental purpose. They explain that quantitative and qualitative research differs in approaches to social investigation and create important epistemological and ontological considerations. Bryman and Bell then argue that ontological considerations concerning objectivism (a position that asserts that social phenomena and their meanings have an existence that is independent of social actors) versus constructionism (a position that asserts that social phenomena and their meanings are continually being accomplished by social actors and are in a constant state of revision) represent important dimensions of the quantitative/qualitative debate. These approaches are suitable for field research in management where the purpose is to test theories, where such theories are concerned about “stability, equilibrium, and optimality” and that these theories “predict that employees/organisations behave in certain ways” (Kaplan 1998).

However, in this research it can be argued that the most important consideration when choosing a research philosophy is that of the research questions themselves (Saunders et al 2007). If the research questions are indifferent to a positivist or interpretivist approach then the pragmatist’s view is confirmed, that is to say both quantitative and/or qualitative methods are appropriate in the study. Tashakkori and Teddlie (2003) suggest that pragmatism is more appealing as it avoids difficult and often insoluble debates about truth and reality. The most important issue as they see it is that the results from the research should add value. Action research is an approach to research that incorporates both taking action and creating theory

about that action (Coghlan and Brannick 2010) and is the approach that will be taken in this research project.

Action Research

Bryman and Bell (2003) assert that action research became popular as a research method within business and management during the 1980s and 1990s because of its emphasis on practical outcomes. This characteristic differentiates it from other qualitative investigation. There is no single type of action research but broadly it can be defined as an approach in which the action researcher and a client collaborate in the diagnosis of a problem and in the development of a solution based on the diagnosis (Eden and Huxham 1996). Eden and Huxham (1996) state that effective action research should be applicable to organisations other than the one under study, it should relate to existing theory, but will lead to a new emergent theory arising from the data, and that the findings from the research will impact on the collaborators. Therefore, there must be some clarity about expectations from the participants in the study. Argyris, Putnam and Smith (1985) suggest that action research comprises 4 stages: identification of a problem, developing plans about how to solve that problem, taking action to solve the problem and then, finally, evaluating the success (or not) of the solution. Shani and Pasmore (1985) provide a helpful definition of action research which encapsulates much of the above discussion: "Action research may be defined as an emergent inquiry process in which applied behavioural science knowledge is integrated with existing organizational knowledge and applied to solve real organisational problems. It is simultaneously concerned with bringing about change in organisations, in developing self-help competencies in organisational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in a spirit of collaboration and co-inquiry". Moreover, action research outputs are usually more readable, relevant, and interesting to practitioners as well as academic audiences (Winter and Burroughs 1989).

Innovative Action Research

Taking this argument forward, Kaplan (1998) argues that where the existing practice within an organisation is less than ideal and that if a novel idea is being proposed to improve organisational performance in some way then the

more traditional forms of research are unable to assist as the researchers are unlikely to be able to find enough (if any) organisations that have adopted these ideas. Kaplan proposes an alternative approach, “innovation action research”, which has researchers involved in helping to implement the new idea. Kaplan views it as a problem that the more traditional, observational types of research on current practices relating to existing theories only served to comment on “obsolete and ineffective practice” (Kaplan1998). In other words, they did not help develop new and “innovative” practices to advance the science of management accounting. Kaplan acknowledges that some of his peer researchers employing the more positivist approach to research would argue that studying companies which were successful but used existing management [*including accounting*] systems would, by the very fact they [*the companies*] were successful, inherently mean that the management systems were adequate and therefore, not needing development. This perspective, according to Kaplan, brings into focus the differences between the researcher who “observes, describes, analyses, understands, and predicts” as opposed to the action researcher who wishes to “innovate, design and implement new practice”. Kaplan claims that the action researcher is able to develop better solutions that will produce observable improvements in organisations and will go on to implement such solutions as a result of this type of collaboration. Indeed, Kaplan (1998) suggests that it is very difficult for accounting researchers to change existing practices without engaging in action research. He makes the point that many researchers try to justify their research outcomes by illuminating their arguments in publications without ever attempting to prove if they work in practice. Kaplan (1998) argues that it is only by implementing ideas in practice that new management learning occurs and better theory is developed as a consequence.

Argyris (1996) proposed (in his Kurt Lewin Award Lecture held in 1997) features which should be present in action research of an innovative nature include:

- solutions that are valid and implementable should also be generalisable and applicable in the organisation under study;

- the solutions can be implemented in real time;
- the implementation of these solutions will lead to improvements in performance;
- the claims that these solutions really work meet the highest test of “disconfirmation”.

Importantly, Kaplan argues that the engagement of the researcher with the proposed solutions will allow the determination of whether the ideas do add value to the organisations in which they are being installed. The researcher will be able to document additional learning arising from the installation process. Kaplan (1998) reminds us that field research is more often cross-sectional, longitudinal or case-study based and is usually descriptive in nature. However, he points out that where there is a new problem to solve these types of research methods have their limitations as they cannot assist with new ideas – only those that currently exist. He suggests that “innovative action research” provides the means for researchers to engage with implementing new ideas. He makes reference to Kasanen, Lukka et al (1993) who have similarly argued for “a constructive approach” which provide “managerial constructions” for dealing with managerial problems that exist in organisations. This research is very much about implementing new practices in strategic performance management at the RBGE; therefore, the chosen form of research will be that of innovative action research.

Constructive Approach

In the field of management accounting, which is generally regarded as an applied science, new challenges are constantly arising as business reacts and adapts to changing environments. The discussion above suggests that action research attempts to solve real world problems. The end purpose of the research extends beyond explanation and understanding to prescription and technical enhancement. Kasanen, Lukka et al (1993) proposed what they called the “constructive approach in management accounting research”. This involved designing a model or process to assist with solving organisational problems. Kasanen, Lukka et al (1993) refer to three concepts: constructions; managerial constructions; and the constructive approach. They define a construction as something which solves a problem

and that its efficacy is proved by being used successfully. Reasonably, managerial constructions are designed to solve business problems. Consequently, the constructive approach is a research design which will solve business problems by designing managerial constructions. Kasanen develops his ideas on research using the constructive approach by suggesting that it falls into six phases:

1. Identifying the problem.
2. Understanding what the problem is and why.
3. Developing a potential solution.
4. Showing that the solution actually works.
5. Indicating the theory on which the solution is built and what contribution to new theory the solution might bring.
6. Looking to see how generalisable the solution might be.

Constructive research is, therefore, an applied method of study involving a process based procedure. However, once again the usefulness of the research cannot be determined until it is successfully tested in a practical situation. Kasanen, Lukka et al (1993) argue for the practical validation of managerial constructions and that in order to achieve this there are three tests for this and that constructive research should be able to pass at least one of these tests:

1. A “weak market test” where the solution has been embedded in a single organisation and used for decision-making purposes;
2. A “semi-strong market test” where the solution has been widely adopted by organisations;
3. A “strong market test” where the organisations adopting the construction had out-performed peers who have not adopted the construction.

According to Kasanen and Lukka constructive research may either be quantitative or qualitative or both. Because constructive research is about solving problems it is normative by nature. It typically initially involves case studies and therefore, will also be descriptive in nature. The constructive approach tends to use “heuristic innovations” and always sets out to prove the utility of the designed solution. This research project is

employing a constructivist approach and is based on a single case study. The research phase will be conducted according to Kasanen's constructive approach within the overall approach of action research and shall pursue the application of validation tests as described above.

Case Study

A case study is defined as "a research strategy that involves the empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence (Saunders et al, 2007). Yin (2003) and Morris and Wood (1991) argue that the case study is appropriate to gain a rich understanding of the context of the research and the processes being enacted. Consequently, a case study strategy is particularly helpful in explanatory and exploratory research such as the constructivist approach to action research. As the case study uses multiple sources of evidence multiple methods of data collection will be required. The RBGE forms the research site for the case study.

Data Collection

Denzin and Lincoln (2000), Robson (2002), and Tashakkorri and Teddlie (2003) argue that in a case study strategy multiple methods are useful if they provide better opportunities to answer research questions and enable triangulation of data to prevent researcher bias affecting the validity and therefore, the reliability of the inferences drawn from the data. Triangulation was originally conceptualised by Webb et al (1996) as an approach whereby more than one method would be employed to check the integrity of the inferences drawn from data. The data collection techniques in this research include documentary analysis, participant observation, interviews and brief explanations of these techniques are given below. They were used in combination to help specify the problem, design a solution and then validated the outcome from the construction that was developed.

Data Collection Methods:

The following discussion describes the principal data collection methods to be used in this study.

- Documentary Analysis. This technique involves studying written documents such as minutes of meetings, administrative records, reports,

and public documents relating to the organisation. This is a helpful technique when having an understanding of the history leading up to the specified problem and is essential for gaining a better understanding of how it evolved. This will require an interpretive perspective of what is written so the researcher needs to guard against making assertions just to fit in with the proposition being advanced (Saunders et al 2007).

- Sources. RBGE archives have been researched for files relating to the planning processes dating back to 1988 (when the planning process at RBGE first commenced), minutes of related meetings, and the series of corporate plans (unpublished and published). These will be referenced later in the Research Section.
- Participant-observation. This a method in which the researcher joins in with the group under study to record events as they occur. Due to the action research design, participant observation is highly appropriate given the employment of the researcher. The main issues to guard against are potential lack of reliability and validity due to observer error and biases (Ritchie in Ritchie and Lewis 2003; Saunders et al 2007). Keeping a record captures the experiences as they occur reducing the chances of erroneous interpretations due to passage of time (McNiff and Whitehead, 2009).
 - Sources. Record keeping is the primary documentation for observation and allows the reflective process described below to be undertaken.
- Interviews. Interviews are purposeful discussions between one or more people to collect valid and reliable data relevant to the research question. The form of interview was semi-structured which will allow a wide ranging discussion on a range of preset themes to elucidate as many views on the research question as possible without constraint. Interviewer bias and respondent bias (when the interviewee tries to give the expected answers) need to be guarded against (Saunders et al 2007; Ritchie and Lewis 2003).

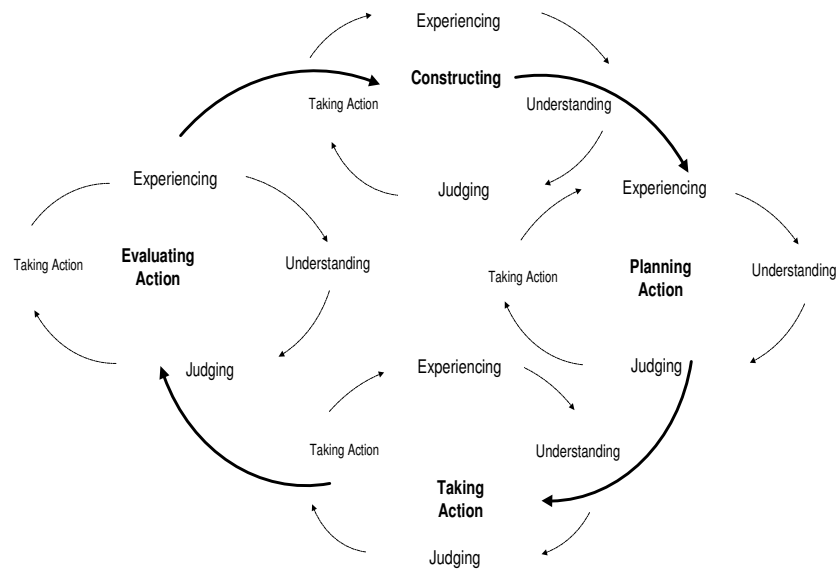
- Sources. A series of one to one interviews were held with key personnel in the organisation to obtain their views on the constructs as they evolved. Appendix J provides a list of interviewees.

Limitations of Action Research

As a practitioner-researcher, which is the role I have adopted as a part-time researcher/full time employee of the organisation under study, an issue that is raised, according to Saunders et al (2007), is that of time. There needs to be a balance between the demands of the research role and that of the full time employment role. There needs to be an awareness of the assumptions and pre-conceptions that held personally about both the construction and the organisation. The risk exists of reticence about looking into issues that would augment the research if it was thought that these issues would not support the construction and likely conclusion (Saunders et al, 2007). It can be difficult to ask the patently obvious questions especially if one works within the organisation and there may be a problem with status. The researcher's organisational role is a senior one as Director of Corporate Services (and, therefore, attends Board meetings), and this may inhibit full responses as the subjects may wish to give the "expected" answer, rather than one that reflects their true feelings. Coghlan and Brannick (2010) make the point that it is important to distinguish between facts and interpretations made by the researcher. Independent readers of the research output should be able to determine for themselves "the validity of the research, its claims to the creation of knowledge and any claims for its transportability". They suggest that the researcher cannot guarantee but should aim to be "attentive to the data, intelligent in inquiry, reasonable in making judgements, and responsible in making decisions". A responsible action researcher is required to undertake a cycle of activities which Coghlan and Brannick (2010) describe as the general empirical method in action research projects (see Figure 15 below). To ensure that the knowledge developed is more than just a collection of "privately held assumptions", the process of reflection allows the researcher to look objectively at the experiences taken from the cycle of activity shown below. Reflection requires the researcher to question the processes undertaken and to honestly examine the conclusions arising

from them. According to Coghlan and Brannick (2010) reflection is the “critical link between the concrete experience, the judgement and taking new action”. This process of reflective activity needs to be transparent to external observers in order for the validity of the research to be upheld. Winter (1989) argues that the presentation should reflect the researchers own process of learning and not make a judgment of other people.

Figure 15 Empirical Method in Action Research Projects



Source: Coghlan and Brannick (2010) *Doing Action Research In Your Own Organization*, London, SAGE Publications, p 24.

Difficulties Encountered

As a part-time student who has taken his own work organisation and problems within it to be the primary focus of study the researcher was already immersed in the organisation as a complete participant and had an understanding of it and of the processes being studied. Coghlan (2001) argues that there are interrelated sets of issues relate to this type of research:

- Pre-understanding of the setting.
- Role duality/organisational politics.

Pre-understanding

There are great advantages and also potential issues arising from pre-understanding. Pre-understanding refers to the knowledge, insight, and experience that researchers have about their own experience of their organisation (Gummesson 2000). An advantage of pre-understanding is the valuable knowledge about the organisational cultures and informal structures (Coghlan and Brannick 2010). However, a disadvantage can be that the researcher becomes too close to the data and assumes too much, say for example in the interview situation when the interviewer already knows the answer but does not validate it by extracting it from another subject. Alternatively, the researcher's position in the organisation may inhibit interviewees providing frank answers in fear of offending the researcher.

Role Duality/Organisational Politics

According to Coghlan and Brannick (2010) the traditional difference between an action researcher and the research subjects reduce as the action research role is added to the normal roles of the member of staff. This can cause difficulties when trying to maintain the full-time employee role and at the same time carrying out the research role; conflicts and divided loyalties can arise. To mitigate these difficulties one has to take a more detached, objective and neutral role than otherwise might be expected. The researcher needs to avoid becoming involved with the politics in the organisation where it would compromise the neutrality of the research outcome. In addition to holding the appointment of Director of Corporate Services the researcher is also a Chartered Management Accountant and as such is trained to adopt an independent view of information being presented in order to provide the best advice to colleagues in the organisation. This training, knowledge, and experience should assist with overcoming issues of objectivity.

Vetting of Solution

The ultimate test of whether the construction was valid will be whether it works in the real world. This is where the market tests described above come into play. The weak market test will indicate that the construct is valid and provides a solution for the RBGE but a more useful test will be that of the semi-strong market test where other organisations have also adopted the solution; this will be possible by publishing in journals widely read by practitioners. The ultimate test is that of the strong market test where adoptees outperform non-adoptees. Research already shows that this is the case with the Balanced Scorecard but whether the RBGE construct can emulate that will take time to ascertain. The vetting that has been achieved is discussed in the Research Section.

Conclusion

As with all selected research methods there are both advantages and disadvantages. Every piece of research is based on methods selected because of their strengths and fit to the situation which the researcher confronts and the objectives that he/she/they pursue. However, limitations will also inevitably exist. The researcher must (a) recognise their existence and (b) where possible take any necessary steps to mitigate their effects on the research. This chapter has provided the justification for the research that is proposed. It has also identified the limitations inherent in it and discussed their possible mitigation. The results and conclusions must be viewed and assessed against this background.

RESEARCH FINDINGS

Introduction

In this study the problem identified was that, at the Royal Botanic Garden Edinburgh (RBGE) Annual Corporate Plans were being developed and approved by the sponsoring department in Government. However, no further reference was made to them during the year despite the considerable effort devoted to their production and that of the supporting plans. This raised questions about their utility. Furthermore, no effort was made throughout the year to determine whether the strategy contained in the corporate plan was being achieved or indeed what the objectives contained in the strategy were costing to achieve. The RBGE did not appear to be different, in respect to these matters, to other similar types of organisations sponsored by Government and, therefore, the resolution to the issue could not be found by looking for a successful model elsewhere and simply copying/amending it. If this was to be a widespread phenomenon in the public sector then a considerable waste of effort and therefore cost would be incurred. Consequently, the development of a new solution was required to improve the utility of the Corporate Plans by extending the existing formulation process to include an execution framework. This encompassed the introduction of a performance management system and to identify a suitable means of costing the organisation's activities and objectives and to inform the organisation's resource allocation process in a helpful and meaningful way.

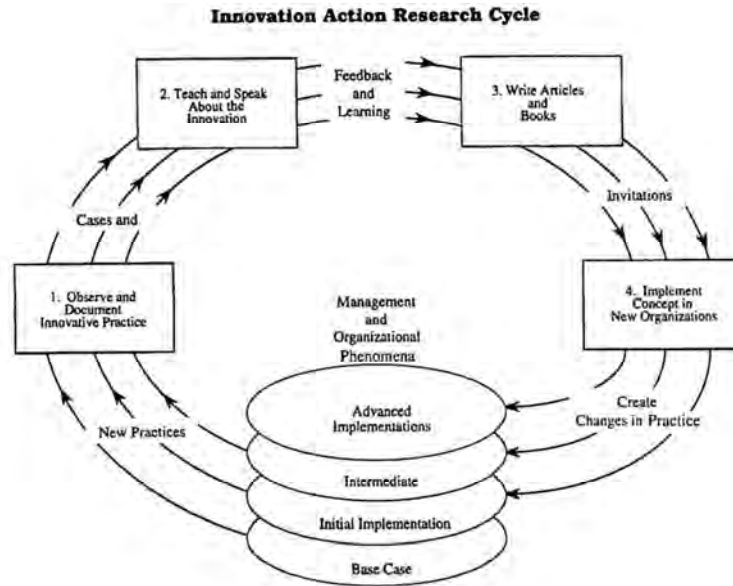
Framework

The identified problem was one of immediate issue to the RBGE and, indeed, was common to many other similar Government sponsored organisations. As no resolution was therefore apparent within the public sector the requirement to develop, implement and assess an innovative solution was adopted as the focus of this research study. The research was based on Kasanen and Lukka's (1993) constructive approach which is appropriate for developing novel constructs as solutions to important practical managerial problems. Kasanen and Lukka suggested that there

were six phases contained in their approach and they provide the framework used to present the research results in six corresponding sections. However, recognising that producing a novel solution is unlikely to be perfect at the first attempt, the innovation action research cycle developed by Kaplan (1998) (see Figure 16 below) was also adopted by the researcher. This strengthened Kasanen and Lukka's constructive approach at Phase 3 (Developing a potential solution) which provided a logical mechanism for operationalising the framework being adopted. This meant the researcher became involved in designing and assisting with implementing the new idea i.e. the solution to the problem. Kasanen and Lukka's six phases including Kaplan's elements are shown below:

1. Identifying the problem.
2. Understanding what the problem is and why.
3. Developing a potential solution.
 - a. Document Innovative Practice.
 - b. Teach and speak about the Innovation.
 - c. Write articles.
 - d. Implement Concept.
4. Showing that the solution actually works.
5. Indicating the theory on which the solution is built and what contribution to new theory the solution might bring.
6. Looking to see how generalisable the solution might be.

Figure 16 Innovation Action Research Cycle



Source: Kaplan, R. S. (1998). "Innovation Action Research: Creating New Management Theory and Practice." Journal of Management Accounting Research 10: 98.

Each of the Kasanen and Lukka's phases is considered, in sequence, below. The specification of the problem and the subsequent development of the solution were multi-stage processes hence there was a 12 year timeline which is depicted below to assist the reader with understanding the sequence of events.

Timeline

YEAR	EVENT
1988	First Corporate Plan developed (not published).
1992	Second Corporate Plan developed (not published).
1993	Third Corporate Plan developed (not published).
1995	First Corporate Plan developed and published.
1996	Corporate Plan developed (not published).
1997	Corporate Plan developed (not published).
1999	Second Corporate Plan developed and published. New Regius Keeper appointed (October).
2000	Appointment of Director of Corporate Services Division (researcher); Botanicus 21 (strategy document published).
2000-2003	Marginal improvements made to Corporate Plan structures and contents.
2004	Balanced Scorecard concept introduced – preliminary work for PhD proposal.
2005	First Corporate Plan using Balanced Scorecard published; SPRIG Costing exercise took place.
2006	Balanced Scorecard modified; Strategy Map introduced.
2007	PhD commenced; Performance Management System (ESM) introduced; Strategic Themes adopted.
2008	Balanced Scorecard/Strategy Map updated. RBGE Strategic Themes linked to Scottish Government Strategic Objectives. ESM trial started.
2009	Major revision to Corporate Plan; 5 th perspective added to Balanced Scorecard/Strategy Map. Major revision to ESM started. Research Update article published.
2010	Revised ESM rolled out from start of FY. Strategic Objective Costing system developed. Publications

(RES and FM article) issued. Presentations given to accountancy and finance professionals at various locations.

Managerial constructions used at Senior Management Group meetings from July 2010. Improvements to reporting content and format made due to dialogue between researcher and the Group.

Strategic Objective Costing model evolved with satisfactory outcome produced in December 2010. Decision taken to use the costing model as a basis for budgeting for FY 2011/12 (Strategic Objective Budgeting).

Thesis written up.

Thesis submitted.

2011

Identifying the Problem

Whilst there was recognition by management that the corporate plans represented the organisation's intended strategy there was no connection or engagement between the plans and staff employed by the RBGE. Indeed, most staff members were completely unaware of their existence. This meant that there was little or no chance for emergent strategies (Mintzberg 1987) to come forward from staff members. Furthermore, no attempt was made to track progress through any form of performance management system or develop a costing system directly related to the nature or purposes of the strategy. The researcher's professional responsibilities in his role as Director of Corporate Services required him to be responsible for the development of the formulation processes, the eventual construction of the organisation's Corporate Plan, and the associated performance reporting system. He knew that he would waste a lot of his time producing plans that would be put to no use unless a solution was found to making corporate planning a more meaningful and effective process for the organisation. A solution was required that would make the Corporate Plans meaningful to staff in that they would inform management and staff of the strategy, and engage staff in the process of strategy formulation. Moreover, the allocation of resources in accord with the Plan had to be made explicit. This had significant implications for the organisation's costing system which was only designed to identify costs classified in terms of their input type (salaries, utilities costs, travel and subsistence, supplies etc). There was therefore a need to identify a methodology to associate costs with the objectives contained in the Plans, and develop a suitable performance management system to track progress towards the Plan's goals in a constructive manner by encouraging movement towards them in an enabled learning environment. It was also important that these developments would take into account the culture of the organisation.

The RBGE was constituted as a Non Departmental Public Body (NDPB) in 1986 by the National Heritage (Scotland) Act 1985 which empowered the Board of Trustees to:

- “carry out investigation and research into the science of plants and related subjects, and disseminate the results of the investigation and research;

- maintain and develop collections of living plants and preserved plant material, books, archives and other related objects;
- keep the collections as national reference collections, and secure that they are available to persons for the purposes of study;
- provide advice, information and education, in any manner which seems appropriate to them, in relation to any aspect of the science of plants or of any related subject;
- provide other services (including quarantine) in relation to plants; and
- afford to members of the public opportunities to enter any land occupied or managed by the Board for the purpose of gaining knowledge and enjoyment from the Board's collections".

These statutory functions provided the basis for the corporate objectives developed over time.

Understanding what the problem is and why

To understand what the problem is it was necessary to carry out some archival research into the initial corporate plans developed at RBGE and ascertain what processes were carried out to formulate these plans. The archival research is triangulated with interviews with senior staff who carried some responsibility for strategy formulation and writing the corporate plans at the time.

Draft Corporate Plan 1988-89

RBGE's first draft Corporate Plan was initiated in 1988 in response to a Government requirement that all public bodies should produce such Plans. To that end guidance had been issued in November 1987⁵ by the then sponsoring Government Department (Department of Agriculture and Fisheries for Scotland (DAFS)) which suggested that key components of such a Plan would include: a situation audit of existing circumstances; broad aims and objectives and how they fitted in with national and international priorities for botanical R&D effort; some challenging but realistic targets; and an explanation of how finances would be generated to fund the activities

⁵ DAFS letter Reference: K2202502.117 dated 18 November 1987.

(both state and commercial income). Activities were expected to be prioritised within functional areas. Additionally, there was a presumption that a performance management system would be proposed.

A Corporate Planning Group comprising middle to senior staff was set up to gather data and develop the Plan. Existing Corporate Plans from Royal Botanic Gardens Kew, the Countryside Commission, and English Heritage were a source of some inspiration. Additionally, elements of the British Museum's, the National Libraries of Scotland, and the Economic and Social Research Council's plans were also perceived as a supply of useful information/ideas. The first draft (4th March 1988) set down what the Corporate Planning Group considered were the elements that would constitute the Corporate Plan. All but one section described existing activities and provided some justification for them. One section "Future Developments" was perhaps the only one containing a vision for the future and, therefore, more strategic in nature. A review of the third draft by DAFS⁶ sought a high level cost/benefit analysis of planned capital developments and for the RBGE to accept that short to medium term planning was possible even in organisations whose principal objectives were long term in nature. Three objectives had been identified: research, education, and amenity. In subsequent drafts the Amenity objective became re-titled "Garden Services" to reflect the informational as well as amenity values of the gardens to members of the public. The Corporate Planning Group recognised that all these objectives, although conceptually separate, were interrelated and interdependent.

The response from DAFS⁷ was generally encouraging but they expected prioritisation of activities to be undertaken and some indication provided of how the proposed supporting activities ranked between each other in support of the strategic objectives given the limited resources available. Additionally, the RBGE had suggested that it was virtually impossible to provide short to medium term options given the generally long term nature

⁶ DAFS letter Reference: MHM01451.048 dated 15 April 1988.

⁷ DAFS letter Reference: MHM01451.048 dated 15 April 1988

of its primary role of taxonomic research; this was rejected by DAFS as unrealistic. Moreover, there were concerns that some of the sections were overly detailed, operational in nature and lacked strategic direction. Indeed, subsequent commentary suggested that many of the descriptions of objectives were a reflection of what was being carried out at the time rather than containing broad directional goals. In other words, they were past or current-oriented rather than future-oriented. At a meeting between the Regius Keeper (Chief Executive) and DAFS senior staff on 18th April 1988 discussions took place on the formulation of the RBGE Corporate Plan. Minutes of this meeting were issued⁸ which centred on the structure of the Plan and commented on the descriptions of current activities mixed in with actions required to enable objectives to be fully achieved. The requirement for performance measures was also established at this time. Additionally, the Minutes focused on future education requirements and questioned how RBGE's present offering of a Diploma in Horticultural Education fitted in with Scotland's education strategy. Future income generating activities required consideration in light of potential public funding reductions. More work was carried out to expand topic headings into paragraphs with greater detail and a fourth draft was sent to DAFS for comment. There is no record of the response from DAFS to that draft. A fifth draft Corporate Plan was issued on 17th May 1988 incorporating some of the recommendations (*not discovered*) from DAFS. No record of the 6th draft is available however the 7th draft was issued on 31st March 1989, which claimed to be almost complete, except for a preface by the Chair of the Board of Trustees and an executive summary. The document was 52 pages long, including three annexes containing: 1) an organisation chart, 2) information on visit numbers, and 3) numbers of students and student employment. The first 38 pages were descriptions of current activities, with six devoted to future activities. No Key Performance Indicators (KPIs) had been developed to track progress with strategy execution or drive future performance. It would be easy to criticise these efforts but due recognition must be given to the very considerable effort made by a few staff to construct the Plan. They

⁸ Note of Meeting held 18 April 88 between RBGE/DAFS – F2201903.058 dated May 1988.

possessed little or no previous experience or knowledge of developing Corporate Plans and had no expert understanding of strategy and its purposes. The Plan appears to have been filed with no further action taken on it.

In an interview Dr Crinan Alexander⁹, a senior scientist (now retired) and member of the Corporate Planning Group at that time stated that: *“In my view the Corporate Plan was a newly imposed requirement from DAFS but was of no benefit to the RBGE. However, the effort going into describing RBGE activities proved to be useful as a communications exercise for staff”*. Dr Alexander had been at the RBGE for some 9 years before engaging in this exercise and it was only after seeing the product of the efforts that he started to gain a fuller understanding of what it was the RBGE did. He, therefore, suggested that the exercise was useful for that reason, if nothing else. He did not expect anything to be done with the Corporate Plan as it was not seen as anything other than a document to be submitted to the Scottish Office for some unknown purpose. He was asked if there was any guidance or framework provided or discovered to assist with the formulation of the Plan. He was unaware of any such framework or guidance and felt this omission made the whole exercise very frustrating and unnecessarily difficult; *[however, it was the case that some guidance had been issued]*¹⁰

Professor John McNeill (Regius Keeper from 1988-1990, and now retired) had been responsible for the production of the first draft and was the individual liaising directly with DAFS on matters relating to its production. At interview¹¹ he confirmed that he had only remained in post for a period of two years and was unable to comment on any planning activity beyond 1990. However, he did state: *“I thought it reasonable for DAFS, as the funding body, to expect some documentation to explain how public funds were to be*

⁹ Interview between Researcher and Dr Crinan Alexander held on 22 September 2010.

¹⁰ DAFS letter Reference: K2202502.117 dated 18 November 1987.

¹¹ Interview between Researcher and Professor John McNeill held on 28 September 2010.

spent by the RBGE. However, I believe that the Plan, once submitted, would be filed and put to no further use by the Government". He suggested that the RBGE was unable to offer any evidence of usage beyond submission to DAFS. He stated that: *"It was a frustrating time because I had tasked Dr James Cullen [retired but not available for interview] with the hard work of developing the Plan. Many drafts were developed but none seemed to satisfy the requirements of DAFS"*. Professor McNeill was of the opinion that the DAFS staffs had no real concept of what it was they wanted and that they were simply reacting to any submission, usually negatively, with further requests for additional work. This was particularly trying for scientific staff members who felt they had more important work to do. Although they had been willing to devote considerable efforts to the exercise they lacked collaboration with or guidance from DAFS. When asked if any planning framework was available to follow Professor McNeill confirmed there was no framework. However some generic guidance had been issued by DAFS but that it had not proved very helpful, according to Professor McNeill.

Draft Corporate Plan 1992

A new draft Plan was produced in May 1992 and contained an introduction, an extract from the National Heritage (Scotland) Act 1985 and some description about the Living Collections and the Library Collection (in considerable detail, reflecting that the Corporate Plan was being authored by the Head Librarian). No detail was given on the Herbarium in which the substantial Preserved Collections were housed. An outline structure of staffing and management structures, assets, finances and business development were given but were not complete. It seems evident that the Plan was abandoned before much more work was carried out indicating a lack of commitment from senior management or understanding of its purpose. The role of DAFS would appear to have been to offer either criticisms or requirements for more work to be done after the event but to provide no assistance in the formulation or construction of the Plans. This may reflect the situation that Corporate Plan (strategy) formulation was as new to DAFS staffs as it was to RBGE staff and the iterative nature of the discussions was due to learning occurring on both sides. The latter point of "sides" is perhaps pertinent as it appears that the RBGE was being put

through some form of test and that DAFS were acting in the role of examiner. Perhaps a more helpful role would have been that of partner so that there was a sense of collaboration and sharing of the problem. After all, it seems that the purpose of the exercise at that time was to satisfy a DAFS requirement rather than to generate something that the RBGE wished to carry out for its own benefit. At least, this was the view confirmed by the interviewees.

Draft Corporate Plan 1993

A Corporate Plan (unpublished) was produced in 1993. The 1993 Plan did not have a mission statement, but used the constituting act, The National Heritage (Scotland) Act 1985 as its directional inspiration. It set five strategic objectives for the RBGE:

1. Improve management information generally and financial information in particular.
2. Raise levels of computer literacy, competence and use, at all levels, throughout RBGE.
3. Improve access (in its widest sense) to scientific, horticultural and educational activities at RBGE for both scientists and non-scientists.
4. Improve in-house knowledge and use of human resources.
5. Focus visitor information services more closely on the aims and needs of RBGE.

Arguably, Objectives 3 and 5 were strategic and the others were more operational in nature. It represented a new start to the planning process with some acknowledgement that some improvements in processes and practices were needed to reach the longer term goals. The planning process was based on the premise that the RBGE had four operational divisions whose remits were to fulfil the functions of the 1985 Act; these divisions were: Science, Horticulture, Horticultural Education, and Public Services. It had a further 3 divisions to support these operational divisions: Director's Office, Administration and Estates, and Business Development. For strategic planning purposes it was decided that some units other than these operational divisions were required to enable the objectives to be set and pursued across

divisional boundaries and comprised: Director's Office, Scientific Research, Gardens, Education, Information and Central Services, Land and Buildings. These planning units were to be guided by a Strategic Plan which would be revised annually and provided the implementation detail for each objective. Additionally, Issue Plans were devised to enable the executive to plan for areas of special interest, such as conservation, and produce policy documents with strategic implications. Each of the objectives had targets and specific timelines for achievement. However, these were not transferred to the Corporate Plan.

Draft Corporate Plan 1993/94-1997/98

A corporate planning process was documented in the RBGE Corporate Plan 1993/94-1997/98 Part One and is represented below (Figure 17) with the planning cycle represented in Figure 18 below. The aim was to gather a baseline set of statistics to set benchmarks for the future. However, these were not linked to a strategy, were in many cases subjective with no basis against which to make a judgement, and thus were unable to move the organisation forward. On investigation it was discovered that the Plan had not been published and, therefore, its primary achievement was the documentation of what the various departments carried out. This was useful for an internal understanding of the complexities of the organisation and, consequently, the effort was not entirely wasted. It also indicated that work carried out was becoming repetitive as had been experienced during 1988-1989 and confirms the views of Dr Alexander (see above).

Figure 17 RBGE Corporate Planning Process - 1993-1997

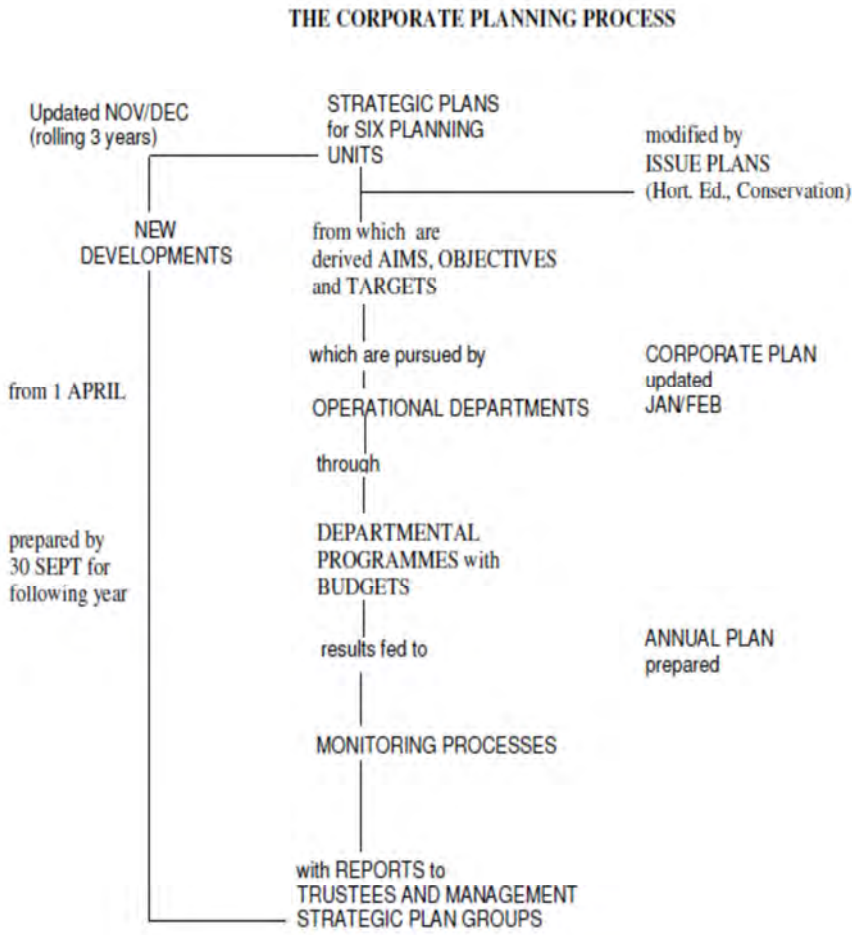
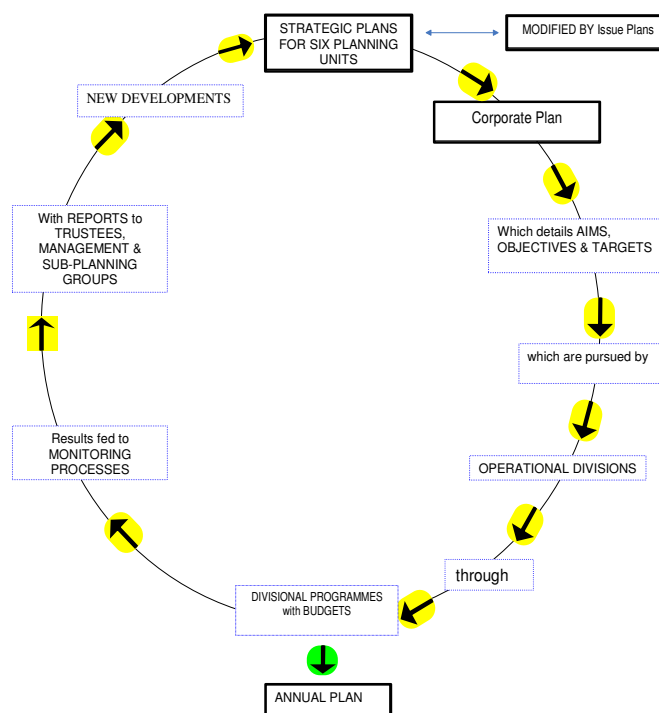


Figure 18 RBGE Planning Cycle – 1993-1997



In an interview with Professor David Mann¹², currently a senior principal researcher at the RBGE, who in the 1990s, held the appointment of the Deputy Director of RBGE and Head of Science, it was established that most of the effort put into the Corporate Plan was in anticipation of the forthcoming Peer Review. Professor Mann had some responsibilities for the formulation of the Corporate Plans during the early nineties due to the executive role he held at the time. Professor Mann stated: *“As far as I can recall I think that the main purpose of the Corporate Plans, at that time, was to prioritise activity and expenditure within the RBGE (in other words between Science and Horticulture). They also served as discussion/bidding documents for additional funding to support the core science effort”*. Professor Mann held the view that the success or failure of these Plans was largely down to the relationships between RBGE and the senior official in

¹² Interview between Researcher and Professor David Mann held on 30 September 2010.

DAFS. These varied according to the individual in post. What was therefore evidenced was that a reasonably sophisticated effort at strategic planning was conducted within the divisions¹³. However, when it came to joining all of these up to a Corporate Plan, there appeared to be some difficulty deciding what was of strategic importance from a corporate perspective rather than a divisional one.

Draft Corporate Plan 1995

In 1995 a revised Corporate Plan was produced and a mission statement devised: *“To explore and to explain the plant kingdom - past, present and future - and its importance to humanity”*. This Plan set out to describe in one place for the first time the totality of the resources and activities of the RBGE. It aimed to provide a unifying focus for work over the succeeding five years and it was the RBGE’s first published Corporate Plan that separated the strategic objectives into functional areas. The Plan was then broken down into activity sections which were summarised by a tabulation of objectives, targets and PIs. However, some of the targets, as detailed in the Plan, would have been difficult to quantify. There is a sense from reading this document that the corporate planning exercise was an attempt to describe in great detail what activities were being carried out and the rationale for the document was to justify why the organisation existed rather than making an attempt to formulate a strategy for a future direction.

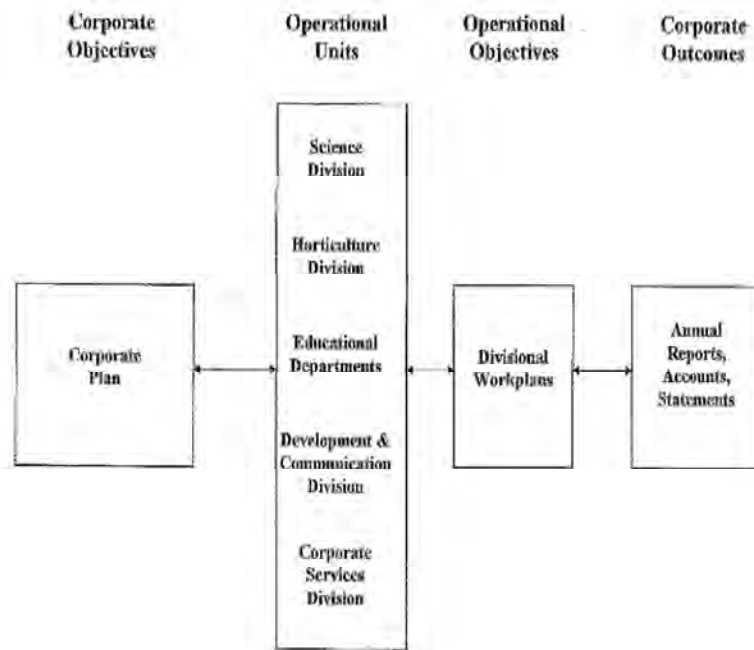
Draft Corporate Plan 1996

In 1996, according to the Executive Summary, the Corporate Plan set out to link to a deliberate planning process. The mission statement remained the same as in the previous year but the focus of the Plan indicated which of the projects from the previous year were to continue, which projects were re-scheduled, and which new projects were to be initiated during the year. Interestingly, there was a form of apology for recognition of the need for flexibility, ascribing blame for that due to planning immaturity: “RBGE remains in the early years of this new corporate way of thinking and

¹³ RBGE Strategic Plan – Horticulture, 28 February 1991; RBGE Strategic Plan – Information Services, 9 June 1991; RBGE Strategic Plan –Science, July 1992

Planning systems remain immature and inevitably flexible”. From this it can be deduced that the management team believed that a “design school” model (Mintzberg, 1987) was the way to formulate strategy and that emergent strategies were not necessarily acceptable. There was an acknowledgment that although much of the RBGE’s work was carried out within divisional silos of specialisation there was also recognition of the need to work in cross divisional project teams. An organisational chart of the RBGE and associated planning committees are shown at Figure 19 and the strategic planning flow to outcomes is shown at Figure 20 below. Moreover, there was a belief that such working practices would encourage a shared understanding of corporate requirements. A diagram of these types of working arrangements that was developed for this Corporate Plan is reproduced below in Figure 21. In many ways, this could be seen as an early attempt at a Balanced Scorecard, even though the authors were unaware of the concept.

Figure 19 RBGE Corporate Structure (including Planning Committees) in operation in 1996/97¹⁴



¹⁴ Draft Corporate Plan 1996

Figure 20 RBGE Strategic Structure indicating flow to Outcomes¹⁵

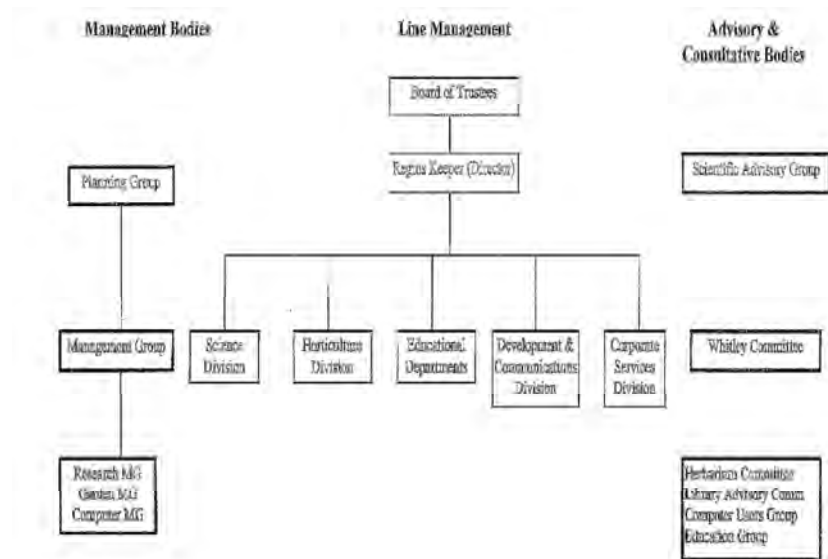
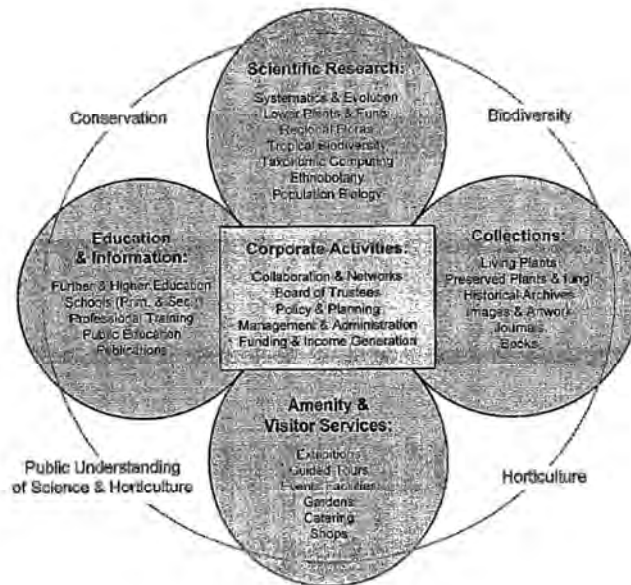


Figure 21 RBGE Corporate Activities



Source: RBGE Corporate Plan 1996

¹⁵ Draft Corporate Plan 1996

Commentary on Process to Date

As an early attempt at strategic planning, the process, as found in archival search, appeared somewhat overly complicated. Whilst the planning process indicated a route map and considerable details were produced from the specialist divisions it was hard to see how the strategy setting processes would actually link with and support each other at a higher level. The perceived solution to coordination from the executive management was to create several layers of committee bureaucracy, which, in itself, was unlikely to lead to much success. Moreover, the objectives set in the 1993 Corporate Plan described above demonstrated that there was no overarching vision or strategy that set out a direction for the RBGE. Objectives 1, 2, and 4 recognised that some competencies needed to be improved whilst Objective 3 simply reflected a requirement of the Act. Objective 5 appeared to support Objective 3 by providing information to increase accessibility. Nevertheless, the document provided a fresh starting point for corporate planning and there was an acknowledgement of the need to cascade plans. Each division/department was responsible for developing operational plans to align with the overall Strategic Objectives. This was monitored through a series of committees managed through the Director's Office. However, it is not clear how often these committees met and what was discussed or achieved. Documentation was made available by Professor Mann to indicate that considerable work had gone into preparing strategic plans for both scientific and horticultural activity. In those plans (which were divisionally based) targets were proposed and attempts at allocating resources were also made. Although a comprehensive effort was made to carry out strategic planning within the divisions¹⁶, there appeared to be some difficulty deciding what was of strategic importance from a corporate perspective rather than a divisional one.

¹⁶ RBGE Strategic Plan – Horticulture, 28 February 1991; RBGE Strategic Plan – Information Services, 9 June 1991; RBGE Strategic Plan – Science, July 1992

Corporate Plan 1999/00-2001/02

In 1999, the Corporate Plan was developed without a Chief Executive (awaiting the new appointee to take up post) and the mission statement changed once again to “To document, display, and scientifically interpret global plant and fungal diversity, thereby enhancing our knowledge of plant biology, evolution, conservation, habits and sustainable utilisation for the long term benefit of humanity”¹⁷. Due to the anticipated change in leadership this Plan was seen as an interim document in an attempt to forecast RBGE’s main activities over the next three year period until the new leadership team was in place, and a revised planning process developed. The Corporate Plan contained an introductory section which detailed the corporate objectives, provided some policy direction, outlined the corporate structure and explained what the strategic planning process was. This section was followed by an explanation of the rationale of the major functions (research; collections; education, amenity and visitor services; and corporate services, development and communication) and gave broad corporate objectives (one for each of the major functional areas. The numbers of strategic objectives remained at five¹⁸ and were as follows:

1. To conduct a programme of high quality research, generating, publishing and publicising new knowledge of plants and fungi, their evolution, distribution and relationships, thus continuing to make high-quality contributions to the UK science and horticulture base and to the international network of systematics research.
2. To shape national and international systematics frameworks, and to set policies in plant diversity and conservation, environmental impact studies, and the sustainable utilisation of plant and fungal resources. Achievement of this objective will be enhanced by extending and strengthening its already formidable level of co-operation with other institutions, groups and individuals worldwide.

¹⁷ Extract from the RBGE Corporate Plan 1999/00-2001/02

¹⁸ Extract from the RBGE Corporate Plan 1999/00-2001/02

3. To curate, maintain and develop, efficiently and cost effectively, the national heritage collections of living and preserved plants and fungi, and the documents associated with them, and to promote and facilitate access to and use of these collections. (As described below, the collections underpin much of RBGE's scientific research programme and an interactive relationship between research and curation is promoted).

4. To promote the public and professional understanding and appreciation of science, and plant science in particular, through access to its collections, public and schools education, training, exhibitions, and the provision of information, using the most appropriate methods - human and technological. This access is enhanced by the setting of its living collections in surroundings of high public amenity and visitor attraction at all four gardens.

5. To manage its resources efficiently and cost effectively in following the excellence of its research and other activities. As part of this, to develop financial strategies which will generate external income and, thus, diversify the Garden's income base with the aim of expanding its programmes. Recognising that its staff, one of its key resources, it will continue to promote policies and practices which set a high standard of staff, management and development.

The Plan provided some KPIs (not related to any specific objectives) but without any targets assigned to them:

- “External and internal Peer Review; report of the science Visiting Group, the review of Corporate Services Division, and Science and Conservation Advisory Group, and a strategic plan for Science.
- Improved internal management of staff and resources through the development of a financial strategy, Staff Handbook embodying a raft of personnel policies, achievement of Investors in People recognition within the Plan period.
- Demonstration of value for money through an activity based accounting system (resource accounting), development of IT for efficient and secure

financial systems, and other appropriate measures in line with Phase II of the Policy and Financial Management Review (PFMR)¹⁹.

- Annual statements, Annual Accounts, Annual Report, Annual Business Plan, and reports of external and internal auditors.
- Measures of quantity, quality and impact of publications by its staff and associates.
- Number of quality, and relevance of research grants, editorships, paper refereeing, committee memberships and other measures of influence and activity.
- Increasing the numbers of external researchers working in RBGE of collaborating with our RBGE staff.
- Statistics striving state and use of its collections.
- International ranking of the collections in terms of size, range, quality and frequency of use.
- Courses run, examination results, career placements, exhibitions prepared and mounted, course attendance figures, feedback.
- Ability to influence national and international policy-making, either directly or through relevant professional organisations²⁰.

The succeeding sections focused on the operational nature of the functional areas and provided some more detailed activities that were to be undertaken within each area. No measureable targets were listed against any of these PIs and, therefore, it would not be possible to gauge whether success had been achieved or not. The corporate structure, with a growing number of committees (compared to the 1996/97 structure) which would assist the Board and Director in their deliberations with the provision of advice, recommendations, and with suggestions for future options, is shown below in Figure 22 below.

¹⁹ PMFR was an independent review of the Non Public Departmental Bodies carried out by Government every 5 years.

²⁰ Extract from the RBGE Corporate Plan 1999/00-2001/02

Figure 22 RBGE Corporate Structure 1999

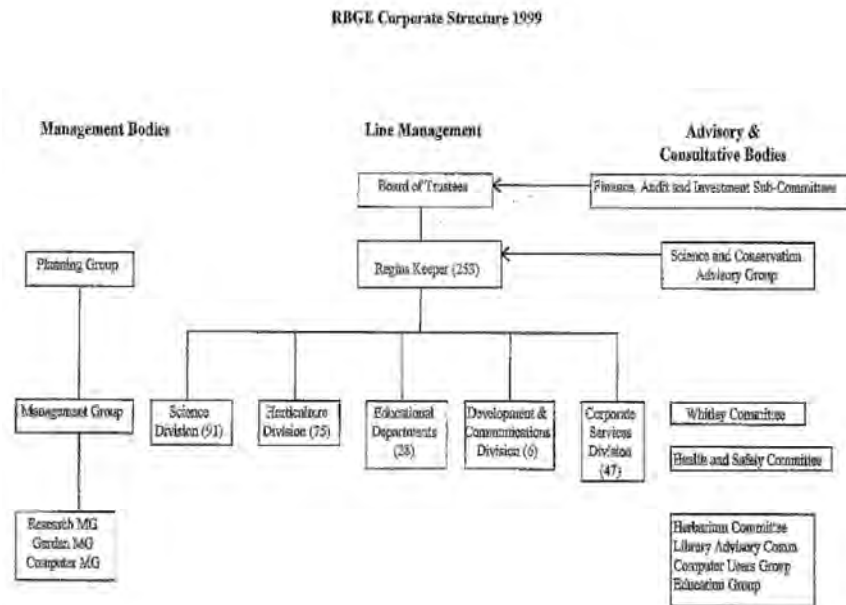
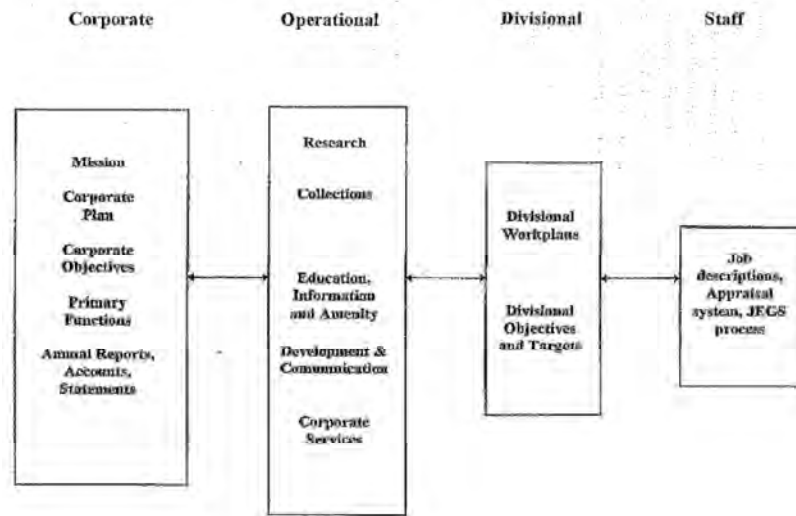


Figure 23 below shows how the planning process was supposed to work tracking from corporate objectives to individual job descriptions²¹. Had this actually been realised, then a significant step towards organisational alignment would have been achieved.

²¹ Extract from RBGE Corporate Plan 1999/00-2001/02

Figure 23 RBGE Planning Process Showing Alignment to Staff Level



Note: JEGS is the Job Evaluation and Grading System to set job and pay grades

The plan was internally focused as all objectives and KPIs were about what the RBGE would do, not what its audiences had requested or required. This was largely due to the notion that the Corporate Plan was a rehearsal of what was being carried out through its principal activities rather than a strategy for the future. The Corporate Services Division was given a range of objectives to achieve to comply with best practice but there was no general linking of these objectives to an overall strategy. As in previous editions of the Corporate Plan, there did not appear to be any targets to measure progress.

In the view of the authors (Acting Director and Head Librarian)²² the previous Plans established the planning process as being useful in focusing the Board's attention on priorities and RBGE's attention on internal management and operational matters. The Plan (1995/96-1999/2000) established the principle of setting out clearly defined objectives, with measurable targets and outcomes; the second (1996/97-2000/2001) developed the process and was more specific in recognising individual

²² RBGE Corporate Plan 1999/00-2001/02 page 10

responsibility for achieving objectives, and for the first time explicitly identified externally funded contributions to particular projects. The third and fourth Plans (for the periods 1997/98-1999/2000 and 1998/99-2000/01) were developed in draft and discussed with the Scottish Office but not published. The structure of the fourth Plan was used as a framework for the 1999/2000-2001/2002 Corporate Plan. This Plan was founded on high-level corporate objectives developed through discussions with Scottish Office government staff. However, despite the optimism of the staff at the time about progress being made, there was no evidence of the Plans being put to any use, nor were there any targets set against them to measure progress. The impression given by the writers of the Plans was that despite considerable efforts applied in setting up a planning process (similarities exist with Mintzberg's Planning School concept (Mintzberg 1987) over some 12 years, the work had been put on hold awaiting the incoming new management team to take the process on and develop it (this view was also stated separately by both Dr Alexander and Professor Mann). Moreover, there were a number of events that would influence strategic thinking over the coming years: External and internal peer review; Reports of the Science Visiting Group; The review of Corporate Services Division; The report from the Science and Conservation Advisory Group; The development of a Strategic Plan for Science.

On 1 October 1999 the newly appointed Regius Keeper (Professor Stephen Blackmore) took up post. One of his first tasks was to appoint a Director of Corporate Services on 15th October 1999 (the researcher) who took up post on 5th January 2000. Prior to this appointment the post had been gapped for a period of six months and had been filled as an interim measure by the Head Librarian, the principal author of the recent draft Corporate Plans. It was agreed that the Head Librarian would retain his responsibilities for the Corporate Plan until he retired some 12 months later.

Botanics 21 – A Strategic Review

One of the early activities the new Regius Keeper undertook was a strategic review of the RBGE involving a cross-section of staff. The review took place over a period of some 5 months. By consulting with staff the Regius

Keeper was able to obtain input from multi-levels of staff to better understand what it was the RBGE staff considered as their priorities. Subsequently he set down the vision for the RBGE for the next few years. This was the first time that such an exercise had been conducted at RBGE and its aim was to prepare the RBGE for the 21st century; appropriately the resulting document was entitled “Botanics 21”²³. It set down the future direction of the RBGE based on discussions that took place earlier in the year with staff and the Board of Trustees. The vision encouraged RBGE to flourish as a place of inspiration and creativity, offering a distinctive mix of research, conservation and education that explained and celebrated the rich floristic diversity of the planet. A commitment was made to share the institution’s sense of excitement, and concerns, as they discovered and documented the world of plants. Many of the challenges required accurate and intelligible information about species and their properties, including their distribution, their relationships, status in the wild and their requirements for growth. To continue to generate and develop this knowledge would require the maintenance of expertise and excellence in horticulture and in systematics of plants and fungi and collaborate with appropriate institutions in Britain and around the world. In particular, they (RBGE) would conserve and enhance the living, preserved and literature collections fundamental to their research, conservation and educational activities. In all of these activities they would aim to innovate, while maintaining a focus on traditional strengths. The stated aim was to address issues of concern to society and communicate their discoveries to the wider public. Visitors to the RBGE’s four sites should be able to enjoy increasingly well interpreted living collections and a mix of events and exhibitions spanning science and the arts. In addition to its role in public education, the RBGE was committed to a leading role in training future generations of professionals in horticulture and systematics. The review did not address what was expected from Corporate Services Division but it was anticipated that the Division would provide the necessary professional and

²³ **Botanics 21:** The Royal Botanic Garden Edinburgh in the 21st Century; May 2000

technical expertise to support the principal outputs of the RBGE. Botanicus 21 defined a future vision which had been communicated widely to staff.

The RBGE was sustained by Government Funding (Grant-In-Aid) which provided a baseline funding mechanism. It was recognised, however, that the Institution's contributions were constrained by resources. Consequently, there was a need to secure additional resources from an ever-widening base of support to meet these challenges.

Although the RBGE recognised that resources were a necessary facet of institutional life and there were insufficient resources to fulfil its ambitions, it did not set out to match current and potential resources to activities that would accomplish the vision. This inability to resource the Plans adequately (a market-based view of strategy) or match activities to available resources (resource-based view of strategy) was to prove a major issue for the management team for many years (and still continues to dominate their thinking). Botanicus 21 did not attempt to provide a mechanism for planning or executing strategy utilising any framework or performance management structure that would also deliver an insight into the costs of achieving its individual objectives, as had been requested by the Scottish Office. Consequently, the problem as defined earlier remained and a solution was required to be found to overcome these difficulties.

Corporate Plan 2000/01-2002/03

In 2000, the mission statement remained the same as in the previous year. However, the number of strategic objectives increased to eight as follows:

Collections, Research, Plant Conservation, Education, Plant Services, Organisational Development, Income Generation, Management.

These were influenced by the output from Botanicus 21 and for the first time set down some Specific, Measurable, Attainable, Relevant, and Time-bound (often referred to as SMART) measures with associated timelines. Interestingly, Corporate Services Division were tasked with introducing an Activity Based Costing system, which fortunately turned out to be a misnomer for accruals accounting for which the RBGE's first professionally qualified accountant had been appointed. The term "fortunately" is used

advisedly as the accounting system was extremely immature at that time and the organisation was certainly not ready for such a major change such as the introduction of Activity Based Costing for reasons outlined in the literature review (Innes and Mitchell (1998)). However, it did signal the Scottish Executive's desire to see activities costed (since devolution in 1999 the Scottish Office no longer existed and the Scottish Executive became the collective name for referring to Scottish Ministers and their civil service staffs).

Situation prevailing at RBGE when Researcher took up post

This was the first year that the researcher took responsibility for the planning process and began to introduce some new strategy management concepts. However, the scope was very limited as financial resources had been identified as being at a critically low level and much effort was expended in dialogue with the Scottish Executive Environment and Rural Affairs Department (SEERAD), the new name for RBGE's sponsoring department after devolution, to secure essential funding levels rather than worrying about a Corporate Plan that appeared to serve little purpose. Although the researcher had previous experience of authoring corporate plans he recognised that the prevailing attitude to corporate plans was that many staff at the RBGE believed that any effort devoted to writing corporate plans would be wasted due to the relationship with the Scottish Executive officials and that no attention was paid to them by either staff at RBGE or by the officials. Although some improvements could be made to the plans by way of structure and content to make them more meaningful, and perhaps more useful in the dialogue between the RBGE and SEERAD, this was a task that would have to wait for a time when sufficient effort could be devoted to the task. The sections below describe the incremental improvements made to the planning processes and the construction of the plans but they did not attempt to solve the problems identified above.

Corporate Plan 2001/02-2003/04

It is clear from the introduction phase to Corporate Plan 2001/02-2003/04 that Botanic 21 had a significant influence on the direction of the Institution and in formulating the rationale behind the principal objectives. A change

from previous Plans was the articulation of forward-looking objectives that reflected the purposes of the organisation rather than to rehearse administrative processes which were required for management purposes. Nevertheless, the objectives remained internally focused in that they described what the Institution would do or actions it would carry out to satisfy its own ambitions as defined by its own interpretation of its purposes set down in the Act²⁴. However, there was a demonstrable mapping to the Scottish Executive's Programme for Government: *Working Together for Scotland*²⁵, albeit based on an internal interpretation of that programme. In 2001 the mission statement was revised to: "To explore and explain the world of plants" in an attempt to simplify the statement and make it more memorable for staff and to encourage their engagement with the idea. A vision for the future was introduced drawing from work carried out for Botanic Gardens Scotland and a section on what the RBGE contributed to society was included for the first time. This indicated that the new management team were aware that the RBGE's strategy had to relate to the external environment as well as being inwardly focused. Indeed, the Plan made connections to strategies belonging to relevant external bodies²⁶. Eight strategic objectives were set, some reflecting those from previous years and some with a new emphasis and were as follows:

Collections, Research, Plant Conservation, Education, Plant Services, Visitor Services, Infrastructure, Income Generation.

The Plan went into considerable detail at Divisional level about each objective (which had as their basis the remit described by the constituting Act, its rationale, which staff were responsible for its delivery, and associated performance measures. In some cases targets were provided, and the mapping exercise from each division to the corporate level objectives and Scottish Executive was also carried out. Although a lot of work was involved in producing this Plan much of the information had been prepared for the previous Science Visiting Group (a Peer Review held in 1997) and

²⁴ The National Heritage (Scotland) Act 1985

²⁵ RBGE Corporate Plan 2001/02-2003/04 page 8.

²⁶ RBGE Corporate Plan 2001/02-2003/04 pages 2-5.

then updated. The Corporate Plan, whilst starting to include ideas that would be built upon in the future (mapping, PIs, external environment assessments), was beginning to become rather too long to encourage engagement by staff. Scottish Executive commented²⁷ favourably on the efforts made on introducing financial management and budgeting processes but raised concerns about the perceived lack of prioritisation of RBGE's output activities (Science, Horticulture, and Public Programmes). Whilst it was understandable that such criticisms were levelled at the RBGE the context needs to be understood as these activities had never been subject to financial accountability or prioritisation in the past. This was a new discipline being imposed on the RBGE at the time with no clear guidance as to what should or should not be included in the Plan going forward. Additionally, most of these activities were difficult to quantify or evaluate for effectiveness. The Scottish Executive took the view that this was a matter for the Board of Trustees, but they had no previous experience of managing such issues either.

Senior Management Group Planning Conference – September 2001

The Senior Management Group Planning Conference held in the Autumn was the first of an annual series that was to continue into the future comprising: directors, deputies, and head of development (fundraising). The purpose was to increase engagement with strategic matters by widening the group who would be concerned with such matters. Additionally, ideas could emerge that otherwise would be unlikely with a smaller group. Furthermore, those attending the conference each had responsibilities for implementing the resulting strategy within their own disciplines/areas of responsibilities. The process of deliberate engagement had started.

Annual Management Report 2001/02

The Annual Management Report was a document that was required by Scottish Executive and was the performance report for the RBGE for the Financial Year 2001/02. It provided a short narrative against performance of the strategic objectives and some measures which were SMART and for

²⁷ SEERAD Letter: LAL00809 dated 6 September 2001

which data had been collected but others remained as a qualitative assessment due to a lack of alternative data. A Business Plan had been produced which was in essence the first year of the extant Corporate Plan. This report was produced in July/August of the following Financial Year and served merely as a report and not a management tool to assist with strategy execution/management.

Corporate Plan 2002/03-2004/05

The Corporate Plan 2002/03-2004/05²⁸ built on the previous Plan (and Botanicus 21) by establishing a Campaign Board to assist with fundraising, introducing a risk management process for the first time and preparing for the Peer Review to be held in 2003. The mission statement remained the same as in 2001 and the strategic objectives were changed slightly to reflect the deliberations of the planning conference held earlier that year, with a new environmental objective being added:

Collections, Research, Plant Conservation and Sustainable, Development, Education and Public Awareness, Specialist Services (relating to plants), Visitor Services, Infrastructure, Environmental Responsibility, Income Generation.

The format and concepts included in the Plan were very similar to that of the previous Plan but the SWOT analysis developed during the Botanicus 21 process was also included. Additionally, a coding structure was introduced to facilitate alignment between the corporate and divisional objectives. A section was included setting down the next steps and priorities for the RBGE and, unsurprisingly, improving the financial situation was a key task. Additional Revenue Grant-In-Aid was made available by the Scottish Executive to assist with the financial difficulties being experienced but this was taken from the allocated Capital Grant-In-Aid and was, therefore, short-termist in nature and damaging to the maintenance of the estate which would have to be dealt with at a later stage at a vast cost.

²⁸ RBGE Annual Management Report dated 14 August 2002

Senior Management Group Planning Conference – September 2002

At the planning conference held at New Lanark Heritage Visitor Centre the Senior Management Group concluded that there was a need: to produce both a Communications Strategy and a marketing plan; to strongly support a new initiative using volunteers in Horticulture Division; to improve financial management and planning by exploring an entirely new budget setting process associated with the corporate planning process (as there were insufficient resources to match aspirations); to develop a capital Master Plan; and to review Visitor Services offerings. Additionally, some decisions were taken about the proposed Visitor Gateway for which planning had already started (a £16m project under the direct management of the researcher for the next 8 years).

Annual Management Report 2002/03

The Annual Management Report 2002/03²⁹ provided a brief summary of achievement against a set of Performance Indicators related to the principal corporate objectives. They were, in all cases, a qualitative assessment grading of each Performance Indicator as either: excellent, satisfactory, or unsatisfactory. An explanation was given for the grading, outlining successes and improvement opportunities. Whilst there were targets set they were not all SMART in nature. Moreover, as the Annual Management Report was produced in July (as required by the Scottish Executive) this document could not serve as a management tool for the reasons described above.

Corporate Plan 2003/04-2005/06

The Corporate Plan 2003/04-2005/06 was very much a revamp of the previous year with some updated key priorities listed. Much of the Corporate Plan in this and the previous two versions gave considerable detail about the RBGE as an organisation, its aspirations and how it related to the external environment. This had been necessary as there was a view held by Senior Management that the sponsoring department (SEERAD) had little

²⁹ RBGE Annual Management Report dated 30 July 2003

idea what the RBGE actually did for Scotland and the world at large. This led to a somewhat long and unwieldy document and it was at least one third of the way through before a reader could divine what the specific Plans were for the forthcoming years.

The PIs were becoming more explicit but as yet only some targets were inserted into the Corporate Plan but not consistently for each objective. This was a reflection of the relative strategic planning immaturity of the combined management group, and the reluctance by some staff members to commit to specific outcomes within a defined period; they were not used to such notions.

Senior Management Group Planning Conference – September 2003

The Senior Management Planning Conference in 2003³⁰ concentrated on how the Visitor Services Team should be organised to better meet the needs of the 700,000 visitors to the four RBGE sites and the general conclusion was that an integrated team would be most advantageous. Other major topics discussed included master-planning the capital project needs for the next 5-10 years; the Corporate Plan and the process for its formulation. The researcher suggested that most senior managers had found some use for the document for directing their principal activities within their divisions but targets were needed to track progress in a more cohesive and positive manner. This conference was much more focused on strategic matters and it was clear that strategic maturity was developing within the Senior Management Group.

Annual Management Report 2003/04

During 2003/04 the Annual Management Report³¹ comprised a narrative on key achievements and KPIs for each objective with quantitative measures that had been achieved provided in the report. This was a major step forward in that a baseline for succeeding years was now available although, once again, these KPIs were reported some months after the year to which

³⁰ Minutes of the Senior Management Group Planning Conference 2-4 September 2003.

³¹ RBGE Annual Management Report 2003/04 dated 6 August 2004

they related had ended. In other words, they provided a useful backwards-looking report but were not available during the year to assist with keeping the strategy on track. What had been achieved, therefore, was a performance reporting system but not yet a performance management system.

Corporate Plan 2004/05-2006/07

The Corporate Plan 2004/05-2006/07³² changed its format in that it did not contain the considerable detail explaining what the RBGE was, its SWOT analysis, or any other detail justifying its existence. The Scottish Executive had conceded that they now knew what the RBGE was about and thus the Plan could concentrate on its strategic and operational objectives. Consequently, the length of the Plan reduced from circa 80 pages to some 50. The corporate objectives remained the same as in the previous year and a table cascading the principal corporate objectives into sub objectives at divisional levels was provided. A lot of detail was provided at divisional level as to how the objectives were to be achieved, listing several PIs but no targets were set in the Plan.

Summary of the Problem

Corporate Planning had commenced in RBGE in 1988 shortly after it became a Non Departmental Public Body. Some guidance had been issued to the RBGE by the then Scottish Office but it was too generic in nature and, therefore, proved to be of little value to the staffs at RBGE. This became a source of irritation and frustration to RBGE staff as they could not produce Plans that were of use to both the RBGE and Scottish Office without attracting criticism from the latter. There was no sense of collaboration between the RBGE and Scottish Office officials yet the RBGE staff felt this exercise was solely for the benefit of the Scottish Office. This attitude, portrayed by Scottish Office officials, probably set back the effective development of the corporate planning process at RBGE by years as the RBGE staff became disillusioned. Even so and despite that setback much effort was expended by the senior staffs selected to develop the Corporate Plans and supporting divisional strategies which would inform future work

³² RBGE Corporate Plan dated November 2003

and, importantly, serve as useful communication devices for internal consumption. It was clear from the interviews carried out that staff members did find the documents useful and learned much about their organisation and what activities other than their own were carried out. Demands had been placed on the RBGE to produce information about how much activities cost. There was a presumption by Scottish Office officials that by demanding that an accruals-based accounting system be installed this would produce such information. This indicated their lack of understanding of how the RBGE functioned as an organisation or knowledge of accounting systems in general.

The RBGE was willing to produce Corporate Plans but lacked the necessary framework to achieve that task in an efficient and effective way. However, there was no presumption by RBGE staffs that the corporate planning process would lead to a performance management system that would track progress periodically throughout the year. There was, in fact, a belief that the annual performance report would suffice. There was no recognition that changing circumstances could adversely affect plans in year that had been set many months earlier.

Conclusions from Understanding the Problem

The review of the early corporate planning processes at the RBGE indicated a willingness to participate from the senior managers in the organisation. However, what became apparent from the documentary analysis and triangulated from interviews by key staff involved at that time was that they suffered from a lack of clear understanding of what was required of them. There was an expectation that DAFS staff would provide the necessary clarity but when that was not forthcoming the RBGE managers provided what they considered relevant but when that did not meet with universal approval then frustration set in from both sides of the divide – RBGE:DAFS. There was an abundance of material contained in the draft plans but what was missing was some logic to the synthesis of the plans which came from the divisional levels up to the corporate level. In most cases the plans rehearsed what work was being carried out but there was little evidence of plans for the future at corporate level, even although some effort had been

made in the 1990s to achieve that goal, but at divisional level only. What was missing was an understanding amongst the senior staff that the divisions set up in RBGE had to work together to achieve the overall corporate strategy of RBGE as an entity. In other words there was a top down approach to formulating the strategy which turned out to be a cosmetic exercise as the planning exercise did not achieve anything for either the management team or the recipients - Scottish Office officials. Because of the frustrations arising from this failure to communicate effectively downwards (to staff) or upwards (externally) these difficulties manifested themselves in a failure to implement any form of strategy and the organisation simply carried on with its current work programmes with little concern for the future. What was being demonstrated was that strategy formulation and executions are difficult topics to master when new to staff at any level. This phenomenon was predicted from the literature review discussed in the earlier section. Arguably, a reason for these failures was that there was no suitable framework being employed to bring together all the available information in a cohesive and integrated way that would permit a strategy for the future to be formulated, which would also extend to obtaining input from a variety of staff at differing levels of the organisation who had the relevant expertise to contribute on their own subject areas. Whilst there was a form of cash accounting carried out in line with normal public sector practices at that time there was no ability to match costs to outputs contained in the strategy, which in any case were not being measured in any structured way, either on a financial or non-financial basis. What is concluded from this research is that a framework for integrating the various divisional activities carried out at the RBGE would be helpful for guiding and focusing the efforts on developing a Corporate Plan. If this was achieved then the internal staff would be better informed about how their activities contributed to the overall success of the RBGE and there would be a basis for informed discussions with the principal external stakeholder (Scottish Government). Additionally, if a methodology could be identified or constructed that would match costs to objectives then a more rational basis for resource allocation could be put in place to assist senior management with prioritisation of activities and thereby improve the

governance processes at RBGE. This would accord with the literature review.

Introduction to Developing a Solution

This review so far has been a retrospective look at the period prior to developing a solution. The next phase was recorded by the researcher as he worked with staff at the RBGE in anticipation of a proposal to embark on a PhD. It is clear from this review of RBGE planning and strategy management processes that there was an opportunity to make significant improvements if a suitable framework could be identified. In his previous employment the researcher had been trained as a lead assessor for the EFQM Business Excellence Model (BEM) and was, therefore, familiar with its concepts, and its advantages and disadvantages as a framework for an organisation such as the RBGE. Arguably, the BEM takes a wider view of the organisations' stakeholders but some of its perspectives are simply immeasurable in any verifiable way (Neely et al. 2002). Moreover, the framework is rigid in its application as it was primarily designed to be a benchmarking tool. Additionally, a team of assessors would be required to be trained to carry out the assessments and the researcher did not believe that an organisation such as the RBGE would be able to tolerate such an administrative burden. The researcher had become familiar with the concepts of the Balanced Scorecard during his professional management accountancy training with CIMA but did not have any direct experiences of using the framework. The Performance Prism, developed at Cranfield University (Neely et al. 2002), sought to overcome some of the criticisms levelled against the preceding frameworks by taking the superior elements and integrating them into one comprehensive and coherent framework but the descriptions of it appeared to be overly complicated and difficult to follow. It emphasised the needs of all the relevant stakeholders but failed to specify the importance of the employees, which is surprising given how much most organisations vaunt the importance of their staff. At the RBGE, staff members accounted for more than 70% of its cost base and were considered a key asset. Additionally, there was little evidence of common usage of the Performance Prism in the available literature. The researcher had read a number of books and articles on the Balanced Scorecard and had

noted its popularity amongst a cross section of types of organisation which claimed to be able to use it successfully. He considered that of all the popular frameworks available the Balanced Scorecard would be the most likely to meet the needs of the RBGE at that time as a formulation and execution framework. Moreover, there could be an opportunity to develop an effective costing system to support RBGE's strategic management needs by associating a costing system with the Balanced Scorecard. The next part of the research study will examine the work carried out to develop and introduce the Balanced Scorecard at RBGE. The researcher was conscious that to develop the Balanced Scorecard and a supporting costing system it would be necessary to put the building blocks in place first. He was aware that the culture of the organisation would prevent a change of management practices from being a quick achievement.

The next three years were spent by the researcher preparing the Institution to accept that the Corporate Plan could be a useful tool for management and staffs to better understand what its purpose was (of course, this was not his only task and other high priority tasks took up his attention as well as the work relevant to this thesis). Furthermore, if accepted and understood then the Plan could be a unifying process that would utilise scarce resources more effectively by ensuring alignment of staff and sub units with corporate objectives and, therefore, face a common direction.

Document Innovative Practice

Following Kasanen & Lukka's (1993) and Kaplan's (1998) processes for innovative action research the first step was to document the innovative practice, although this phase was in the preliminary stages of the research project whilst the researcher was considering the scope for doctoral research. The development of the Balanced Scorecard at the RBGE started at the Senior Management Group Planning Conference in September 2004 as a result of a paper written by the researcher (see next section).

Senior Management Group Planning Conference – September 2004

The Senior Management Group Planning Conference³³ concentrated on two major topics that year: 1) The introduction of the Balanced Scorecard and 2) The Scottish Executive sponsored Policy and Financial Management Review. For topic 1 the researcher had prepared a paper in advance of the conference to introduce the attending members to the concepts of strategy formulation and how the Balanced Scorecard could assist.³⁴ The paper very much drew upon the works published by Kaplan and Norton (1992, 1996, and 2001) and Niven (2003). The principles of the paper were accepted by the Group and a lengthy discussion took place to decide on the names for the various perspectives that would be most apposite to the RBGE. The very fact the Senior Management Group were discussing the names of the perspectives indicated that they had not rejected the notion and, indeed, were engaging with the concept of the Balanced Scorecard, which was encouraging in itself. Adapting the names of the perspectives to better reflect the purposes of the RBGE had greatly assisted the process of acceptance as the Group could see that what was conceived as a commercial business tool could have applicability to a public sector organisation such as the RBGE. This exercise was very much guided by the researcher and what was interesting was that although it took some time before the group grasped that the purpose of the RBGE was not simply to provide a facility for them to carry out their work but to serve external stakeholders with the outputs of their work. Satisfactory outcomes were required and needed to be articulated to the end-users. Whilst the staff understood that scientists delivered papers to peers and, therefore, knowledge exchange occurred they had not fully considered that the principal funders expected some return and

³³ Minutes of the Senior Management Group Planning Conference 7-9 September 2004

³⁴ RBGE – Strategic Planning and Performance Measurement: The Balanced Scorecard – A Strategic Management Tool; Alasdair Macnab, dated 28 August 2004.

that there were activities that served the external stakeholders other than just the scientific outputs; e.g. visitors, in particular, had a right to expect modern standards of services, rather than what could then be described as a passive approach to visitors that pervaded the Institution. The whole Institution had a role to play but at the time each Division appeared to pursuing its own agenda based on previous practices. A successful outcome from the conference was an increased realisation that the RBGE's strategy required a holistic perspective and to succeed each Division had to work together in a cohesive and coordinated manner to leverage maximum potential from the limited resources available. Additionally, there was still a deficiency in prioritisation of activities within and between the various functions of the RBGE.

A decision taken at the September 2004 Senior Management Group Planning Conference was that the researcher was to take forward the development of the Balanced Scorecard for the RBGE, taking into account the discussions held about the strategy for the organisation and what was to be included in the scorecard design. Although the Kaplan and Norton 1992 model had been devised as a performance measurement framework the researcher had used the Balanced Scorecard framework to assist with strategy formulation by encouraging adaptation of the names of the Balanced Scorecard's perspectives. This permitted the Senior Management Group to formulate their corporate strategy using a framework that guided them to a logical conclusion from their deliberations as they were able to start answering the questions about who they were providing services to, and by questioning or better understanding the activities that collectively would provide such services. Additionally, they would be more informed about the available resources and the management processes in place to assist with overall coordination and direction.

Corporate Plan 2005/06-2007/08

The Corporate Plan 2005/06-2007/08³⁵ was a document which was significantly reduced in size from that of the previous year and now

³⁵ RBGE Corporate Plan 2005/06-2007/08 dated 22 November 2004

comprised only 32 pages plus Annexes. It provided the background and purposes of the RBGE, described the governance and management arrangements, and its assets. The Plan reiterated the context for change and mapped RBGE's goals to the Scottish Executive's programme for Government: *Working Together for Scotland*³⁶. It described how the RBGE could respond to seven of the Scottish Executive's initiatives: SEERAD's Strategy for Agriculture, Biological and related research; the Nature of Scotland; Rural Scotland – A New Approach; The Scottish Science Strategy; Electronic Government; the Cultural Strategy for Scotland; and the Scottish Biodiversity Strategy. It also placed the RBGE in both the national and international context. A new section in the Plan for that year was a description of the Balanced Scorecard methodology. Emanating from the Senior Management Group Planning Conference was an analysis of who were the end-users of the RBGE. This analysis had been informed by the work on the Balanced Scorecard at the conference. The end-users which had been identified for the Audience perspective (a substituted name for Kaplan's "Customers" perspective) fell into six groups: the General Public, Scottish Government, International Governments, the Science community, the Horticultural community, and the Conservation community. The Plan also identified some values and a vision statement to drive staff engagement with the process.

The independent Policy and Financial Management Review conducted by DTZ Peda Consulting also concluded (page 35)³⁷ in their Findings on Objective Setting that: *"The new "Balanced Scorecard" approach for Corporate Planning should assist RBGE SMT and SRG in agreeing priorities between activities across different directorates of the business"*.

³⁶ RBGE Corporate Plan 2005/06-2007/08 dated 22 November 2004 page 15.

³⁷ SEERAD PFMR RBGE Final Report Version 1.2 dated 15th March 2005.

The Values statement (developed by the researcher) employing the acronym “GARDEN” (see Figure 24 below) proved to be popular and was used in subsequent management courses at the RBGE led by external facilitators.

Figure 24 RBGE Values Statement

- **Global** - we operate in many overseas countries as well as in Scotland.
- **Accessible** - we are open and accessible to all sectors of society.
- **Responsible** - we take our duties and obligations to society seriously.
- **Definitive** - our skills and knowledge make us an authority on our subject.
- **Excellent** - we strive to be world class in all of our activities.
- **Nurturing** – we develop our collections, our staff, and students.

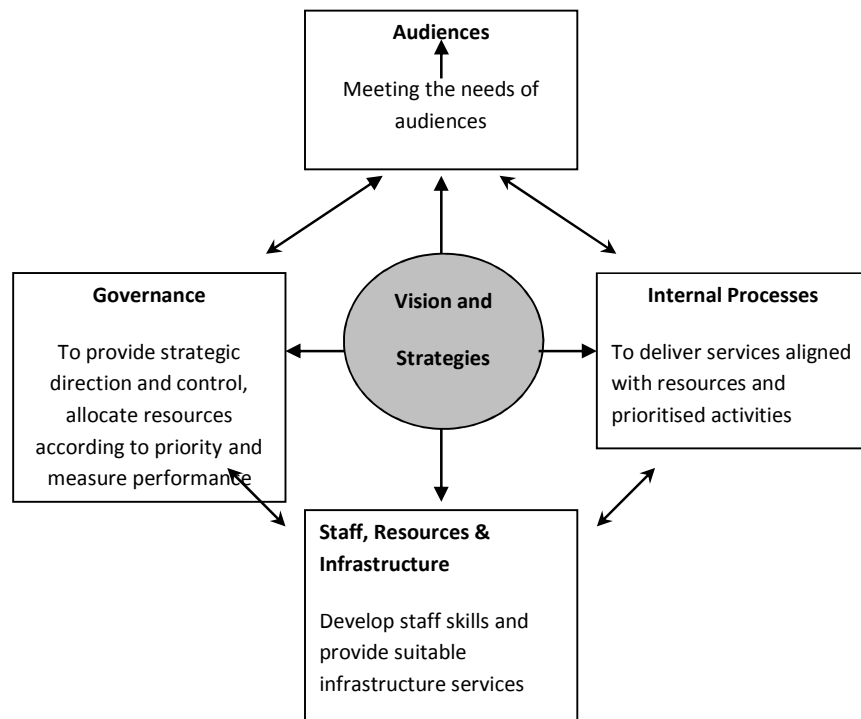
The Balanced Scorecard, which was very much influenced by the Niven (2003) adaptation of the Kaplan and Norton (1992) model, was developed at the conference and is shown at Figure 25 below and was included in the Corporate Plan 2005/06-2007/08.

By using the Balanced Scorecard framework four principal corporate strategies were developed:

1. “To provide expertise and services to a range of users that meets their expectations.
2. To deliver services aligned with resources and prioritised activities.
3. To develop staff skills and provide suitable infrastructure services and support.
4. To generate sufficient income to support our activities and ensure long term viability”.³⁸

³⁸ RBGE Corporate Plan 2005/06-2007/08 dated 22 November 2004 page

Figure 25 RBGE Balanced Scorecard 2005-2008



This Balanced Scorecard was very different from the more conventional version developed by Kaplan and Norton in 1992. The reason for this was that the senior management at RBGE at that time had an antipathy to using what appeared to be business terminology. Therefore, the researcher took the liberty of encouraging the Senior Management Group to choose the perspective labels that were more meaningful and acceptable to them as described in the section above on the Senior Management Planning Conference held in September 2004. After all, Kaplan and Norton (1996) had indicated that “one size did not fit all” and the scorecard should be adapted to suit the needs of individual organisations although there was little assistance provided in the literature on how to do that. Mentioned in the section describing the research framework the researcher indicated that he had been trained in the EFQM Business Excellence Model and he believed that some of the enablers and results factors were highly relevant to organisations such as the RBGE. It can, therefore, be seen that the RBGE Balanced Scorecard above was significantly and unashamedly influenced by that previous experience.

These high level objectives were then cascaded in much more detail to the Divisions which were to implement them and these were described in the succeeding pages in the Corporate Plan (pages 24–28). A section followed on the purposes of performance measurement and explained that the Balanced Scorecard was a framework to facilitate strategy formulation and to associate targets and measures with the strategic objectives. The concept of cause and effect linkages between objectives was also introduced at this stage (page 30).

Activity Costing

Following on from a principal recommendation contained in the Policy and Financial Management Review Report (PFMR) by DTZ Piedad Consulting³⁹ (DTZ) a project was initiated to identify the cost of carrying out RBGE's activities, with the researcher leading the project. Scott Moncrieff, a medium sized firm of chartered accountants and consultants were engaged to assist with the process with their costs being met by SEERAD. The project was entitled the **Strategic Planning Resources Implementation Group (SPRIG, making a botanical link)**⁴⁰ and future additional funding allocated by Scottish Ministers to the RBGE was dependent on the process being completed satisfactorily. Its purpose was to review all the recommendations arising from the PFMR and where practicable, and in discussion with principal stakeholders, determine how best to implement these recommendations. Additionally, and importantly, the main output from the SPRIG would be a fully costed and agreed Corporate Plan which would indicate how resources had been aligned to objectives and supporting activities. It was essential that the planning exercise encompassed all aspects of RBGE's work so that the resulting Corporate Plan was comprehensive. The work programme outlined by DTZ in the PFMR focused on some specific areas of policy development or activity but did not encompass all areas (for example, it did not refer to research). The Balanced Scorecard approach was adopted as an appropriate way of linking the

³⁹ SEERAD PFMR RBGE Final Report Version 1.2 dated 15th March 2005.

⁴⁰ Terms of Reference for SPRIG are replicated at Annex A.

activities and resources to user communities (an external perspective which would be developed at a late stage). It was also agreed that there were no areas of activity in which RBGE was contributing above a desired minimum. The deadline for completion of the planning exercise was the end of October 2005 with a final draft ready for the Board meeting on 5th October. This was necessary for determining further proposals for additional Grant-In-Aid for Financial Year 2006/07. The draft was submitted to the Board on the due date and approval was given for the work completed up to that point.

The project followed a logical sequence which ensured that the final strategic plan was robust and readily understandable by all stakeholders. The principal steps included:

- Clarification of key corporate and ministerial objectives reflecting the varied demands placed on the RBGE's resources.
- Development of draft divisional strategies directly linked to the above objectives.
- Development of a resource allocation model based on current activities and resources.
- Consolidation and prioritisation of divisional strategies highlighting new or ceased activities.
- Board and ministerial approval of strategic priorities.
- Creation of a detailed strategic plan using the Balanced Scorecard framework reflecting the necessary resource allocation and delivering a practical and fully costed Plan covering the next three years.
-

SPRIG considered during its deliberations the following:

- a) The role of Executive Directors and what formal meetings (if any) they should hold.
- b) The role and composition of Senior Management Group.
- c) The high level objectives, standards, targets and measures which should be set to meet Ministerial priorities.
- d) What corporate objectives (linked to c. above), standards, targets and measures should be included in the RBGE Balanced Scorecard and what resources (costed) were required.

The exercise costed over 100 activities which the staff performed in pursuit of the strategic objectives and took into account associated non-staff direct costs. These were assembled into spreadsheets to form a structure which could be drilled down from top to bottom. The completed spreadsheets confirmed outputs and measures which would appear at departmental level. It was these departmental activities that were to inform future forward job descriptions as they would link through the process to the very top objectives. Subsequently, on the researcher's direction HR amended the personnel appraisal forms to reflect this requirement. Very relevant to this process, capital bids had to demonstrate a clear link to corporate objectives to stand any chance of being funded, either in part or in full. These spreadsheets describing the tasks were passed to Directors and their deputies and then cascaded to Cost Centre Managers and Programme Leaders to be amended or revised and the completed documents returned to the Project Team by 8th November 2005. The assembled Plan was reviewed and necessary adjustments made, budgetary provisions calculated and presented to the Board in December 2005 for final approval before it was submitted to SEERAD for funding. The end result was a very complex set of spreadsheets that accounted for every individual working in the organisation, what they were expected to do by way of servicing objectives, and how much (percentage) time each person anticipated doing so. The percentages of time derived for the exercise were based on staff members' estimates of what they thought they did and no attempt was made to verify subsequently the amount of time that was actually spent on those objectives. It was a forward looking process and there was not any previous experience of this type of estimating carried out by staff to provide a reasonable basis for assessing accuracy of the estimates. The well known difficulties with spreadsheets of maintenance, amending, and updating were certainly going to occur with this system unless a staff member was dedicated to manage that particular task; the resources did not exist to permit that to occur. Furthermore, no thought was given, by the consultants, as to how the process might be used to monitor actual expenditure (staff time) on a continuing basis.

In the end it was concluded that we had developed a sophisticated planning tool but not one that was user-friendly enough to be successful in tracking and measuring actual costs against budgeted costs. No further work in succeeding years was attempted using the tools developed during SPRIG but the notion of time recording and allocating effort to activities had been introduced to the staff and, therefore, if the concept were to return it would no longer be foreign to most members of staff. What this exercise had demonstrated was that whilst some public sector organisations had desires to cost their objectives no relatively simple and robust systems existed to assist. The main difficulty that arose was that staff members operated outside their cost centres when contributing to their objectives and a methodology had to be developed to capture that type of information in a straightforward and unobtrusive way that would encourage, or at least not discourage, participation by a wide section of the staff. The SPRIG exercise confirmed to the researcher that there was considerable work to be done to design a Balanced Scorecard system assisted by a suitable costing process that would deliver a satisfactory strategic planning and performance management system. It had become clear that no suitable solution existed and that simply employing consultants would not deliver the right solution. What was required was some deep research into the issues with novel processes being developed to solve the problems as identified.

Senior Management Group Planning Conference 2005

At the Senior Management Group Planning Conference held between 30th August and 1st September 2005⁴¹ the SPRIG exercise was discussed, and the Balanced Scorecard diagram agreed. Other items discussed were how best to deliver the visitor experience, how to project RBGE's science and to widen the RBGE's audiences. Further discussion on the progress of the Visitor Gateway project (managed by the researcher) took place; these linked back to the discussion on visitors and projection of science. Additionally, work was focused on developing a commercial strategy. The Balanced Scorecard had been instrumental in providing a framework for

⁴¹ Minutes of Senior Management Group Planning Conference 30 August - 1 September 2005 dated 6th September 2005

these discussions and ensuring that there was some cohesion to the planning by integrating the contributions from across all three operational divisions. The Balanced Scorecard assisted the Senior Management Group with thinking strategically for the benefit of the Institution as a whole rather than simply each concentrating on their own areas of expertise.

RBGE Corporate Plan 2006/07-2010/11

The Corporate Plan 2006/07-2010/11 was structured on the Balanced Scorecard shown in Figure 26 below and objective statements were developed. It had also been agreed to add some additional information to the Balanced Scorecard diagram to indicate the major contributing objectives to each perspective.

At the same time as he was developing the revised Balanced Scorecard the researcher had read the literature on strategy mapping by Kaplan and Norton (2004) and decided to produce a similar device for the RBGE because he recognised that although the Senior Management Group claimed to understand the Balanced Scorecard he thought that a more straightforward diagram showing the linkages between the different perspectives would be easier to understand and, therefore, accept. The result is shown in Figure 27 below. The Corporate Plan was shorter in detail but did provide SMART measures against which to assess progress.

Figure 26 RBGE Balanced Scorecard – 2006/07-2008/09

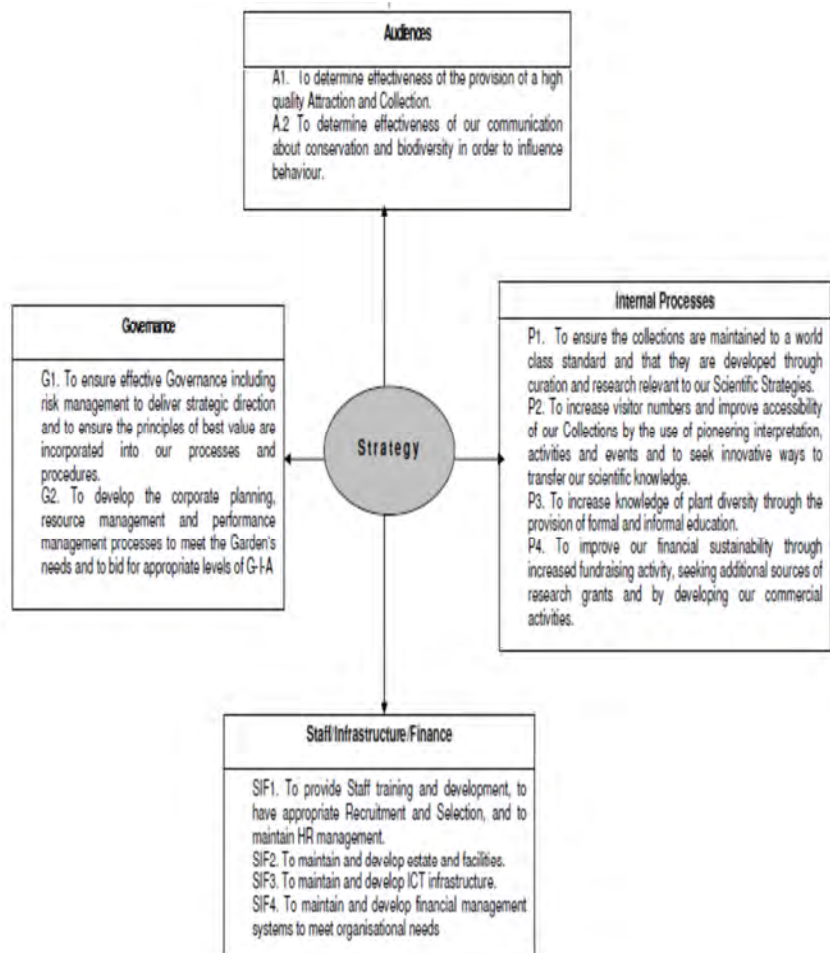
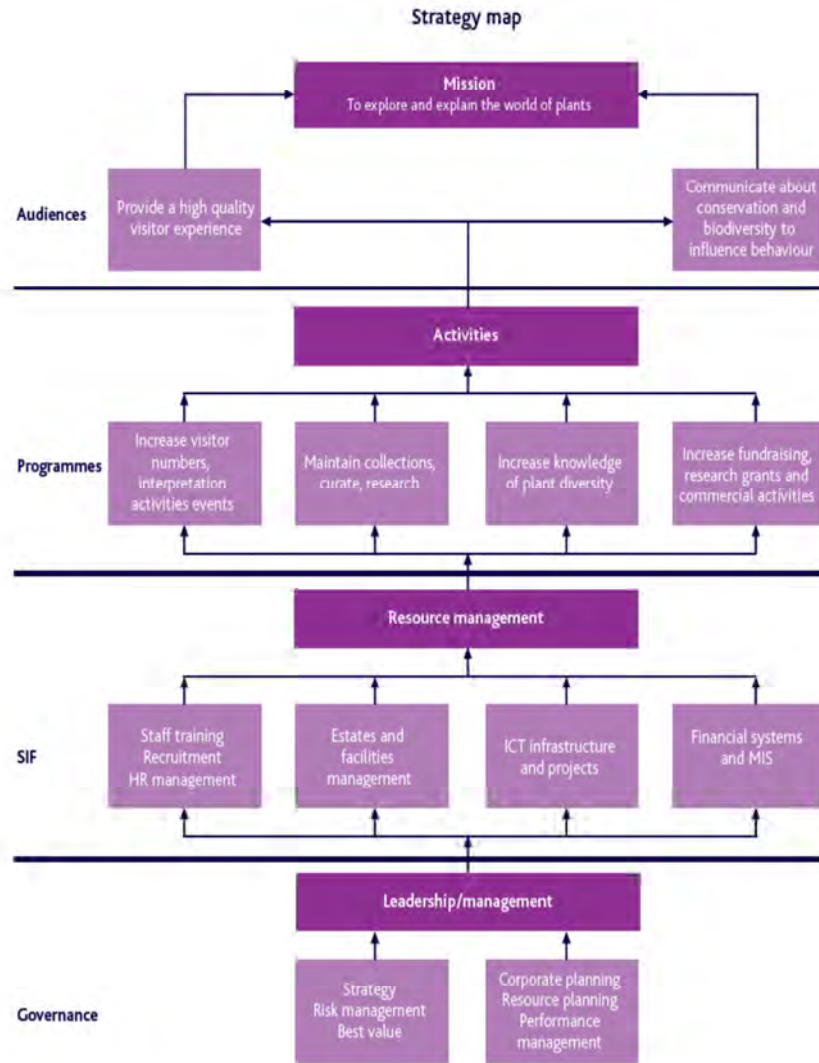


Figure 27 RBGE Strategy Map 2006



Although this device was a strategy map, staff referred to it as the Balanced Scorecard as it became embedded in the vocabulary of the RBGE. This was to prove a useful misnomer as the performance management system to be adopted in later years, although based on the Balanced Scorecard, used the strategy map as its front-end interface.

Senior Management Group Planning Conference 2006

At the Senior Management Group Planning Conference held in Edinburgh from 29th - 31st August 2006⁴² most of the discussions revolved around the visitor offer and how best to service the visitors' needs. By some good fortune the Deputy Minister for SEERAD had released funds (as an in-year capital spend made possible as a consequence of Departmental capital underspends elsewhere in her portfolio) to build a visitor centre at Dawyck Botanic Garden, near Peebles, which is one of the four sites that RBGE is responsible for. This was in addition to the major project ongoing at the Edinburgh site for which the researcher also had responsibility. It is reasonable to conclude that the visitor offer had become a major focus for the Senior Management Group since the initial discussions on who were our audiences provoked by the development of the Balanced Scorecard in 2004, which had reflected earlier aspirations developed in Botanics 21. In the past, the RBGE had perceived itself as primarily a scientific institute which let visitors in but they had no special attention paid to them; this was reflected in the lack of facilities and effort at welcome and explanation. Visitor related issues raised during Botanics 21 had now come to the fore and were seen as strategically important to the future wellbeing of the RBGE.

RBGE Corporate Plan 2007/08-2011/12

The Corporate Plan 2007/08-2011/12⁴³ developed the objective descriptions giving more detailed explanations as to how the Plan would be implemented. Because the strategic objectives were unchanged the Balanced Scorecard and strategy map remained the same as those developed for the previous Corporate Plan. The Plan's principal focus was developing the detailed thinking for the major strategic initiative – the Visitor Gateway at the Edinburgh site upon which so many hopes were being pinned: commercial income, education, interpretation, and projection of science to a wider audience.

⁴² Minutes of Senior Management Group Planning Conference 29-31 August 2006 dated 25 September 2006.

⁴³ RBGE Corporate Plan 2007/08-2011/12 dated November 2006.

Researcher Embarks on PhD

Much of the previous work carried out by the researcher on the Balanced Scorecard had been a precursor to the doctoral research. The researcher was aware that his research methodology was likely to involve implementing novel solutions and to gain the maximum benefit from that research activity some groundwork was required to be put in place. Although the researcher had been intimately involved with introducing the Balanced Scorecard to the RBGE and overseen its early development much of the work carried out to that point had been based on Niven's (2003) adaptation of the Balanced Scorecard for the public sector and then Kaplan and Norton's (2004) work on strategy maps. The researcher wished to research the ability to make significant adaptations to the scorecard to suit the particular needs of the RBGE and associate a performance measurement system that lent itself to a suitable costing system that would improve the RBGE's performance dimension of governance. None of the work undertaken so far could provide a satisfactory solution to that problem, albeit it provided a good grounding in the issues that faced the research objective and informed the thinking of the researcher in the years to follow.

Senior Management Group Planning Conference 2007

The Senior Management Group Planning Conference held in Haddington (near Edinburgh) in 2007⁴⁴ was primarily concerned with revisiting the strategy and updating it where required. The process was informed by a paper on strategy development by the researcher⁴⁵ issued in advance of the Conference to guide the Group in its deliberations. This paper also proposed linking strategy and planning to budgets in order to permit a more rational allocation of resources. The idea was to hypothecate funds to the strategic initiatives being proposed but for which funds were not being set aside in favour of routine expenditure. This was also an issue that had been

⁴⁴ Minutes of Senior Management Group Planning Conference 4-6 September dated 7 September 2007.

⁴⁵ Strategy Development for the Senior Management Group Planning Conference – September 07; Alasdair Macnab dated 10 August 2007.

identified by Kaplan and Norton in their article on Strategic Expenditures in Harvard Business Review, December 2008, p28.

Prior to the Senior Management Group Planning Conference the researcher had investigated performance management software tools that could relate directly to RBGE's strategy and its execution. Several systems were reviewed but the researcher eventually favoured an application known as Executive Strategy Manager™ (ESM) developed by the Palladium Group. In preparation for the Conference the researcher had obtained a free trial version to populate to a limited extent for demonstration purposes. It is worth noting that, if adopted, this system would have been the first attempt at managing strategy execution throughout the year, thereby instigating a very significant culture change within RBGE as much more transparent accountability would result.

The Conference followed the researcher's paper on strategy formulation and accepted the proposal to buy into the performance management system (ESM). It was also decided that the Corporate Plan should be for a period of 5 years rather than the more traditional three years to allow for longer term planning with regards to major capital projects.

RBGE Corporate Plan 2008/09-2012/13

The Corporate Plan 2008/09-2012/13⁴⁶ introduced the concept of strategic themes which had resulted from the researcher's studies of the relevant literature. These were to: Increase Responses to Global Environmental Challenges; Increase Income; Increase RBGE's Environmental Sustainability; and to Improve Visitor Offer (page 4 of the Corporate Plan). At the researcher's suggestion Strategic Delivery Groups were to be formed from staff within the RBGE to take forward these themes and also to engage more staff with strategy – this would allow for emergent strategies in addition to deliberate strategies to inform the Senior Management Group's thinking on resource allocation priorities. For the first time in the Corporate Plan (page B-1) the RBGE was able to map its strategic themes to Scottish

⁴⁶ RBGE Corporate Plan 2008/09-2012/13 dated April 2008.

Government's Strategic Objectives (Figure 28 below) which had been developed by the new administration (Scottish National Party) and issued earlier that year. Both the Balanced Scorecard (Figure 29 below) and Strategy Map (Figure 30 below) were also updated to reflect the outcomes of the Planning Conference.

Figure 28 Scottish Government's Strategic Objectives Mapped to RBGE Strategic Themes

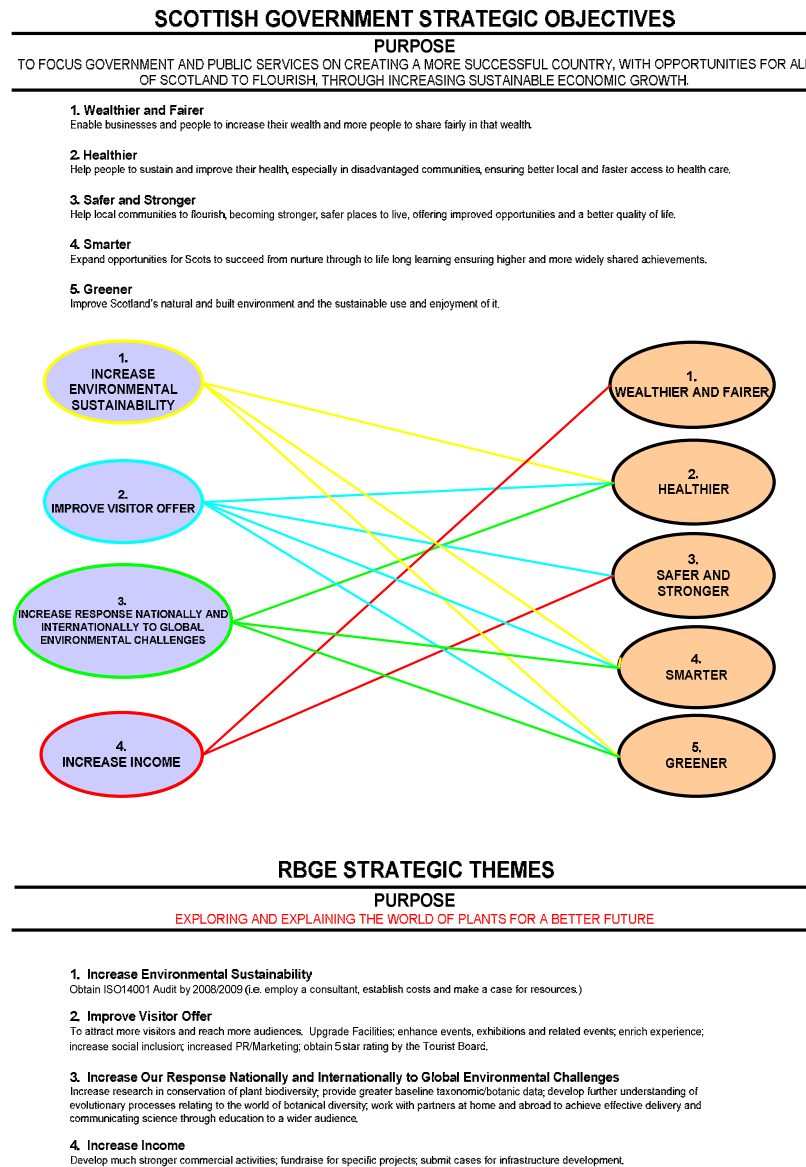


Figure 29 RBGE Balanced Scorecard - 2008

MISSION
 EXPLORING AND EXPLAINING THE WORLD OF PLANTS
 FOR A BETTER FUTURE

VISION

The world is changing more rapidly than ever before in human history. The race is on to preserve biodiversity, to find more sustainable ways of living and to prevent irreversible damage to the global ecosystem. With its dual role as research and education institute and visitor attraction, the Royal Botanic Garden Edinburgh will make a vital scientific contribution and take up the unique opportunity to engage with the public, making them part of the solution.

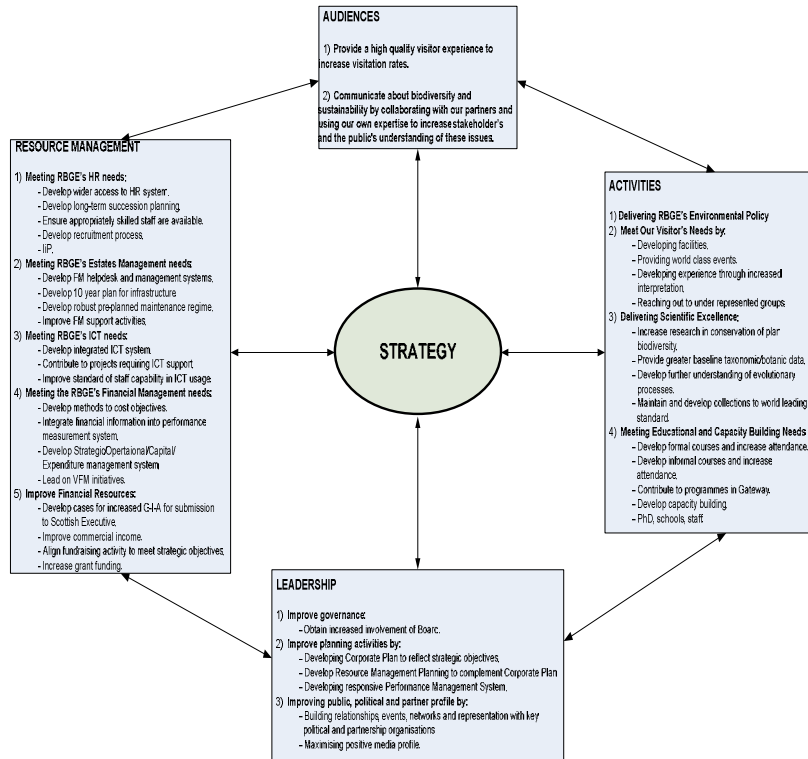
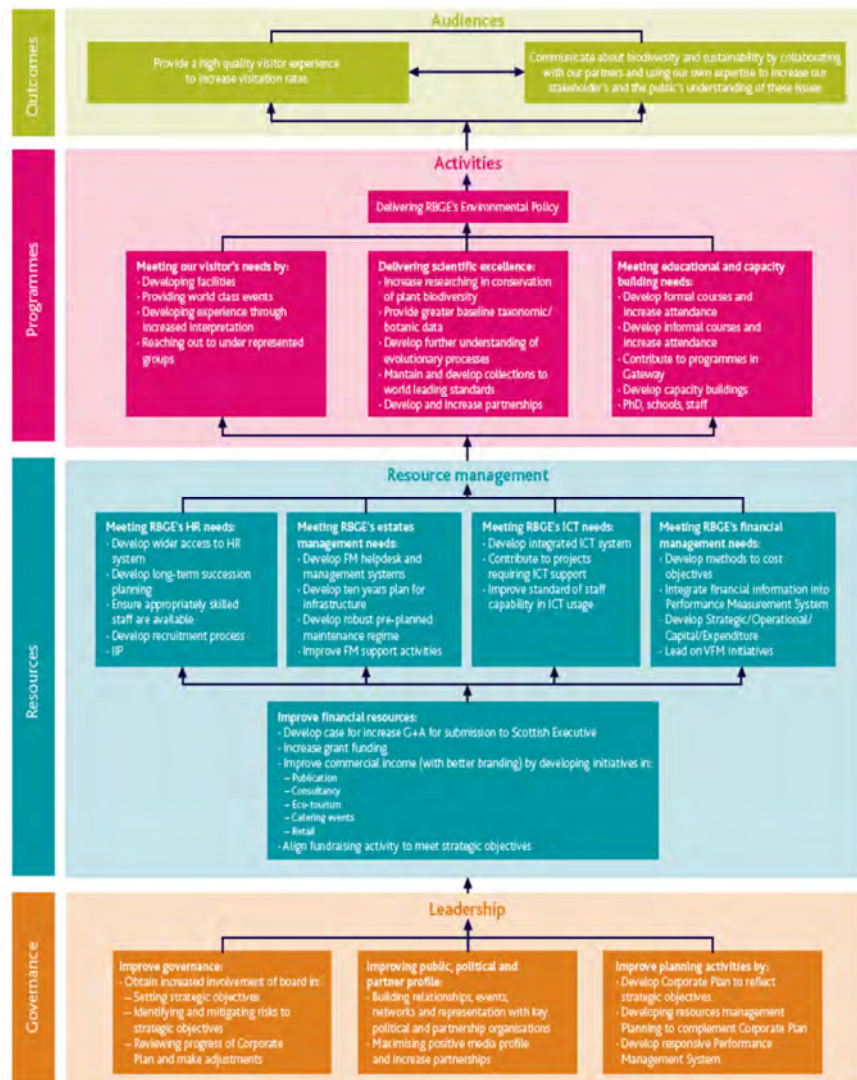


Figure 30 RBGE Strategy Map 2008

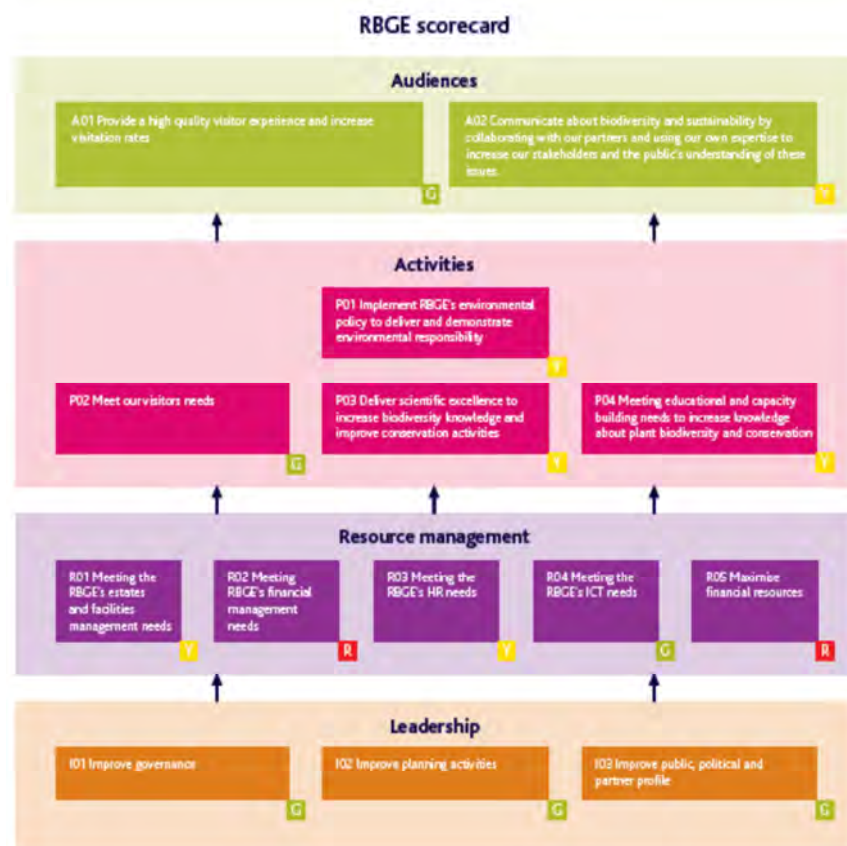


Development of ESM – RBGE’s Performance Management System

ESM from the Palladium Group had been selected as the preferred software solution for the RBGE at the Senior Management Group Conference held in 2007. The attractive component of this software solution was that it had a strategy map interface which could drill down to objectives, measures and initiatives at corporate and divisional level (cascaded) and used the Red, Amber, Green traffic light system of visual alerts. This had the advantage of allowing the researcher to develop the software to present a view of the

strategy map with which staff had become familiar in the Corporate Plan (see Figure 31 below). The software solution allowed for the performance analysis to be supported by quantitative data on selected KPIs, narrative (qualitative) explanations of issues that had caused positive or negative trends on the KPIs, indicated the cause and effect linkages from/to other objectives within the scorecard as well as showing which objectives from the cascaded scorecards impacted on the achievement of the objectives. These linkages were hyperlinked so that viewers could easily navigate their way to the information to gain a richer understanding of the issue under consideration. The ability of many staff to input data permitted a much wider engagement in developing/formulating, supporting and reporting on strategy progress.

Figure 31 Screenshot of RBGE Scorecard in ESM



Challenges of Computer Based Performance Management Systems

The main challenge of systems such as the Executive Strategy Manager™ is the need to: consider what information is required, estimate the time to be invested in the system design, provide training in its use to a large number of staff, and invest in management commitment. These processes, if successful, overcome many criticisms, including a lack of causal linkages and an overly top-down approach, raised by some well respected writers but the cost in time, effort and commitment from the process champion should not be underestimated. The financial cost is probably of the least concern.

Staff Briefing and Training

The first stage was to brief all staff, which was achieved by issuing a written notice (Annex B) and a series of lectures given to all staff from each division by the researcher and his assistant as to the purpose of strategy⁴⁷, how the Corporate Plan impacted on their personal objectives and, importantly, how their personal efforts contributed to the successful achievement of the corporate objectives, and why performance management was important for managerial purposes. This was followed by a demonstration of ESM and how its use was envisaged at RBGE. During the same lecture an explanation on time recording and its linkage to the performance management system was given accompanied by an on-line demonstration of that system. The researcher made it clear that the time recording was a means to collect data to assess the costs of achieving the corporate objectives and was not an attempt to comment on the effectiveness or efficiency of individual staff members. Furthermore, he explained that the time allocations made by staff would be taken on trust and that there would be no attempt to verify the veracity of what was being recorded. However, he did point out that decisions may be taken in the future on the cost/benefit of performing the objectives and, therefore, what priority to accord them. Those decisions would be based on the effort put into achieving them and the outputs derived (KPIs). A Q&A session ended each session along with staff being informed that they would be consulted on structure, content, and measures. A timetable (Annex C) for the system was developed.

⁴⁷ RBGE Presentation Strategy – PowerPoint dated 20 June 2008

Initial Data Collection

The researcher was involved in the discussions with each of the Heads of Departments on contents to be included in the performance management system; the administration of the outcomes of these discussions was given to his PA. Discussions with the Heads of Departments obtained data pertinent to specific objectives and measures which were recorded on spreadsheets⁴⁸ and then sent back to the Heads of Departments to permit them to consult with their own staff to ensure a reasonable representation of the objectives with associated measures had been captured. Amendments were suggested and the revised information was then updated in the spreadsheet and sent back to the PA for uploading into ESM. Spreadsheets were used as staff members were more familiar with Excel and the information was easier to amend locally rather than attempting to upload data directly to ESM, which was web hosted and prone to lengthy time delays when it came to data saving. Additionally, the spreadsheet documents would provide an archive record in case data was lost or corrupted on ESM during upload. Once the system had been loaded and made ready for use, locally designed training manuals (based on the on-line manuals from Palladium Group) were issued to all participating staff⁴⁹. The intention was to set up the system, having taken into account the range of requirements, and then trial it across the organisation. Because each division had differing needs it was considered sensible to try to get all divisions involved with the trial to see how the system could integrate with the demands that RBGE had for managing its strategy which may not have been envisaged by the system's developers (Palladium Group). Moreover, the researcher was required to establish whether the Institution could cope with a new management system which would have a profound effect on its operating culture. This was an ambitious project with the very limited resources of only the researcher and his PA to implement it.

⁴⁸ RBGE ESM Spreadsheets completed between 7 February 2008 and 14 June 2008.

⁴⁹ Executive Strategy Manager 'Browser' Step – by – Step Manual;
Executive Strategy Manager "Reporting" Step – by – Step Manual

The system, once set up, was capable of amendment by the local systems administrator at RBGE. It took longer to set up than had originally been planned due to a considerable debate within the Science Division as to what it was they wanted to measure as no two Heads of Departments could agree on common bases for measuring Science activities. Some saw the project as a corporate management system (as it was intended) but others took the view that every aspect of their work should be represented in the system, which would be more akin to the personal appraisal system that already existed.

Nevertheless, with considerable effort significant progress was made designing and building the system, briefing and training staff over a period of some 6 months. The divisional scorecards were developed and approved by each of the divisional directors and are shown in Figures 32-34 below. The Corporate Services Divisional Scorecard was based on a linear and hierarchical structure (Figure 32) as was the Horticulture Division's (Figure 34) but the Science Division's scorecard was more output based with the structure being represented in the Projects/Programmes/Tasks perspective (Figure 33). All Scorecards had a divisional outcome perspective (green colour scheme) which aligned up to the corporate level RBGE Scorecard (Figure 31 above).

Figure 32 Screenshot of Corporate Services Scorecard in ESM

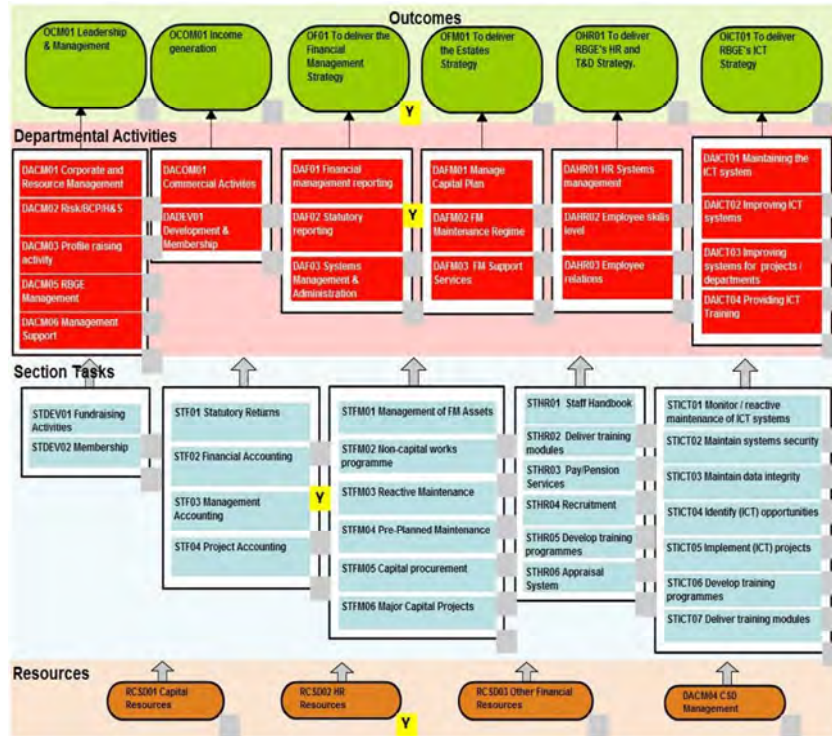


Figure 33 Screenshot of Science Scorecard in ESM

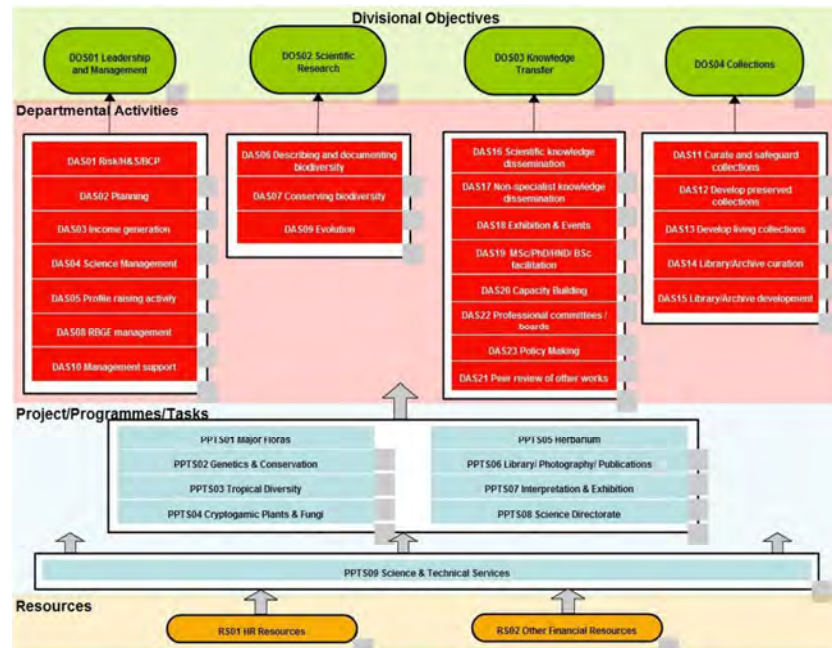
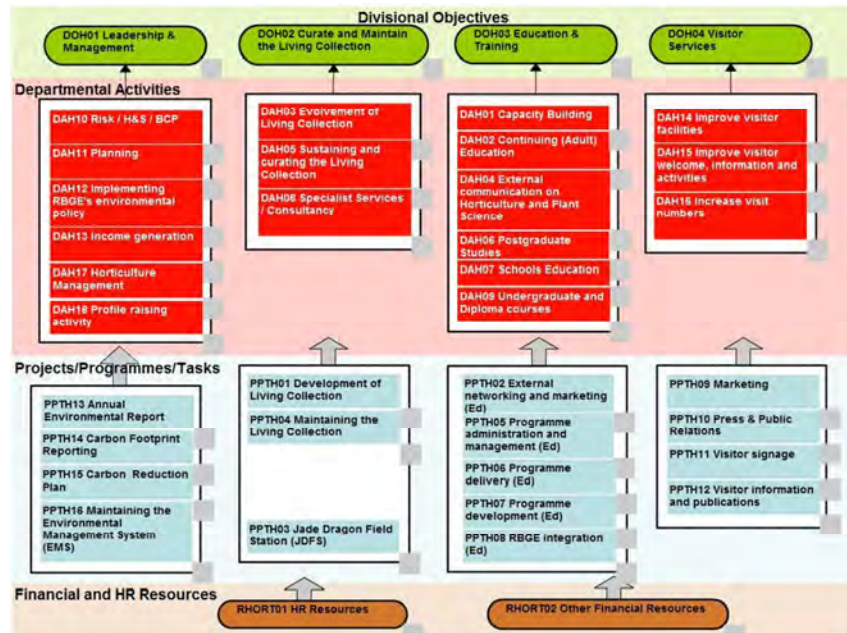


Figure 34 Screenshot of Horticulture Scorecard in ESM



Staff Time

A major component of the Objective Costs comprised staff salaries that related to the carrying out of activities that led to the achievement of the strategic objectives. Staffs operate in differing modes at RBGE. Some staff worked their contracted hours of 37.5 hours per week and no more. Others worked overtime at various rates, which depended on the day and whether it was a public holiday or not. The professional level of staff tended to work anywhere between 40–60 hours per week at their own volition and received no additional payment for their additional work. The additional hours spent was down to the individual wishing to do so and not at the request of management; this situation is not untypical in academic institutions or knowledge based organisations. However, for those staff members who were paid contractual overtime these costs were captured through the finance system. Consequently, any staff timing system would need to be capable of meeting this diversity of work patterns. It is important to understand that the purpose of the timing system was to provide a reasonable estimate of what the objectives were costing to achieve and, therefore, a basis for resource allocation and not necessarily provide a fully reconcilable cost to the last

penny. The system would depend on staff members' own estimates of what time they spent on any activity and no attempt would be made to shadow time them. Inevitably, this would mean that some errors would be accepted.

The researcher had directed his HR staff at RBGE to consult with staff and their line managers and agree the set of activities that each staff member would participate in. This was to enable the production of personalised drop down menus on the time sheets to avoid long lists being presented and to reduce the chances of error by booking time to the wrong activities. In most cases the list would extend to three or four activities but in the case of the most senior staff then up to ten activities could be presented. The RBGE's working practices described above brought about specific difficulties when it came to designing a staff time costing system that was easy to understand, relatively inexpensive, and simple to implement. The activity recording system was developed at a financial cost of circa £4,500 and comprised an add-on module to the existing HR management system that the RBGE had in place (HR.net). The HR system was modified to include a time allocation system that collected either actual hours spent on activities or a percentage of working days/weeks on the range of activities that individual staff members were expected to contribute to. Once developed it was rolled out to staff during the training sessions. This module appeared to the staff member as an on-line application with drop-down menus (see Figure 35 below). The timesheets could be completed daily or weekly and would take approximately five minutes a week to complete, if a diary had been maintained. In the researcher's case he was able to refer to his MS Outlook calendar to provide the required information. Although staff could opt to complete the on-line time sheet in either percentages or hours the system calculated costs based on percentages of total salary costs (which included ERNIC and pension costs) as the staff members got paid/cost the same whether they worked a 37 hour week or a 60 hour week. The HR staff would send out a reminder to all staff to complete their time sheets approximately one week before the month end lock down of the data. Once the system had been locked down it was able to calculate the staff costs of achieving the objectives. The output from HR.net was a spreadsheet which had the costs allocated to each activity. The methodology for how the costs

were calculated is explained in a paper written for the researcher by staff at ActiveHR Ltd and is reproduced in Annex D.

Figure 35 RBGE Staff Timesheet for Activity Recording - 2008

Royal Botanic Garden Edinburgh

Weekly percentage – Screen – – Webpage dialog	
Weekly percentages	824015074 – Alasdair Macnab
Weekly beginning	25/10/2009
Completed activity sheet	
MDACM01.1 – Review/Revise the Performance Management	0
DACM04 – CSD Management	25
IPO25 – Benmore Fernery	0
TRAINING – Meeting internal and external training courses including College, University and Continued Professional Development	0
MCCM01.2 – Corporate plan	35
MDACM02.2 – Health and safety	
MDACM02.3 – Risk register	
IPO22 – Edinburgh Gateway	
LEAVE – Leave of absence (including annual, public and privilege, flexi, TOL, special, maternity, paternity, parental adoption and career breaks)	
MDACM03 – Profile raising activity	0
SICK – Sickness absence	0
MDACM02.1 – Business Continuity Planning	0
DAFM01 – Manage Capital Plan	10
MADCM01.1 – Resource Management Plan	0
DACM05 – RBGE Management	30
MOC01.3 – Deliver Resources for Corporate Governance to the Board - Other	0
MROS.4 - Increasing Income	0
MOCM01.1 – Board Papers	0
	0
	0
	0
	0
	0
	0
	0
	100

Additional Finance Codings

To capture the expenditure reported through the financial systems each item of expenditure had two codes allocated against them: a cost centre code and an objective cost code. To allocate two codes a system modification was required. This system adaptation was directed by the researcher and the cost to have the RBGE's *SunSystems* financial software amended to cope with this new requirement by the system integrators - Castle Computer Services Ltd, Bellshill - was minimal as it could be included in a general update to the system. At the end of each month a report was generated in an Excel spreadsheet by the Finance Department which showed the allocations of the financial expenditure by the agreed codes to suit the ESM structure incurred during the month against the departmental activities.

One of the purposes of the research project was to identify the cost of carrying out RBGE's objectives; something that had been requested by Scottish Government for some eight years but had not been able to be achieved due to a lack of process or suitable technology. Having calculated the staff effort directed to each strategic objective and captured the financial costs for each objective, these could now be abstracted from the activity level and cost centres all the way up to the corporate objective level in the performance management system to provide an overall cost for each strategic objective. This accounting process developed by the researcher is now referred to as Strategic Objective Costing. More details of this process will be covered later.

First Implementation of the Solution

The researcher was leading this project and, therefore, it was agreed that his Corporate Services Division would be the "guinea pigs" for the pilot trial to progress the system from a theoretical construct to one that could actually work *in situ* and meet the needs of the RBGE. Lessons learned by Corporate Services Division staff members would be cascaded to other Divisions (Science and Horticulture) thereby reducing the need for wasted effort repeating mistakes or adoption of poor practices. Although all staff members were trained, initially there would be little input into ESM other than from staff belonging to Corporate Services Division. However, all staff members were required to complete activity recording time sheets to provide

a sound basis for costing decisions at a later stage; this was necessary as many of the activities at RBGE were cyclical and periodic. Subsequently, feedback on Activity Recording was obtained (see Annex E) and revisions were made to make the system more user-friendly by ActiveHR Ltd. At their regular staff meetings progress on the introduction of ESM was reported to the Corporate Services Division's Heads of Departments (see Annex E) and suggestions emerging from experience were acted upon to improve the performance management system. With only two people working on the project (the researcher and his PA) it was not surprising there was some slippage in the timetable due to the complexity of what was being embarked upon. Although Corporate Services Division staff members were actively participating in the trial and provided monthly reports against their allocated objectives by way of KPIs, performance analyses, and recommendations for action, work continued contemporaneously to design/amend the scorecards for the other divisions. This work was complicated by Science Division staffs wishing to over-elaborate the system for their benefit but in order to achieve staff buy-in such requests were accommodated on that occasion.

Teach and speak about the Innovation

Returning to Kaplan's (1998) Innovative Action Research Cycle part of the process is to teach, get feedback and learn from that feedback, and write articles before implementing the concept in a new organisation (see Figure 16). CIMA was providing funds (up to £10,000) to enable the researcher to carry out practitioner led research to generate outputs for the benefit of CIMA members. This research was carried out at the same time and was complementary to the doctoral research.

The first presentation of the ideas in their infancy was to the East of Scotland CIMA branch at a meeting held in Perth on 20th October 2008⁵⁰. The audience comprised mainly CIMA members either in business or practice but also included accountancy and strategy academics from the Universities

⁵⁰ CIMA (East of Scotland Branch) Presentation – PowerPoint – October 2008.

of Dundee and Edinburgh. The main question raised was that of how readily staffs were willing to become involved with the new concepts of management as some attendees had poor experiences of change management. The researcher had been able to provide a generally positive response as at that time only Corporate Services Division staffs were expected to participate and were actually doing so.

Senior Management Group Planning Conference 2008

The Senior Management Group Planning Conference returned to New Lanark on 9th-11th September 2008⁵¹. The Conference focused on briefings from the leaders of the Strategic Delivery Groups (Visitor Services, Income Generation, Environmental, Global Challenges (related to Science)) which had been formed (but time limited) after the previous year's Conference to investigate how the RBGE could improve its performance in these areas in order to achieve its strategic objectives (a section had been set up in ESM for each of these delivery groups to report on). Capital masterplanning, branding and marketing were also discussed by the Group. As no update to the Corporate Plan was required by RERAD there was no discussion on revising the Plan from the previous year.

Corporate Plan 2009/10

No updated Corporate Plan was developed in this year at the request of RERAD. At the time this suited the RBGE senior management (including the researcher) as they had much to contend with supervising the Gateway Project. In retrospect, Senior Management Group regretted that decision as it allowed RERAD to disengage with some of the issues affecting RBGE. This was interesting in that it meant that the RBGE senior staff regarded the Corporate Plan as a significant tool for communicating with RERAD and this belief would ensure that its value as a document was maintained.

Write Article

The first written article, peer reviewed, was "*Can the balanced scorecard improve the focus and research output of botanic gardens?*" No revisions were required to the article and it subsequently appeared in the September

⁵¹ Senior Management Group Planning Conference 9-11 September 2008 – Minutes dated 30 September 2008.

2009 edition of CIMA's *Research Update*⁵², the newsletter of CIMA research. This was the researcher's first experience of firstly, writing an article for publication, and secondly being subjected to a peer review and the process helped the researcher to summarise his work to date in a very concise manner. A comment contained in this article and based on observation was: *"The whole process became a significant learning exercise but it did engage the staff with the BSC, the strategy map, the software system used to assist the process, and, thus, became part of the everyday vocabulary for the staff"*

Lessons Learned from the First Implementation of the Solution

In earlier sections there were descriptions of how ESM was brought into the organisation, set up, training given, and rolled out to staff members. This section will give an overview on the initial experiences of RBGE using an organisational performance management system, the first ever to be employed in the Institute. Corporate Services Division was the early adopter of the system as described above and, therefore, had the opportunity to inform its development. At first there was some uncertainty as to content of reports but each Head of Department was encouraged to engage with their staff to develop ideas for inclusion. It was explained by the researcher that this would be an iterative process with learning on all sides. Over a period of some five months suggestions were made at regular meetings by the group which included the researcher on improvements with reporting, including content and style. Different teams adopted different approaches. The HR Department decided to sit as a group and construct the report whilst one typed it in. The Finance Department delegated various aspects to different staff members. Both Estates and ICT Departments' inputs were usually completed by the relevant Head of Department. However, this latter method was discouraged by the researcher as it meant more work for one individual, and did not allow other members of the department to get involved. Once Corporate Services Division had reached the point where

⁵² CIMA's Research Update – September 2009 pages 8-9.

there was a reasonable level of satisfaction as to practicality and usability of the system the other Divisions were asked to start contributing.

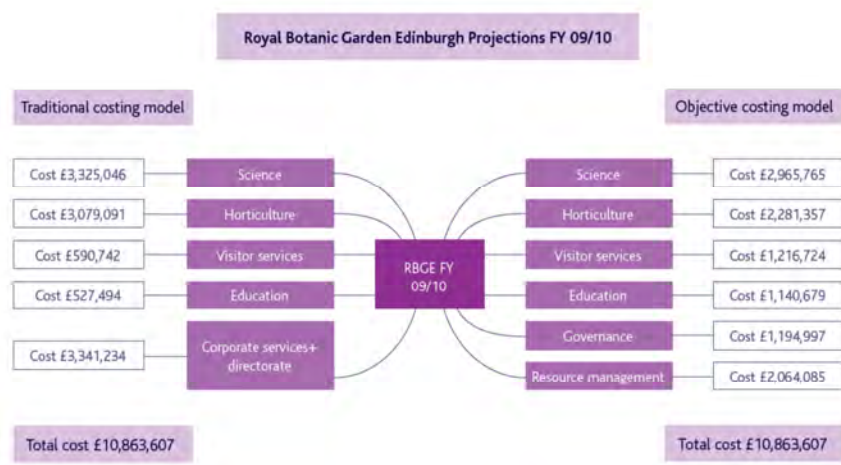
However, staff members from both Horticulture and Science Divisions were reluctant to become engaged although some Horticulture Division staff did eventually start making some reasonable progress once a few of their colleagues had entered some data and found the experience not as daunting as they had imagined. Science Division staff continued to refuse to participate at this stage. Some comments on this aspect of the implementation follow in the section on “Resistance to Change”. What became evident from conversations with staff members of Corporate Services and other Divisions was that, initially, there was uncertainty as to what information was required to be inserted into the system. Some staff thought they were being tested on their capability to report but were worried that they had little experience of reporting against strategic objectives although most had carried out personnel appraisals successfully. When it was explained that the process was similar in that they were reporting against agreed targets but instead of personal objectives they were commenting on their departmental objectives some clarity emerged. Moreover, they were comforted by the researcher’s assurances that it was a learning exercise for all and that there was no correct solution at this point. He explained that constructive comments from all of the Heads of Departments would be made to assist as everyone was in the same position. Criticisms would not be welcome at the early stages until all were comfortable with what they were expected to achieve. Each department made their reports and then these were discussed with peers and helpful suggestions were forthcoming. It was noticeable that with this regime in place significant improvements to the quality of reporting were achieved over a period of only a few months (reporting was carried out on a monthly basis). Interestingly, a slightly competitive edge emerged as staff attempted to provide the most interesting reports.

The system had proved itself capable of meeting the technical needs of the RBGE, having had substantial adaptations made to it from the configuration envisaged by its developers (Palladium Group Inc). Interestingly, after some

early modifications were made to the on-line time recording system, there was no difficulty experienced by any Division with completing the activity recording and 90%-95% regularly completed the time sheets, with the balance being from staff who were in the field at the time. The current level of active participation with ESM continued for a further 4-5 months until the next Senior Management Group Planning Conference. The work carried out by Corporate Services Division and the experiences gained from using the systems were deemed worthwhile by the researcher as he had learned valuable lessons about how to implement the system and formed ideas about how to make improvements to the next iteration that would be more likely to gain a higher level of participation from the other Divisions.

The early version of the objective costing system was perceived a success by the senior management and, in particular, the Science Division staffs were keen to demonstrate it to the Strategic Review Group visiting the RBGE in November 2009. One of the key selling points to the staff on objective costing was that they were able to see that their efforts in areas outside their formal role were able to be recognised; they had long believed that they had made contributions in this way but had been unable to prove it in an objective and quantifiable way. A summary of the product from the objective costing is shown at Figure 36 below and the notable costing outputs from this system were Science, Horticulture, Visitor Services, and Education. We could see where staff effort was actually taking place regardless of where the staffs sat within the organisational structures (e.g. Science and Horticulture staffs were making significant contributions to Education and Visitor Services). The researcher pronounced that further work would need to be undertaken to simplify the coding structure and relate costs more directly to the objectives; the Senior Management Group agreed with his proposition.

Figure 36 Objective Costing Outputs – October 2009



Resistance to change

The literature review indicated that there might be resistance to change caused by the implementation of a new system requiring changes to working practices or culture. Unsurprisingly, this phenomenon did occur at the RBGE. Firstly, the time recording system caused some difficulties and some staff did not participate, and the completion of the reports in ESM also met with some resistance from Science Division in particular. Both these issues are examined in the next sections.

Time Recording System

Inquiries were made of the HR department after the time recording system had been in operation for two months to ascertain uptake. The feedback of information provided indicated that there was a mixed reaction to the system, with some claims being made about the inflexibility of the system which was a barrier to use. Focus groups were held to identify the issues causing concerns and these are summarised at Annex E. Once the changes were made in response to the feedback and staff briefed on them then the resistance melted away and a highly satisfactory 95%-98% uptake is now observed. A senior scientist, Dr Moëller, commented, “ *I find the system very useful for forward planning my work as I can see after a period of time*

*the pattern of my work*⁵³. Of course, this was an additional benefit of the system.

Performance Management System

The first iteration of the performance management system (described earlier) had proved difficult for the Science and Horticulture staffs to grasp even though they had been instrumental in the development of the components relating to their specific areas. This was because they had tried to recreate their hierarchical structures within the system without giving full thought about what it was they were trying to achieve when reporting on strategy execution. Horticulture Division eventually made a tentative start after two months but gained in confidence over a period of time and reasonable reporting took place thereafter. Science Division staff members' performance had traditionally been measured in numbers of published papers and contributions to scientific conferences; their measures were collated annually. However, the structure, although designed to their specifications, did not easily match previous performance measurement appraisal systems and the Science staff failed to participate. This situation was disappointing in that much effort had been put into designing the Science Division's Scorecard to meet their specific requirements, albeit complex in nature and, perhaps, unnecessarily so. Moreover, they were aware that they carried out other tasks within the RBGE which they wanted acknowledging but were unsure how to articulate them. Some investigation as to why there was a reluctance to participate was carried out by the researcher. Conversations took place between the researcher and the various Science Division members and it was established that the Heads of Department within Science Division were still uncertain what information was required to be entered into the system. They were advised to discuss this matter with their Divisional Director as it would not have been appropriate for the researcher to dictate to another division what information was relevant to them, other than to generalise that what was required was a short summary of achievements and comments on barriers to success that they felt could be removed. Indeed, when suggestions were made by their own peers some would agree but

⁵³ Comment by Dr Michael Moëller to the Researcher 18th November 2009.

others would not, making the whole exercise somewhat unsatisfactory and inconclusive. The end result was that rather than try to resolve the issue effectively between them the scientists abandoned the exercise preferring to leave the solution to their Director. Attempts were made to encourage staff to make a start to motivate others; these efforts included one-to-one conversations as well as joint meetings but to no avail. The Heads of Departments were reluctant to move forward until they knew what was required of them by their Director and they did not want to put anything into the system in case it was considered wrong or facile. The Director of the Division was apprised of the situation but her response was to say that until she saw what information was forthcoming from her staff it was impossible for her to give direction – a state of inertia had developed, which would require a different form of intervention to resolve. This emphasises the points made in the literature review about structures not following strategy and the difficulties experienced by employees relating to what could be described as abstract concepts (Hax, A. and N. Majluf 1983). The Regius Keeper believed that the problem in Science Division was due to a need to change the extant culture, which he believed would happen over time if left alone. The researcher countered this view with the suggestion that culture change would need to be led and managed as it could not happen by itself. By this time some of the Corporate Services Division's Heads of Departments were questioning the point of their contributions if other divisional staff were not playing their part in contributing to the organisational performance management system. They took the view that the process would only be wholly effective if the entire organisation participated and then they would be able to react to issues brought up in the reports. A perception of inadequate leadership from some of the researcher's colleagues was emerging.

What has been described above touches on a phenomena described in the literature as resistance to change. None of the duties asked of the staff could be described as difficult to either understand or carry out. Nevertheless, what was experienced was a form of resistance when it was observed that some staff simply did not complete the reports asked of them, even when it was obvious that these staff could easily do so. When the researcher

investigated the reasons for non-compliance he was proffered excuses along the lines that the staff members were unsure of what level of detail to report on. These excuses would be acceptable if the staff members in question were all junior and had never reported on any matter before. However, where the most resistance arose was from scientists with PhDs who were well used to writing reports and papers on which they would expect to receive commentaries, including criticisms. Additionally, full training had been given, consultation had taken place, and the opportunity to be involved with the descriptions of the objectives and design of the measures within the system had been afforded. Therefore, there had to be other explanations for this behaviour. When discussing the matter with some of the individuals involved it became apparent that some staff were simply railing against the notion of being held accountable for their actions. This seemed to reflect on their past working practices where they, for the most part, self-determined their research activities and their science strategy had been largely a rehearsal of the work they wished to carry out to pursue their own academic interests. They were not used to being directed on their work or, indeed, explain what they were doing. However, in more recent times, and certainly since 2007, the Science Division had developed a strategy which aimed to align with Scottish Government's biodiversity strategy and other plant science strategies of a more global nature. Therefore, to some extent the concept of working to a plan not of their own making was no longer foreign to them.

Overcoming Behavioural Issues

To overcome some of the issues described above a revised and simpler system was needed and a significant improvement in leadership was required if the systems were to be used and, therefore, become informative. The Senior Management Group continued to endorse the purposes of the performance management system and reaffirmed their backing for its implementation. The researcher reminded the Group that their words of support would need to be reinforced with active participation by them and their colleagues to make the system effective. He further stated that the whole point was to assist with strategy execution which was the responsibility of all of them and that of the Board of Trustees to whom they

were responsible. Further collaboration with each of them would be required to assist with any proposed revisions. In effect the researcher realised that he would need to spend a considerable amount of time again communicating and teaching his colleagues, primarily in Science Division, what was required and what sort of information they should put into the system until such time as their Director had sufficient confidence to take over that role.

Second Implementation of the Solution

The second implementation phase commenced as a consequence of the Senior Management Group Planning Conference held in September 2009. The issues informing this phase are described below.

Senior Management Group Planning Conference 2009

The Senior Management Group Planning Conference 1st–3rd September 2009⁵⁴ was probably the most useful in terms of revising the Corporate Plan since the introduction of the Balanced Scorecard in 2004. The Group were also preparing for the Strategic Review Group – a quinquennial review of the RBGE’s Science, Horticulture, Education, and Visitor Services offerings by a panel of international experts on these various output activities carried out by the RBGE. This forthcoming review very much focused the minds of the Senior Management Group as the global reputation and standing of the RBGE stood or fell by the report from the Strategic Review Group. Additionally, the Strategic Review Group was expected to make constructive suggestions to the RBGE on strategy and, therefore, their views would be taken into account when formulating the Corporate Plan. In view of the forthcoming Strategic Review and the introduction of Scottish Government’s National Outcomes in January 2009 (all public bodies were expected to contribute to at least one National Outcome) a major overhaul of the Corporate Plan was undertaken at the Conference. As in previous years the Balanced Scorecard/Strategy Map frameworks were fundamental tools to assist with the formulation process. Due to the requirement to link to the

⁵⁴ Minutes of the Senior Management Group Planning Conference 1– 3 September 2009

National Outcomes the Senior Management Group agreed to the researcher's suggestion to extend the Balanced Scorecard/Strategy Map to include a fifth perspective – Scottish Government's National Outcomes; this aspect of scorecard design is covered in more detail in the next section. The researcher explained that the Corporate Plan would need to be redrafted and agreed before any changes could be made to ESM so that it could accurately reflect the Corporate Plan. There was also the additional pressure of achieving much of the task of updating the Corporate Plan prior to the arrival of the Strategic Review Group in early November to take advantage of any constructive suggestions for inclusion they might make. The Senior Management Group, therefore, had a unifying undertaking to achieve considerable changes to the strategy (Corporate Plan) in a relatively short period of time.

As a consequence of the proposed radical changes to this Corporate Plan the researcher pointed out that ESM would need a very substantial revision to maintain its relevance. Therefore, a decision was taken to stop the trial of ESM post Conference to enable the necessary revisions to be made for the start of the next financial year.

Corporate Plan 2010/11-14/15

Subsequent to the Senior Management Group Planning Conference in September 2009 the Executive Directors had facilitated a strategy workshop in early October 2009 with the RBGE's Board of Trustees⁵⁵ to give them the chance to influence the Corporate Plan and to make suggestions on strategic direction. Trustees stated their primary objective was for the Senior Management to achieve funding for the North East Corner Project (£37m) which would contribute to the Scottish Government's "Green Agenda", and would reduce the carbon footprint and energy costs of the RBGE. The Trustees made some suggestions for minor changes to the narrative of some of the objective statements in the Corporate Plan. It also became apparent during this workshop that some of the Trustees had difficulties in distinguishing between outputs and outcomes and also how the various activities (outputs - five in number) concatenated into two outcomes

⁵⁵ Minutes of the Meeting of the Board of Trustees' Strategy Workshop - 7 October 2009.

although this was generally well understood internally by management and staff. Indeed, the Regius Keeper was often heard in staff update sessions explaining the balance between the two outcomes as likened to a see-saw as we had to balance the needs of our science communication output (to governments, peers and educational audiences) with those of our visitors (general public). It was decided after this meeting that work would be done to separate the outcomes from two to a larger number to facilitate comprehension by those not intimately familiar with the purposes of the RBGE. Additionally, “outputs” would be known as “Activities” and “outcomes” would be known as “Impacts” and the perspectives’ labels in the Balanced Scorecard/Strategy Map and in the performance management system were to be amended accordingly.

The Corporate Plan was to be a significant departure from previous versions, although it would still follow the Balanced Scorecard/strategy map format. This format was reinforced by the Regius Keeper as he believed that using state of the art business tools would put the RBGE at an advantage when putting forward cases for support from Scottish Government and to make the point he indicated a determination to show a much greater linkage to Scottish Government’s National Outcomes which was considered important when public finances were coming under closer scrutiny and there was pressure building on Government to reduce public expenditure from the media/public.

The format of the Plan changed. The introduction, instead of its usual description of what the RBGE provided by way of services, quoted points of commendation from the Strategic Review Group, and extracts from an independently commissioned review of the RBGE’s social and economic impact on Scotland by DTZ⁵⁶ (pp 3-4). These reviews pointed to the RBGE making a significant contribution both nationally and internationally as well as both intellectually and by Gross Value Added (GVA)⁵⁷.

⁵⁶ DTZ Impact of RBGE Edinburgh – Final Report –December 2009

⁵⁷ GVA is the additional value generated by each part of production activity and is equated as output minus intermediate consumption.

According to DTZ, RBGE’s contribution to the Scottish economy was significantly more than just its direct expenditure. When including direct, indirect and induced expenditure and income effects, RBGE supports 355 Full Time Equivalent (FTE) employees throughout Scotland, and it is able to contribute substantially more to the Scottish economy although most of the impact is on the local (Edinburgh) economy.

Table 3 below summarises DTZ’s assessment of the total operating impact of the RBGE at the national (Scotland) level. The key points were as follows:

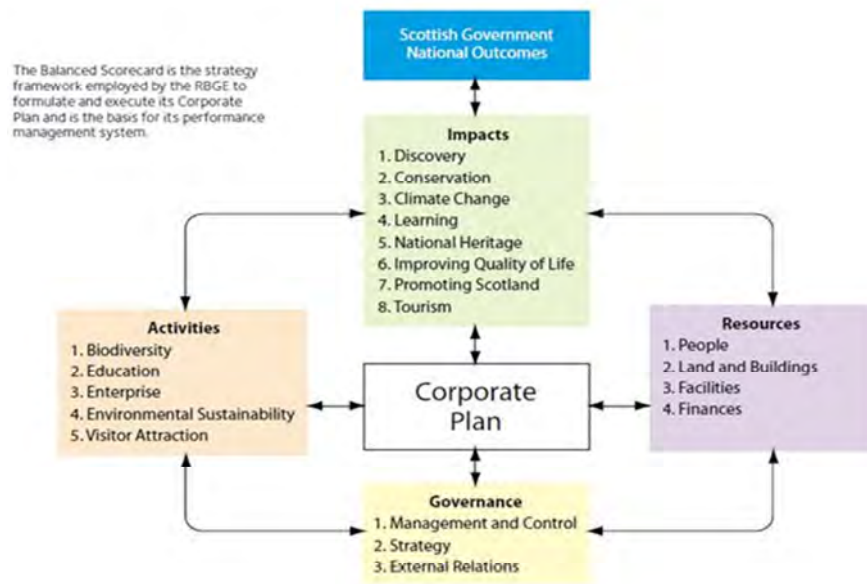
- The total output impact of RBGE’s operations is estimated at £29 million per annum. This represented the share of GDP attributable to RBGE’s operations.
- Over 350 FTE jobs are associated with the delivery of this output, between on-site staff, supply chain staff and those in consumer industries.
- This output level is associated with £19.2 million of Gross Value Added (GVA).

Table 3. Total Operating Impacts - RBGE

	Output £m	Employment FTEs	GVA £m
Direct (on site)	£11.8	232	£7.5
Indirect (suppliers)	£6.2	60	£2.9
Induced (via wage spend)	£5.1	63	£2.8
Total Operating Impact	£29.0	355	£19.2

The next section of the Corporate Plan described the Balanced Scorecard framework and how it related to the rest of the structure of the Corporate Plan. Importantly, a new perspective was introduced into this Plan’s Balanced Scorecard; that of Scottish Government’s National Outcomes (p4). The revised Balanced Scorecard is shown at Figure 37 below.

Figure 37 RBGE Balanced Scorecard - 2009



The associated strategy map (Figure 38 below) showed the upwards alignment between RBGE’s inputs (governance and resources), outputs (activities), outcomes (impacts), through to the principal stakeholder’s requirements (Scottish Government’s National Outcomes). To reinforce the linkages between RBGE activities and the goals of Scottish Government, the Corporate Plan (p8-9) indicated, with brief definitions, which of RBGE’s activities and impacts related to which of Scottish Government’s National Outcomes. A map had been attempted to provide a visual representation of these linkages but the resultant graphical output was neither helpful nor able to be made easy sense of; there were simply too many linkages (and, therefore, arrows) to provide the necessary clarity.

An alternative solution was developed by senior staff which provided an alignment table (p10) indicating not only which impacts linked to which National Outcomes but also the strength of the linkage. These linkage strengths were based on a consensus judgement of the Senior Management Group and are shown in Figure 39 below.

Figure 38 RBGE Strategy Map

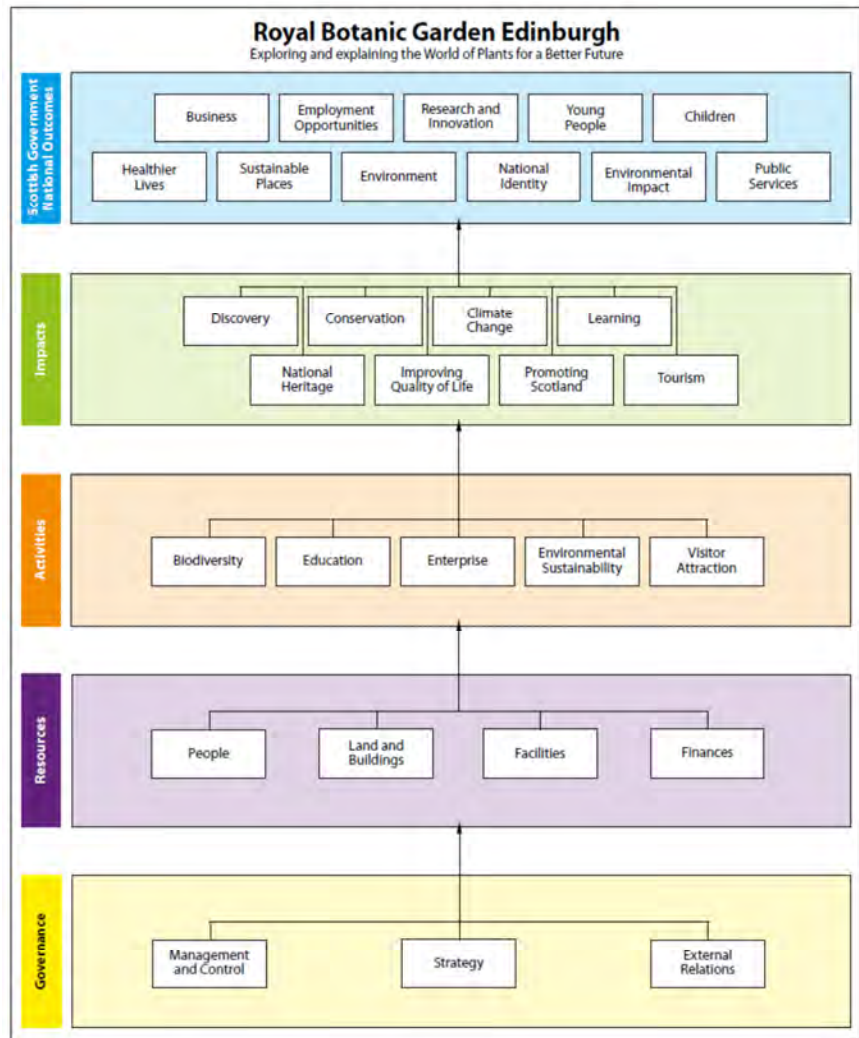


Figure 39 Alignment Table – RBGE Impacts to Scottish Government National Outcomes

Scottish Government National Outcomes	Link	RBGE Impacts
Business	✓	Promoting Scotland
	✓	Tourism
Employment Opportunities	✓	Learning
	✓	Promoting Scotland
	✓	Improving Quality of Life
Research and Innovation	✓	Discovery, Conservation, Learning
Young People	✓	Learning
	✓	Improving Quality of Life
Children	✓	Learning
	✓	Improving Quality of Life, Tourism
Healthier Lives	✓	Improving Quality of Life, Tourism
Sustainable Places	✓	Climate Change
	✓	Conservation, Improving Quality of Life
Environment	✓	Conservation, Learning
	✓	Improving Quality of Life
	✓	Climate Change, Tourism
National Identity	✓	National Heritage, Promoting Scotland
	✓	Discovery, Conservation, Learning
Environmental Impact	✓	Conservation, Improving Quality of Life
	✓	Climate Change
	✓	Learning
Public Services	✓	Improving Quality of Life

Major Link ✓ Moderate Link ✓ Minor Link ✓

In order to show the specific linkages between the various activities, impacts and national outcomes a mini-strategy map device was developed by the researcher for each impact and activity and provided at each descriptor in the Corporate Plan. The following examples (Figures 40- 43) are provided by way of explanation (pages 11, 18, 23, 32 of the Corporate Plan 2010/11-14/15):

Figure 40 RBGE Impact - Discovery

Discovery

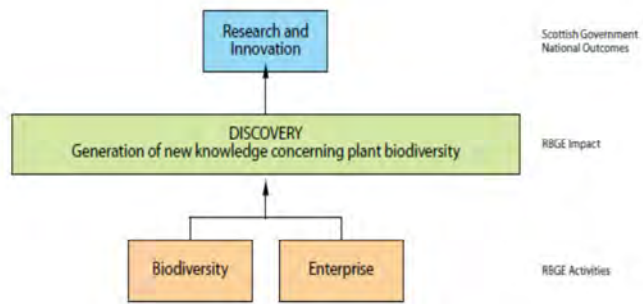


Figure 41 RBGE Impact – National Heritage

National Heritage

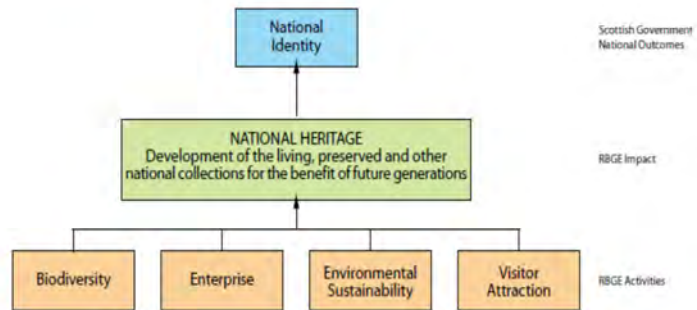


Figure 42 RBGE Activity – Biodiversity

Biodiversity

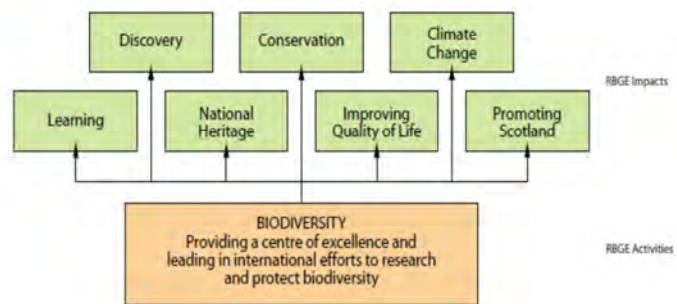
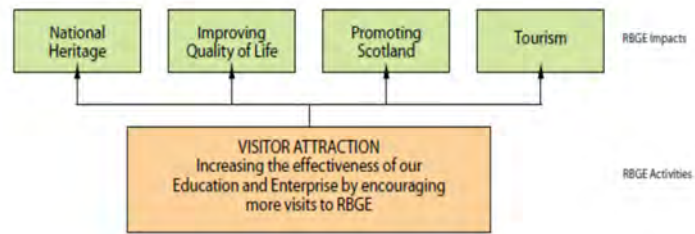


Figure 43 RBGE Activity – Visitor Attraction

Visitor Attraction



These diagrams depict the cause and effect linkages between the objectives, albeit they are developed on a logical basis rather than a causal one at this time and on the basis of discussions between senior staff from a wide range of professional backgrounds and experiences. These linkages are embedded in the performance management system which will be described in the next section. The Corporate Plan described the other perspectives (Resources, and Governance) in some detail but no mini-strategy maps were developed as it was considered obvious that these two perspectives would support all the activities in the map above. In anticipation of the expected reduction in Government funding a financial sensitivity analysis was detailed in Annex B of the Corporate Plan which indicated that the RBGE was in some difficulties towards the end of the planning period. Promises made by Scottish Government about standing behind the RBGE and that it would not be allowed to fail was of little comfort given the size of the projected deficit. Despite these forecasts the Corporate Plan⁵⁸ was approved by the Cabinet Secretary for the Environment and Rural Affairs (the sponsoring Minister) and further endorsed by the First Minister (unusual in that such an endorsement had not previously been given)⁵⁹.

⁵⁸ RBGE Corporate Plan 2010/11-2014/15

⁵⁹ Letter from First Minister to Regius Keeper dated 17th May 2010.

Update to the Performance Management System

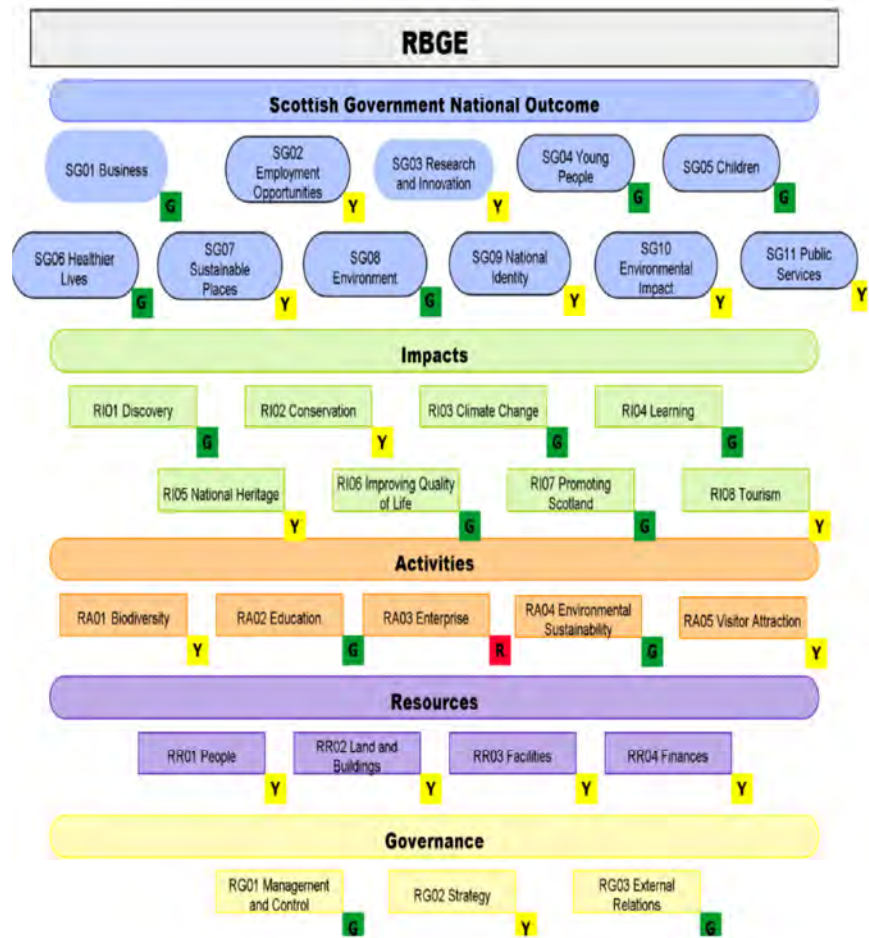
As explained above, the performance management system had been trialled for a period of 12 months to test its technical feasibility, to learn lessons about its construction and ease of use, and to test the operation of the objective costing system. The Corporate Services Division staff did learn to use the system successfully and it was there that most of the lessons for future deployment were learned. Corporate Services Division staffs by the nature of their employment were much more used to the notion of accountability, and how to report against KPIs.

It was decided at the Planning Conference (September 2009) that the Director of Corporate Services (researcher) would redesign the performance management system with a view to standardising and simplifying the format for each division with much clearer alignment to the corporate (RBGE) scorecard so that staffs from across the RBGE could more easily understand and relate to it. A second, more streamlined, version was produced in early 2010 to reflect the revised format of the Corporate Plan and to enable full reporting by all divisions from 1 April 2010, the start of the financial year. The researcher undertook the revisions himself and was much more prescriptive with the design having seen the failures of previous system caused by too many staff having inputs. The strategy maps for the RBGE and divisional scorecards were redrawn, new objectives statements written, development of work programmes which described the supporting activities for objectives designed and written, and new relevant measures discussed with staff and agreed with directors before being attached to the objectives within each scorecard. Additionally, Activity and Finance Codes were amended and incorporated into the software applications and, consequently, the time recording templates for each member of staff (220) updated in HR.net. Further training was required for staff to learn about any modified processes and revisions arising from this new work.

The revised strategy map interface in ESM is reproduced at Figure 44 below. The inputs from staff on each objective would provide senior management with a detailed quantitative assessment based on KPIs achieved and a qualitative assessment based on analyses of performance, and emerging

recommendations to improve chances of success. The costs of performing each activity/objective were provided as an output from the Strategic Objective Costing system (described below). At the bottom of each report is a list of cause and effect linkages to the other objectives which either impact on the specific objective under scrutiny or those other objectives that the objective itself impacts on.

Figure 44 RBGE Scorecard – ESM November 2010



The most effective way to employ the Balanced Scorecard is to cascade it down through sub business units to gain increased alignment between the contributing elements of the organisation (Kaplan and Norton, 1996). This principle also applies to a performance management system that reflects the

Corporate Plan. In the first iteration the scorecards had been cascaded to the three divisions with each divisional scorecard looking very different (See Figures 32-34 above) and containing completely different outcome objectives that would align up to the corporate scorecard. However, that had been difficult for some staffs to comprehend so the researcher this time designed each divisional scorecard's strategy map to be identical (Figures 45-47 below) although supporting activities were specific to each of the divisional objectives.

An example of an objective report is shown below (Figure 48) and is for the Science Division's Biodiversity Research Objective, and represents the most complex objective within ESM. Below that (Figure 49) is an example of a work programme (Phycology), a supporting activity for the Biodiversity Research Objective within Science Division. It can be seen from these figures that reporting is occurring in all areas (coloured flags indicate reporting) and previous difficulties in getting staff to report have been largely overcome, although an overall improvement in the quality and consistency of reporting was required at the end of the first quarter of the financial year. However, a major step forward had been made in that there had been an acceptance by staff of the need to report on their activities for the benefit of the Institution. It has to be borne in mind there are no rewards or sanctions available to management to make this happen.

Figure 45 CSD & Enterprise Division Scorecard – November 2010

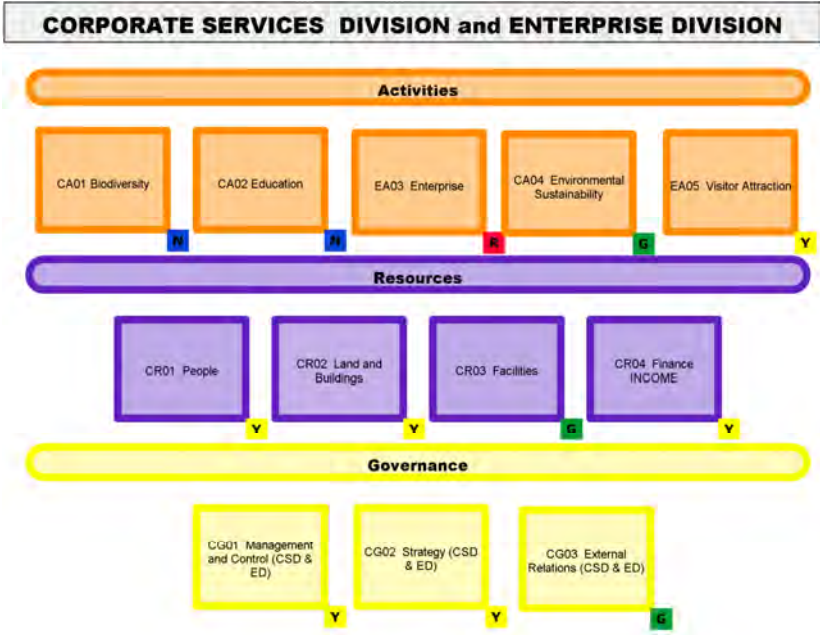


Figure 46 Horticulture Division Scorecard November 2010

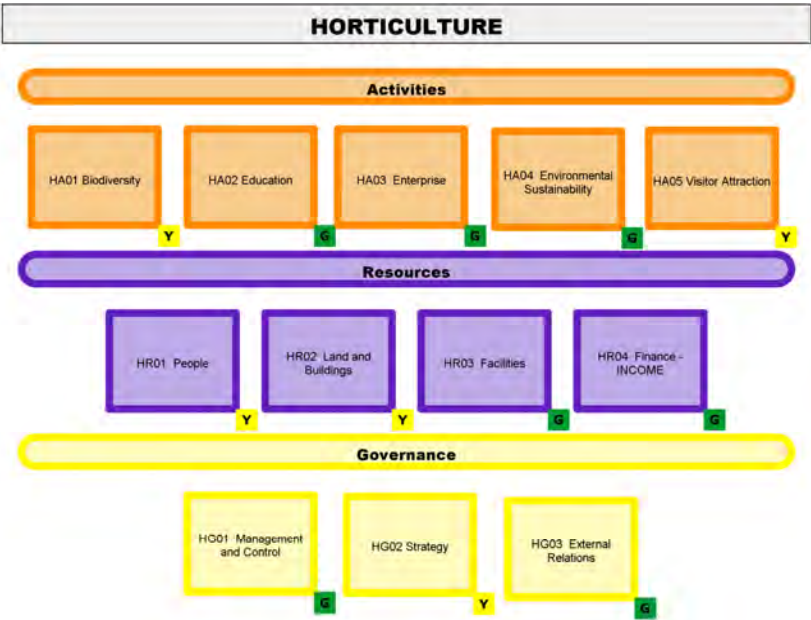


Figure 47 Science Division Scorecard November 2010

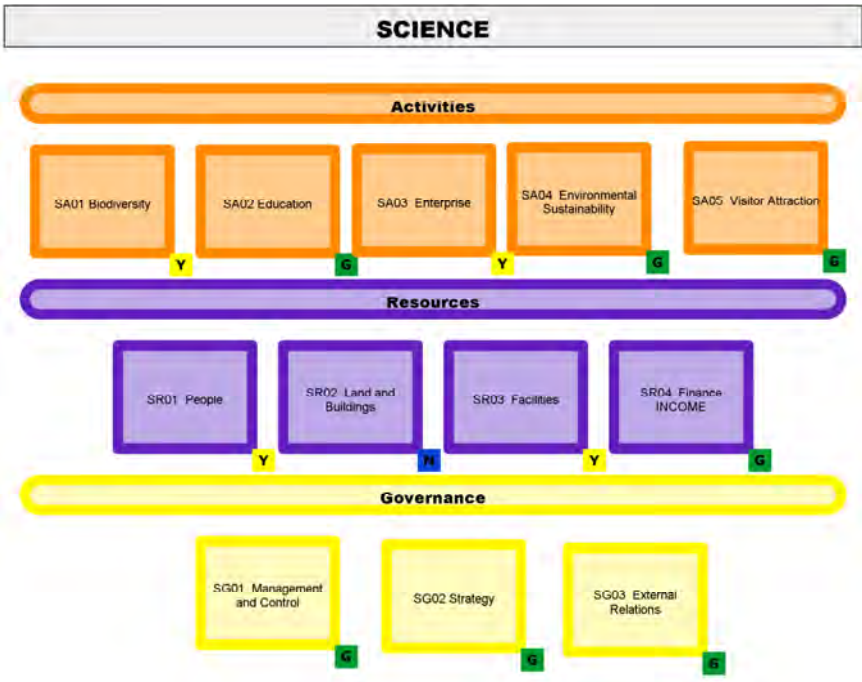


Figure 48 RBGE Science Division – Biodiversity Research Objective – November 2010



SA01.02 Number of Publications



Performance Analysis

No Information Entered

Recommendations

No Information Entered

SA01.03 Number of Publications by Impact Factor



Divisional Director's Comments

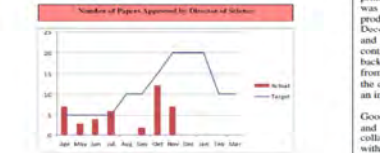
Science
Good progress in all research areas, with further submissions to high impacts journals from Tropical Group, Cryptogamic Plants and Fungi and Genetics and Conservation. Major grant proposals submitted to NERC and BBSRC.

Staff engaged with Scottish Science and RERAD programme has provided information to contribute to the final report of programme 3.

The gapped post in the molecular laboratories continues to be a major issue for research activity. It prejudices the ability of RBGE to take on and complete molecular studies, and is hampering our ability to support the personal international leading role that Pete Hollingsworth has in plant DNA barcoding. Physiology has been able to 'export' some critical microsatellite work to Ghent, though it is a pity that we have insufficient resources in Edinburgh to be able to capitalize on our own work. There is a major impact to delivery of the liverwort barcoding project (part of Work Package 3) and the timescale has had to be greatly extended. RBGE has a strategic requirement for a sequencing technician, and this must be addressed at the January mini-summit. Funding for the future scientific endeavour on Flora of Nepal, as well as publication costs. A printed version of the partially completed draft of the Flora of Nepal Volume was available by the end of the month, so that it could be used to stimulate production of the outstanding accounts during the meeting in Kathmandu in December. Visa issues for visiting overseas workers remains a critical issue and impacts the ability to employ non-EU postdoctoral staff. There are continuing storage and curation issues for Cryptogams, particularly Bryophyte backlog, the diatom collection and with confirmed new donations of material from Lancaster and National Museum of Wales. With the reduction in size of the curation team and the rising backlog of vascular plants, it is difficult to see an immediate way forward on these issues.

Good collaboration between Hort and Science staff continues to achieve GSPC and RBGE's strategic aims as outlined in Biodiversity Strategy. RBGE's collaborative programme with SNH will be discussed at a high level meeting with Susan Davies in December.

SA01.04 Number of Papers Approved by Director of Science



Attachments

No Attachments

Figure 49 Phycology Report – Supporting Biodiversity Research Objective Report

Y	SA01.10 Crypto and Fungi: Phycology Status	Sponsor
		David Mann Hans Sluiman
		Budget:
Executive Summary		
Phycology Research at RBGE focuses on two major groups: the diatoms (belonging to the heterokonts with the chromalveolate superkingdom) and the green algae (i.e. green plants excluding higher plants). Active research topics include speciation and phylogeny, with attention also to the practical implications of algal taxonomy for water quality monitoring. Core staff (Prof. David Mann and Dr Hans Sluiman) have been joined, since February 2010, by Dr Shinya Soto (Postdoctoral Fellowship, Japan Society for the Promotion of Science).		
From September 2010, David Mann is President of the International Society for Diatom Research, until August 2012. From December 2010 David Mann is Editor-in-Chief of the European Journal of Phycology.		
Intent	Performance	
No Entered	Fascinating new insights into the sexual reproduction and auxosporeulation of araphid pennate diatoms were obtained by Sato, showing a hitherto unknown mechanism of fertilization involving 'fishing' of female gametes by males, using some kind of 'tentacle'. Work is in progress to determine whether the 'fishing line' is cytoplasmic or mucilaginous.	
Objectives Impacted		
Y →	SA01 Biodiversity	
	Preliminary work on fungal parasitism of diatoms continued (Sato).	
	"A paper on "Phylogenetic relationships in Interfilum and Klebsormidium (Klebsormidiophyceae, Streptophyta)" was accepted for publication in Molecular Phylogenetics and Evolution. Two manuscripts submitted for publication in Fottea and in a symposium volume to be published in Poland were reviewed and edited (Sluiman).	
	Intron data were reviewed and preliminary phylogenetic analysis checked in preparation for publication. A micrograph of aeroterrestrial algae (Sluiman) was shortlisted for the BPS Hilda Canter-Lund photographic award competition and another accepted for the 2011 European Journal of Phycology cover design.	
	Mann spent most of November away from Edinburgh, on holiday, arranging his mother's funeral, and (in Naples) reviewing the progress of his two PhD students at the end of their first year; both are working on aspects of the diatom life cycle. Proofs of Mann's diatom barcode review paper were corrected; a historical review of diatom species taxonomy and speciation was published in Plant Ecology & Evolution. A paper on the effects of culture conditions on morphology of Nitzschia species was accepted and copy editing approved. A paper on the taxonomy of Nitzschia abbreviata was accepted subject to minor corrections.	
	A provisional agreement was reached with the Ghent diatom group that they would attempt to complete microsatellite analyses of the 2008 set of Sellaphora clones collected and isolated by Mann, Evans and Vanormelingen. With Sato's and STS's help, pellets were dispatched to Ghent for extraction and analysis.	

Training

The researcher had rebuilt the system from scratch after the major revisions to the Corporate Plan had taken place, which had arisen from the Planning Conference (September 2009), the Trustees' Strategy Day (October 2009), and the Strategic Review Group feedback (November 2009). He was, therefore, best placed to carry out the training with staff to remind them of the procedures for inputting, to illustrate the differences from the previous versions and to consult on relevant measures to track progress on a regular basis. Evidence of subsequent widespread reporting suggests that the one-to-one training sessions, which also involved discussions to obtain useful

ideas from the staff, had been effective and encouraging. Interestingly, some suggestions for further improvements and amendments from staff members at various levels of the hierarchy continued to come in to the researcher after the system had been up and running for some time. These suggestions indicated continuing interest and engagement with the process.

Interviews with Senior Staff (Triangulation)

At an interview with the Regius Keeper⁶⁰ it was established that he considered that using modern business tools was essential to make the case to Scottish Government for funding. He stated that the “RBGE is acknowledged for its leadership in plant biodiversity research, horticulture, and education – its strategic planning should be at the same level”. He recalled his early days at the RBGE [*The Regius Keeper took up his appointment in October 1999*] when the Corporate Planning process took up an inordinate amount of time of many staff but served no useful purpose either internally or externally other than it appeared to satisfy a Scottish Executive requirement to have a Corporate Plan. He believed that the production of such a plan was necessary before Grant-In-Aid funds could be allocated for the following financial year. He stated that “*I consider that being at the vanguard of performance management processes could only be an advantage when dealing with government officials and other stakeholders. Additionally, having a framework to assist with strategy formulation had been of great benefit to the Senior Management Group and the Board of Trustees when it had come to focusing on strategic issues that needed to be discussed and included in the Corporate Plan at the annual Senior Management Group Planning Conference*”. He further commented that: “*... in particular, the strategy map device had been very useful to articulate the Corporate Plan to various audiences – both internal and external. The culture of the RBGE, developing the performance management system had been challenging to develop to a configuration that encouraged staff members to participate but I feel that the effort has paid dividends as considerable inputs were now being made from across the organisation.*” He recognised that changing the culture of the RBGE had

⁶⁰ Interview with the Regius Keeper took place on 17th January 2011.

been necessary to enable staff to report on matters [*strategy*] that had not been required of them in the past. He stated that he and other members of staff had learned much about the balance of activities that were performed by the staff and that could not have been achieved as straightforwardly by other means. He believed this was feasible simply because the information was presented in a logical and coherent structure that could be tracked from the top level all the way down to section level. Consequently, not only was the system good for tracking progress with strategy but it also had become a first rate communications tool.

During the interview the Regius Keeper expressed his earlier frustration with the inability to determine how much it cost to carry out the activities at the RBGE or to lead changes in direction when priorities changed. He acknowledged that the RBGE had complex accounting arrangements in place to satisfy the requirements of the Scottish Government, Charities guidelines, and Companies Acts but none of these were of any direct assistance for managing the business of the RBGE on a day-to-day or even month-by-month basis. The researcher asked him if monthly management accounts were produced and distributed to all directors and managers to give up-to-date information on how the cost centres and divisions were performing. He acknowledged that was the case but felt that these accounts did not relate directly to what the staff members were actually doing and, consequently, were of limited value for active management purposes. He did accept that they were useful for determining the forecast cash position for the year end and, of course, was an essential element of the stewardship function for which he was responsible. As Accountable Officer he was under a duty to ensure that the RBGE kept within its allocated budgets and resources and this required him to be apprised of the financial position. When asked to comment on the utility of the constructs developed by the researcher the Regius Keeper expressed his satisfaction with the level of detail and on how the information directly related to the achievement of the corporate strategy. In particular, he stated these constructs encouraged a team component to the development of strategy which was of benefit to the Institution. Additionally, he was able to see how the formal organisational structure was making its contribution in a new way not hitherto possible with

the more traditional forms of management accounts. [*The Regius Keeper was referring to the type of information contained in Annex G*]. When asked what benefit he thought this brought to the organisation the Regius Keeper responded by stating that: “*There is much greater clarity over what staff are doing which allows a more rational process for determining priorities for activities to achieve the strategic objectives. We have to use the scarce resources available to us in the most efficient and effective manner*”. He also suggested some minor administrative changes to the reporting format. A short monthly summary would be inserted at the beginning of the report and a seasonal cover would feature on the front page along with the RBGE logo. The researcher enquired of the Regius Keeper what disadvantages these constructions brought to the organisation. The Regius Keeper acknowledged that there had been, of necessity, a much greater involvement of the directors in getting such a system to work effectively. This had taken time to achieve and required a new way of working to produce the reports timeously. The staff effort was driven much more by a reporting timetable than previously but these disadvantages were outweighed by the insights this system brought to management about their staffs’ activities. He also suggested that with usage the quality of reporting would continue to evolve and improve with the passage of time. He reminded the researcher that the Chairman of the Board of Trustees (Sir George Mathewson) had commended this system to Scottish Government ministers and senior officials as an effective model for the public sector.

The Director of Science (Professor Mary Gibby) in her interview⁶¹ intimated that the process had been somewhat challenging. The concept of regular and frequent reporting on scientific activity was new to her and her colleagues. However, she did state that using the strategy map framework to formulate strategy had been particularly helpful as it focused minds on the outcomes that the RBGE wished to achieve. Professor Gibby stated: “*When the RBGE aligned itself to Scottish Government’s National Outcomes the strategy map assisted with placing the RBGE’s work in context with that of Scottish Government and its Science strategies. This had proved to be beneficial*

⁶¹ Interview with Director of Science took place on 11th January 2011.

when the Science Management Group were debating their future plans". When questioned about the performance management system that the RBGE had put in place Professor Gibby stated that she initially had difficulties with understanding what was required of her and her colleagues. When pressed further on why this was the case she stated that she had never had to report on such a regular basis and that in the past the only periodic reports were to the Board of Trustees which did not follow any particular format or relate to specific strategic objectives. She did state that half yearly appraisals were held with staff to check on progress with their work. Professor Gibby commented that: *"The first iteration of the performance management system had been hard to follow even although it had been my own staff that had been instrumental in its design. It had become difficult to understand in context of the whole of the RBGE because the staff had tried too much to reflect their own work in a hierarchical structure rather addressing the strategic objectives and activities that were required to be reported on"*. However, she did suggest: *"Valuable lessons had been learned and that the second version had been much simpler to comprehend and to report on. Additionally, it was much clearer where the alignment of objectives in Science lay in relation to those of the RBGE as a whole"*. However, latterly her staff had put considerable effort into reporting on their progress and highlighting obstacles to progress and she had seen the benefit of the system and actively participated in the system and she now used it to enhance her case for additional support when addressing the Senior Management Group at their monthly meetings. Additionally, she was also more aware of the issues that were faced by the other divisions, both from actions of her own Division and more generally as an Institute.

In an interview with the Director of Horticulture⁶² (Dr David Rae) the corporate planning processes and the performance management systems were explored. Dr Rae said: *"Having seen the corporate planning process over a period of some 30 plus years, although not always as a participant, I can clearly see the benefits of having a framework to assist with ensuring that the organisational activities are properly aligned to those of the*

⁶² Interview with Director of Horticulture took place on 11th January 2011.

Institute's goals. Since using the Balanced Scorecard, I have noticed that it is a much more efficient and less bureaucratic process to complete the corporate plan from the days when each of the divisions had to write long documents in support of the Corporate Plan, which eventually were simply filed and ignored for the remainder of the year. I attribute that to the clear alignment from the corporate scorecards to the divisional scorecards which ensured that any divisional activities are clearly in support of the corporate objectives and cut out activities that did not support the higher level goals".

He also found the process useful for communicating the RBGE's plans and aspirations to his staff which were located over four discrete and geographically distant sites. When questioned about the usefulness of the performance management systems (ESM) Dr Rae admitted that he had initial concerns about the amount of effort that would be required to maintain such a system. He did compare the ESM with the annual reports to Government that had been previously required. He did acknowledge that these earlier forms of reports only confirmed the work that had been carried out and served no useful in-year management purpose as by the time they had been reported on the following financial year was more than a quarter complete. When pressed about whether he thought it was useful to have current management information to assist with strategy execution Dr Rae agreed that it was and that he commented: *"I am able to discuss with my management teams what progress has been made and what further work is required to achieve their agreed objectives. I think that it is very useful to see the alignment between the corporate objectives and those of my own Division".*

When discussing the ease of operation of the performance management system Dr Rae explained that at first he had elected to complete most of the report boxes himself. His logic for this was to better understand what would be required of his staff and to be able to give guidance to them when they commenced reporting. He learned much about the system and how to navigate his way around it but did admit that it was a lot of work for one person to complete. The researcher did remind Dr Rae that it had never been the intention for one person to do the work and that conversely the idea was that the more staff that got involved the richer the information coming forward would be as differing perspectives on progress would be captured.

Dr Rae agreed that had been the case since he had instructed a much wider group of people to get involved. The quality of reporting, although variable was all well intentioned and provided useful feedback to the Division as a whole to share ideas and to forward issues for solutions that could not be solved by Horticulture Division on its own. Therefore, on reflection Dr Rae believed that the planning and strategy management process had been a success, particularly the revised version that was now in use. It engaged much more staff than any previous system at the RBGE that he had known in his 36 years' service there.

Teach and speak about the Innovation

The lead partner (Mr Gary Devlin, CA) of Grant Thornton UK LLP, the RBGE's external auditors, had expressed an interest in the developments of these systems at RBGE and had requested a briefing from the researcher. Subsequently, Mr Devlin recommended to Mr David Lowrie, the Head of Operations of the Scottish Information Commissioner (a public sector body) that he visit RBGE to obtain a briefing and demonstration of the work carried out by the researcher as the Commissioner had been trying to implement the balanced scorecard but had been unable to make the connections between their inputs and outputs using the Kaplan and Norton model. On 10th February 2010 that meeting took place. The researcher has since learned that the Scottish Information Commissioner was attempting to implement a similar system to that of the RBGE.

On 20th May 2010 the researcher, at CIMA's invitation, presented his work to CIMA's Decision Making Forum which comprised senior finance professionals from blue-chip organisations, including Alliance-Boots, Aviva, Avnet, BAe, BAT, BBC, Ford, NEC, Network Rail, Rolls-Royce, Unilever and Royal Dutch Shell. The forum were interested in the concepts being presented and, apart from questions about participation and effort required to develop the ideas and then the systems, the most interesting question came from the British American Tobacco representative who asked whether there was any intention to use the objective costing system to become a basis for budgeting. The researcher replied that at the time the data was insufficient to form a basis for budgeting but after a year of data collection then

budgeting using objective costs could be a very strong possibility which would take the concept a stage further on.

On 6th July 2010 a launch of the Research Executive Summary written by the researcher and sponsored by CIMA took place at the RBGE and was attended by CIMA, ICAS, and ACCA members as well as some academics from the University of Edinburgh and Edinburgh Napier University (55 attendees) - “...a comprehensive presentation about his work [the researcher’s] which was followed by around 40 minutes of excellent questions from the floor. The report “**Garden Designs to Improve the Line of Sight**” [CIMA Research Executive Summary] generated significant press coverage and we are pleased that Alasdair [the researcher] is now extending his work to cover China and the Americas.”⁶³ Subsequently, CIMA staff presented a case to the General Charitable Trust for further funding to support the researcher’s work; a further £10,000 was allocated by the Trust to fund this additional research which will be carried out in 2011.

On 22 July 2010 Dr Xiaoxuan Li, Director of the Management Innovation and Evaluation Research Center, Chinese Academy of Sciences, Beijing wrote by e-mail to the researcher “Dear Alasdair Macnab.....I am very interested in your publication about how you developed the Balanced Scorecard (BSC), a strategic objective costing system, and your supporting Performance Management System (PMS) which is based on a strategy mapping process related to the BSC in the letter. I really hope we can have chance for cooperation in this research field in the future.

The Management innovation and evaluation research center of CAS established in 2000, mainly focuses on the research of performance management and evaluation of research institutes of CAS, including some botanic gardens.....”⁶⁴

⁶³ CIMA Research and Development Group Papers dated 9th September 2010.

⁶⁴ E-mail From Lixiaoxuan@casipm.ac.cn dated 22 Jul 2010

Strategic Objective Costing

In a previous section reference was made to the trial on objective costing and in Figure 48 above a measure entitled “Activity Costs – Biodiversity Science” can be seen. The RBGE’s management accounts are prepared to report monthly on cost centre performance within the envelope of the parent divisions. The cost centre structure is based on the administrative structure of the RBGE where most of the cost centres reside (including a few specialist sections). There were three divisions until August 2010 when a new fourth “Enterprise Division” spawned out of the other three divisions (although mostly from Corporate Services Division). This structure satisfies the typical command and control environment and where financial variance analyses are carried out to correct adverse trends to ensure spend is as close to a zero outturn from budget as is possible at the year-end. The budgets in RBGE are delegated according to this structure. No connection was made to the non-financial outputs (and, therefore, strategy execution), which arguably are as important, if not more so, than financial measures, particularly in public sector and not-for-profit organisations. These arrangements are very normal in public sector financial management and might be satisfactory if the strategy was carried out by staff operating strictly within their cost centres. However, as commonly found with some public sector organisations structures do not necessarily follow strategy and, therefore, there is at the RBGE inherently a disconnection between the financial information provided and reporting on the achievement of strategic objectives where non-financial KPIs may be more informative. Cost centre accounting/Activity Based Costing systems may be adequate for organisations which deliver strategy through cost centres but it does not account so effectively for the costs to organisations where staff work cross-divisionally and in cross-cutting themes unless a fairly complex and, of necessity, bureaucratic mechanism is installed. What may be of more interest to senior management is to discover where the real efforts of employees are focused. This information and the costs of each of the strategic objectives may be more useful than attempting to allocate all overheads against the output activities (as is done in Activity Based Costing systems). Decisions may require to be made about where to direct efforts to maximise efficiencies and effectiveness. It will, however, be simpler to use

financial terms as a proxy for comparison and/or redirection of effort. Consequently, a different model is required to capture the time and costs that these staff put into the various activities that contribute to the execution of the corporate strategy.

At the RBGE the staffs work cross-divisionally to achieve the strategic objectives fusing the necessary expertise into teams to see specific projects through to satisfactory conclusions. This means that the true costs of achieving the strategic objectives cannot be collected by relying on the cost centre structure and as a consequence rational allocation of resources becomes very difficult to achieve. This notion was brought to the researcher's attention by the Head of Education making a claim that his Department had made a profit (income from course fees less direct staff costs) but Science Division staff remarked that, of course, he had not taken into account any of their time which was detracting from their scientific endeavours. There was no system in place to cost staffs' time into activities that were performed outside their own cost centres.

To rectify this issue the researcher considered how to capture staff time and other financial expenditure and allocate it against the strategic objectives. The accounting system that was designed by the researcher is known as Strategic Objective Costing and is believed to be new to the applied science of management accounting. None of the RBGE systems for managing performance, finance, or HR were set up to deal with this requirement. Each activity being measured as part of ESM had a unique code and was structured to follow the objective coding system; initially, there were more than 100 different activities being tracked.

Finance Expenditure Codes

The finance system was amended to demand two codes: one for the traditional cost centre systems necessary for producing financial accounts in accordance with the Scottish Government Finance Manual, the Charities SORP, and Companies Acts; and a second code to allocate costs against a departmental activity. Over 100 activities were being tracked through the performance management system and this was considered too high a number to cope with in our Finance System. The decision was taken, in consultation

with the Finance Department, to code up expenditure against the strategic objectives at departmental objective level (i.e. sub-divisional level but not as low a level as activity). This was because the Finance System could not provide a drop down menu like the HR system and, therefore, too many choices would be available to the user to code against, thereby increasing the likelihood of errors. This decision meant that there would only be in the region of 30 codes to choose from, although most users would just be coding against three or four objectives within their areas of responsibility. In practice most staff who had responsibilities for initiating or approving purchases kept an aide memoire with only the codes detailed that affected them, thereby further reducing the likelihood of errors occurring. To ensure that coding did take place two codes were demanded; the cost centre code and the strategic objective code and without both codes the invoice would be rejected and sent back to the originator for correction before the payment could be made. The necessary software changes were made to the Finance System by the System Integrators and future changes to codes could be made locally thereafter, thereby reducing the cost of any future changes to that of Finance staff time. The system worked well with few bedding-in problems. Non-salary expenditure equated to approximately 28% of total expenditure. The sections above described how the objective costing system was trialed and proved to be of benefit. As a consequence of the major redesign of the performance management system following on from the radical reshaping of the Corporate Plan the researcher commissioned alterations to both the HR system and the Finance system to take account of the new coding structures necessitated by these revisions. These changes could be made by the local administrators (RBGE staff) in under a week of part time work. Once the researcher had agreed the new codes he then had to update ESM with the new codes and assign them against the activities and objectives in the corporate and cascaded scorecards. This took the researcher about four half days of intensive work on the system (ESM).

Standard Query Language Extraction

These two systems (HR and Finance) exported the data on costs into Excel spreadsheets which were sorted against the agreed coding structure. ESM was able to perform a Standard Query Language (SQL) query on the

spreadsheet outputs from these two systems and allocate both staff costs and non-salary financial costs to the activities being tracked within ESM. These costs (known in the software application as “driver measures” which totalled to the objective cost) appeared as a measure in each objective and the component work sections contributing their efforts to the achievement of the objectives could be viewed through the drill-down mechanism built into ESM.

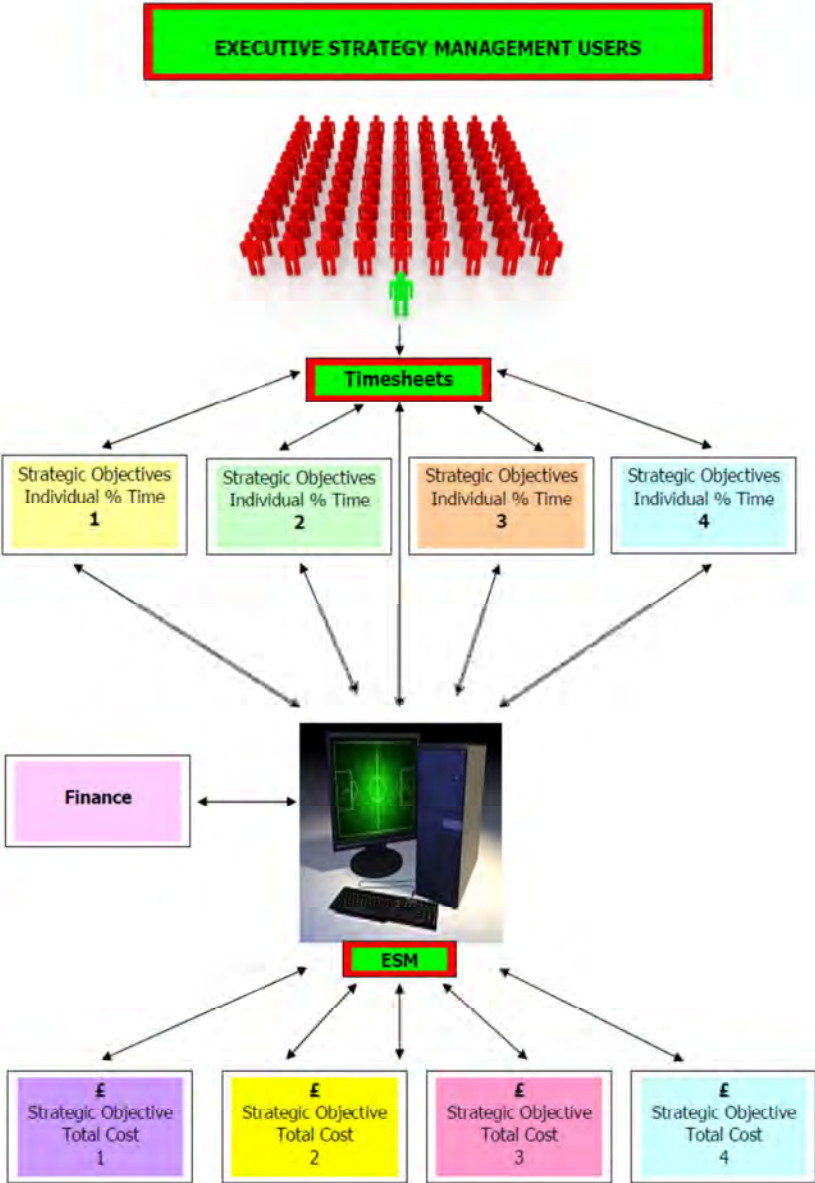
Abstraction of Costs from Activities to Strategic Objectives

ESM was also able to abstract the objective costing information up the scorecard system to provide costings at the corporate/strategic level. However, the costing information is capable of being presented at individual activity, divisional, and strategic objective level, and is fed into all the separate activity reports by ESM, which provides visibility of costs/effort to operational managers. This would make it possible for senior management to decide whether the best use of scarce resources was being achieved. Although most staff were homogenous in skill sets within their own cost centres and, therefore, not easily deployable to alternative employment, there were activities they were engaging in that could cease if greater resource effort was required within their own skills area; e.g. some scientists and horticulturists could cease some management and educational activities. Equally, staff could be directed to undertake duties not normally associated with their usual employment but was within their skills set and would benefit the Institution e.g. writing grant proposals to support their scientific research activities. This strategic objective costing system would allow management to consider redeployment of skills/knowledge and assess the impact of such decisions with the subsequent reporting that would take place during the course of the year and the impact on the PIs and KPIs. It is worth stating that the output from the HR.net spreadsheet on objective costing was at that time limited to total costs based on inputs from individual staff members. There was no ability to identify individual staff members from this data but this issue would be addressed through development of the costing system in 2010.

An example of the comparison of the high level outputs from these two costing systems is shown in Figure 36 above. If we can determine this

A summary of the strategic objective costing processes is shown in the graphic at Figure 51 below.

Figure 51 Strategic Objective Costing Processes Schematic – RBGE



Strategic Objective Costing Outputs

The descriptions of strategic objective costing above have been concerned with how data has been entered into the system but, of course, that has no inherent value unless information is obtained from the system and put to some use. The usage will be discussed in a later section.

The principal purpose of strategic objective costing is to provide information to senior management on where staff effort is being deployed – either directed or self-managed so that improved evidence-based decision-making can occur. The Excel outputs shown in Figures 52-56 provide data on distribution of effort (a proxy measure which combines staff time and financial expenditure for each objective) and compares the current month to the previous two months showing variances by percentage; and divisional contributions to each strategic objective month by month.

What can be seen from the outputs is that effort does vary from period to period indicating that effort can be managed.

Figure 52 Comparison of Strategic Objective Costing Output - Prior Month to Current Month – RBGE

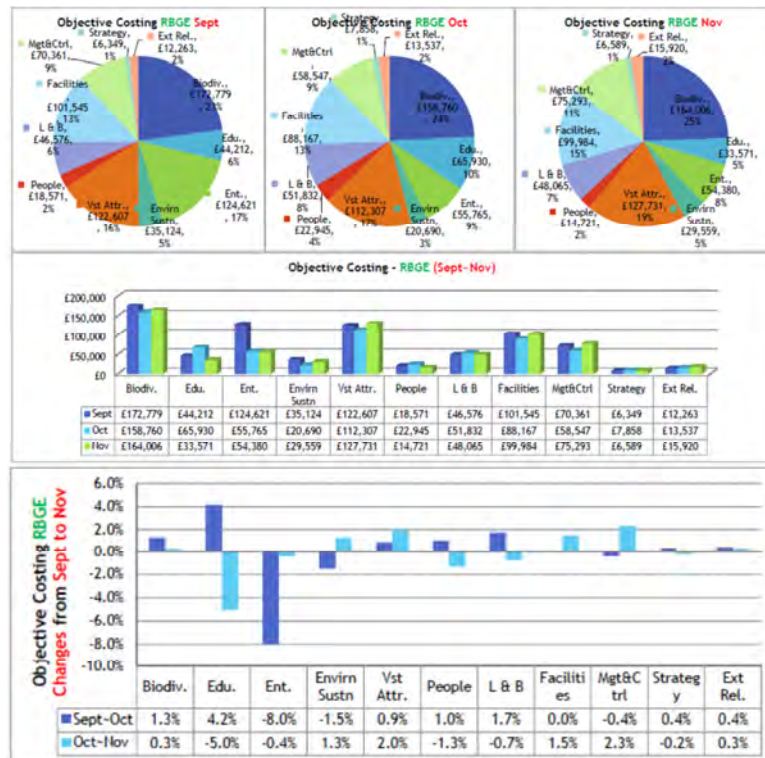


Figure 53 Contributions to Strategic Objectives from RBGE Divisions – November 2010

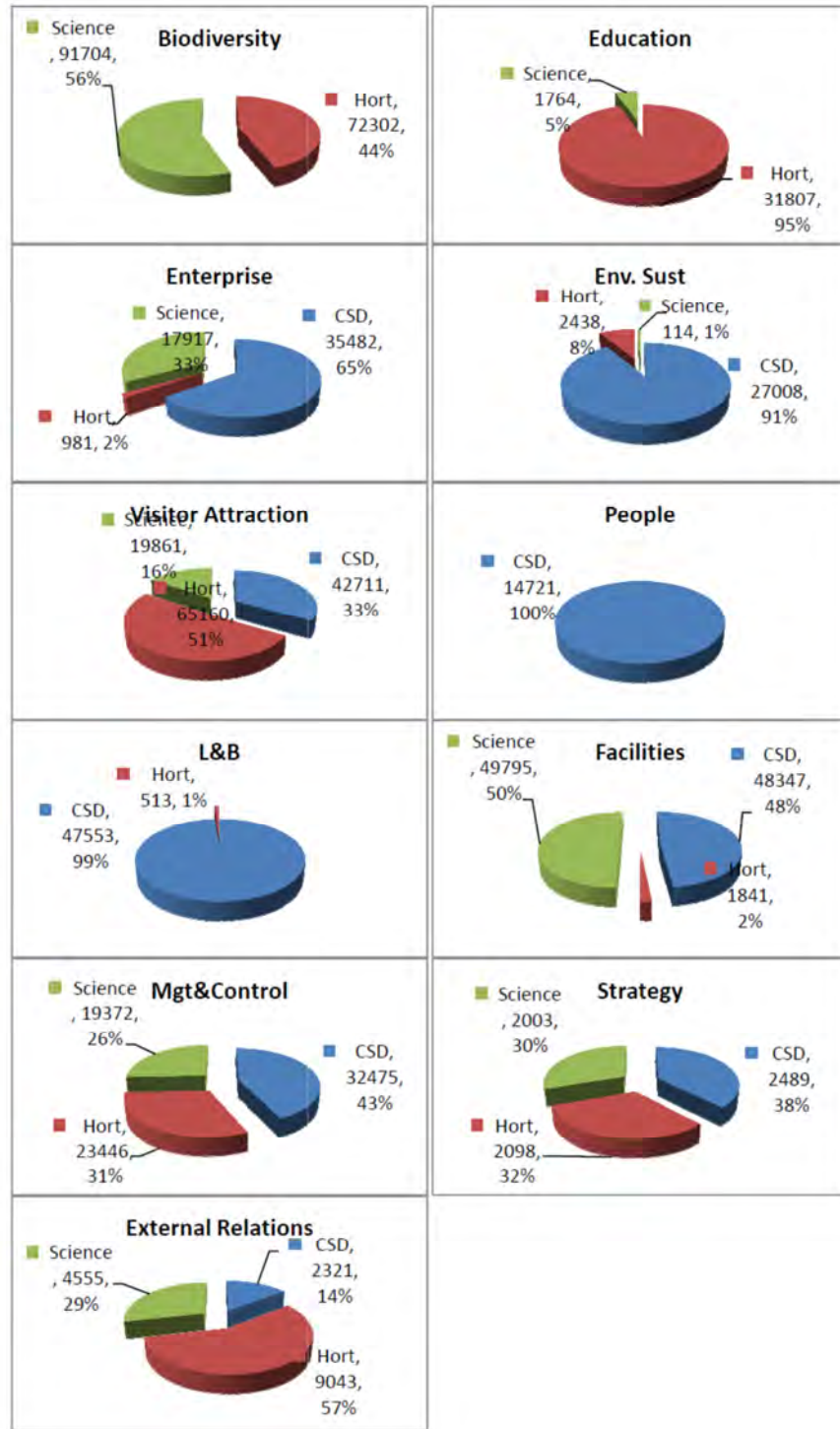


Figure 54 Corporate Services and Enterprise Divisions - Comparative Contribution to Strategic Objectives

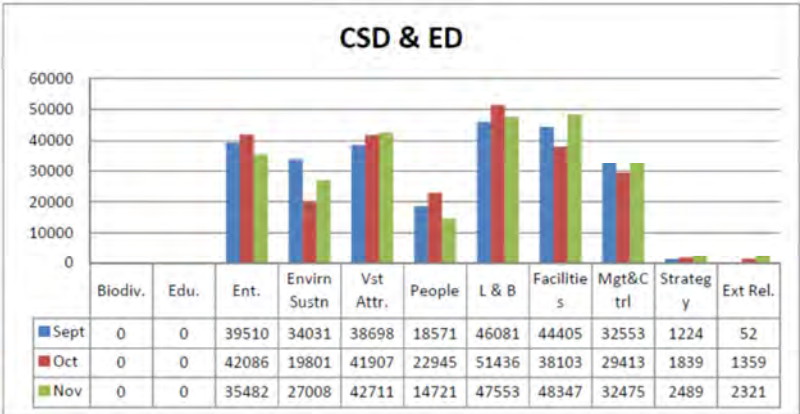


Figure 55 Horticulture Division - Comparative Contribution to Strategic Objectives

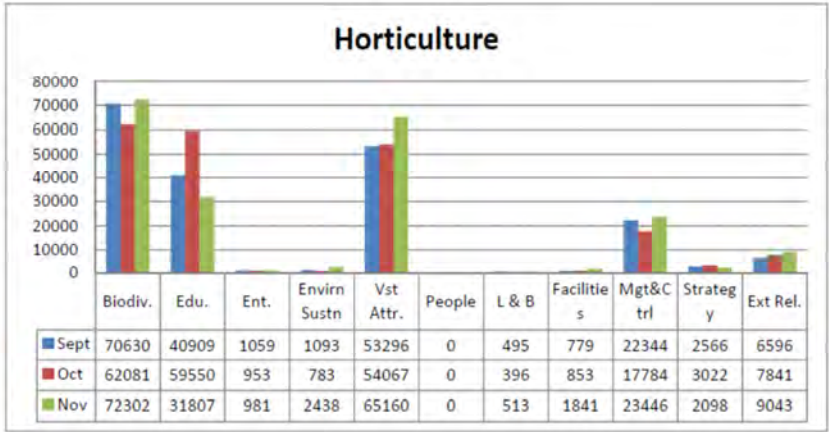
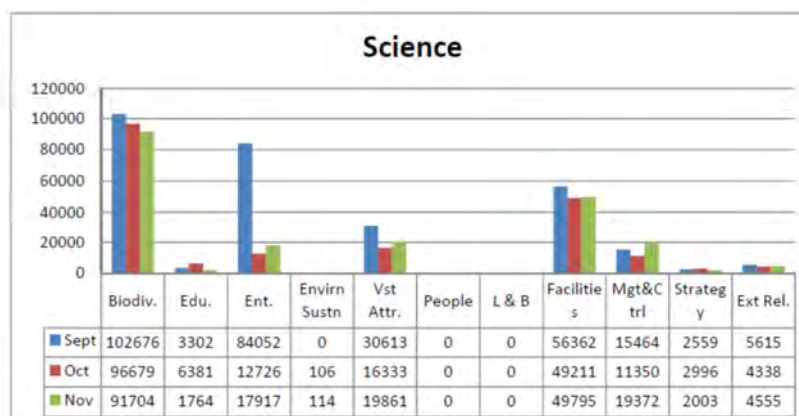


Figure 56 Science Division - Comparative Contribution to Strategic Objectives



However, without some analyses of this data these outputs have limited value. Consequently, from October 2010 a report on each division's performance on each strategic objective relating costs and risk scores to the achievement of KPIs against targets were produced to enable Senior Management to take meaningful decisions based on evidence of achievement of strategy execution.

When attempts were made to identify which staff had contributed to each objective and in what quantity some errors were found in the reports. Some of these errors were operator induced within the HR department which were easily resolved but others were system errors which required to be resolved by the ActiveHR Ltd (the solutions providers for the HR system). This was done and the data rechecked for its integrity. A satisfactory level of accuracy was achieved. An example of the performance report is contained at Annex G, which could now also include an appendix showing information on which staff members contributed to each strategic objective, and also how the staff members grouped by cost centres contributed to one or more strategic objectives.

The detailed analysis of costs (see Figure 57 for the template) sets out to show which members of staff have contributed what percentage of time to each objective, and, if required, a detailed analysis of financial expenditure can also be provided. By having a comprehensive understanding of how the

costs are built up, then rational decisions can be made to change the variables (principally by redirecting staff effort from objective to another) and then follow the changes in output as a consequence. Figure 58 below shows which cost centres provide the resources to achieving each objective, thereby permitting the management chain to take responsibility for strategic management within the extant organisational structure. This process does require a collegiate style of management where each divisional director understands his/her contribution to the strategic objectives whether or not primary responsibility for their execution lies within his/her sphere of direct influence. They must be willing to make the necessary contributions with the resources under their control for the benefit of the organisation as a whole. When this is achieved a truly strategic management process is in place (a schematic of the strategic management costing process is shown in Figure 59 below).

Figure 57 Staff & Finance Costs Allocated against Objectives and showing KPIs

Strategic Objective	Staff	Cost Centre	% time spent on the objective	£	KPIs	Monthly		Cumulative	
						Target	Actual	Target	Actual
RA01 Biodiversity	A	SB	25	xxxx	RA01.02 Number of Accessions in Living Collection	34400	34962	N/A	N/A
	B	SB	50	xxxx	RA01.03 Number of Recovery	N/A	9	N/A	N/A
	C	SB	10	xxxx	RA01.04 Number of Publications	15	1	80	45
	D	SB	20	xxxx	RA01.05 Number of Specimens in	2000	1446	4E+05	399074
	RA01.06 Value of Research Grants	N/A	5600	N/A	N/A
				Total Staff Cost for RA01	xxxxx				
				Finance Cost for RA01	xxxxx				
			Total Costs for RA01	aaaa+bbbb					
RA02 Education	A	SB	30	xxxx	RA02.02 Number of Short Course	N/A	159	N/A	N/A
	B	SB	50	xxxx	RA02.03 Number of Diploma	N/A	27	N/A	N/A
	C	SB	20	xxxx	RA02.04 Number of Certificate	N/A	129	N/A	N/A
	D	SB	16	xxxx	RA02.05 Number of HND Students	N/A	37	N/A	N/A
	E	SF	20	xxxx	RA02.06 Number of BSc Students	N/A	18	N/A	N/A
	F	SF	20	xxxx	RA02.07 Number of MSc Students	N/A	18	N/A	N/A
				Total Staff Cost	xxxxx				
			Finance Cost	xxxxx					
			Total Costs	xxxxx					

Figure 58 Cost Centre Contributions to Strategic Objectives

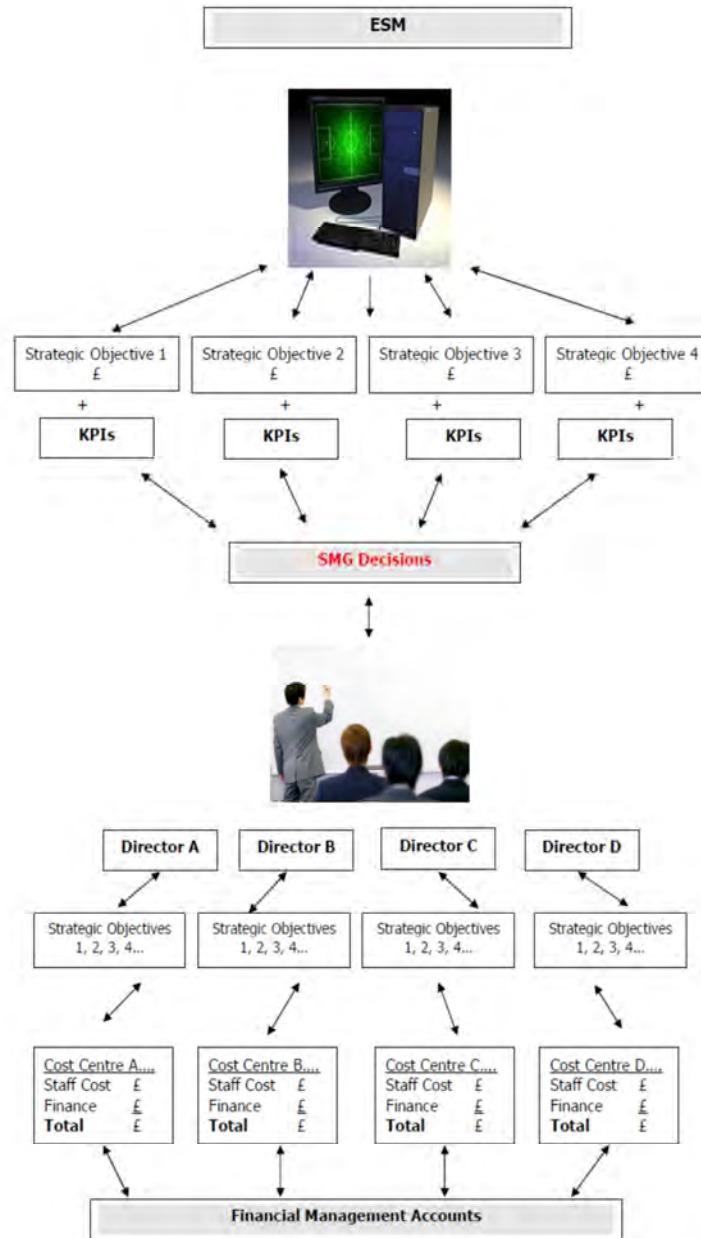
Science Division			Strategic Objectives	RA01 Biodiversity	RA02 Education	RA03 Enterprise	RA04 Environment Sustainability	RA05 Visitor Attraction	Absence
Cost Centre	Staff	£	Staff	Time (%)	Time (%)	Time (%)	Time (%)	Time (%)	Time (%)
SB (Conservation and Genetics)	A	xxxx	A	25	35	10	30	—	—
	B	xxxx	B	50	50	—	—	—	—
	C	xxxx	C	10	20	—	—	—	70
	D	xxxx	D	20	15	10	25	30	—
	Total Staff Cost for SB	xxxxx	Total Staff Cost on each Objective	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Total Finance Costs for SB	xxxxx	Total Finance Costs on each Objective	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
Total Costs for Cost Center SB	xxxxxxx	Total Costs for each Objective by SB	aaaa	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
SF (Floristics)	E		E	70	20	—	10	—	—
	F		F	50	20	—	—	—	30
	G		G	—	10	—	—	80	10
	Total Staff Cost for SF	xxxxx	Total Staff Cost on each Objective	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
	Total Finance Costs for SF	xxxxx	Total Finance Costs on each Objective	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx
Total Costs for Cost Center SF	xxxxxxx	Total Costs for each Objective by SF	bbbb	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	
Total Cost for RBGE	xxxxxxxxx	Total Costs for each Objective	aaaa+bbbb	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	

An example of the data produced from the system in the format described in Figure 58 is appended to Annex G (example Performance Report).

Initially, only the total staff effort attributed to the supporting activities were extracted from the HR system. Since the data detailing individual staff effort by staff time allocated to each objective has been produced (November 2010) line managers have been able to see where each of their staff members has been directing their efforts. When necessary it will now be possible for instructions to be given to staff to change their effort mix on activities to ensure achievement of the personal objectives set them as their contributions to the divisional goals which lead to the accomplishment of strategic objectives. Shortly after the first issue of the report on staff activity the Director of Science noticed that a member of her staff was spending far too much time on “management activities” (Trade Union and Health and Safety matters) that his professional duties were being compromised. She resolved to redirect his efforts! The possibility does arise that staff members may attribute their time to the duties that they perceive would be acceptable by their management. However, that would result in increased time being allocated against an activity they were not actually doing and the risk to those staff members arises that if they were not producing the quality and quantity of work expected from that apparent effort then that could lead to

them being placed on a poor performance programme. It is not, therefore, in their interest to be economical with the truth about what they are actually doing. To date the researcher has not noticed any evidence of this type of dysfunctional behaviour. Other members of staff have commented that they were pleased to see that their activities in support of “non-core” objectives were being recognised and that a form of value was being placed on them.

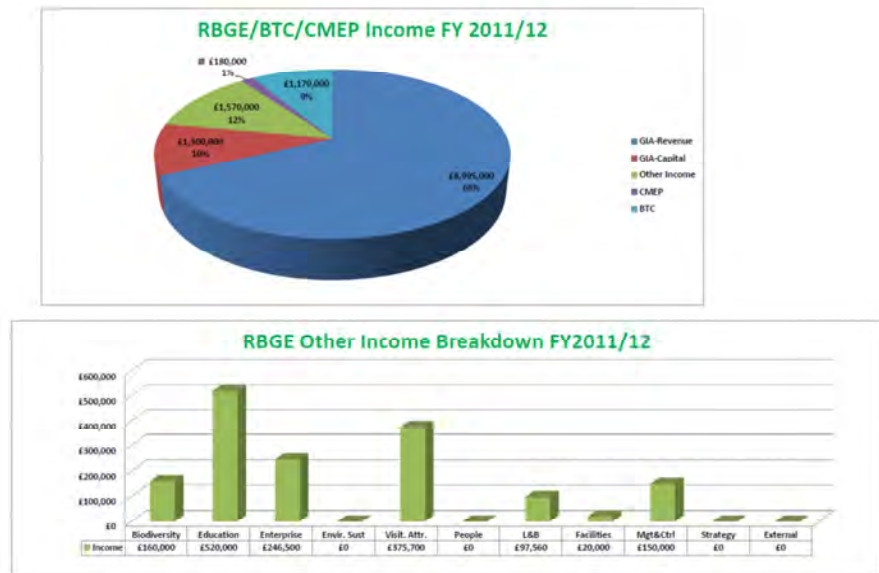
Figure 59 Strategic Management Costing Process



Strategic Objective Budgeting

At the CIMA sponsored Decision Making Forum held in May 2010 the researcher presented his work and was questioned about the potential for Strategic Objective Budgeting (SOB). At the time the researcher was unable to confirm whether that would be possible due to the lack of sufficient data. However, in January 2011, it was decided by the Senior Management Team that sufficient data was available to produce a first SOB. The data was calculated based on nine months actual data and compared with the previous year's costs, adjustments made and the budget was compiled for the Corporate Plan to be in operation from 1 April 2011. As part of the process, assessments were made of likely income and attributed against the various strategic objectives, which had supporting activities that generated that income. The results of that process are shown below in Figure 60 below.

Figure 60 Assessed Income - Financial Year 2011/12



Note: GIA is the acronym for Grant-In-Aid – Government Funding

RBGE receives an allocation of Grant-In-Aid from Scottish Government and projects what other income is likely based on forecasting techniques that are in common use. It is worth stating that not all departments can raise income and therefore the philosophy adopted is that those that can will do so to provide the total resources for the RBGE which can then be allocated

according to priority and need. Figure 61 below shows the allocations for FY 2011/12

Figure 61 Budgeted Allocation of Resources against Strategic Objectives - RBGE and Divisions



However, what we can see from the income assessments for the commercial activities (e.g. retail, education) is whether the costs are reasonable in

relation to the benefits. For example, in the past it would have been impossible to determine whether the education offers were commercially viable as only direct costs arising from the Education Department's cost centre were attributed against the income and on the face of it made a profit and therefore a contribution to the RBGE's financial resources. When other staff members' costs (scientist and horticulturists) are factored into the equation the true cost of providing the services can be determined and decisions taken on continuing viability *vis a vis* those staff concentrating on their core activities. There are, of course, activities that are mandated by the Scottish National Heritage (Scotland) Act 1985 and not every activity that can charge for its delivery is expected to make a profit but value for money is a necessary condition for continuance of activities.

After determining the likely available resources the next stage was to allocate the budgeted costs from these objectives to the cost centres in which the various supporting activities took place and contributed to these objectives. The basis for allocating the financial resources against the strategic objectives was on the current year's data. Initially the budgets were issued to the divisional directors who were provided with an indication of the resource for their whole division. The directors were asked to consider these allocations and make any adjustments as to where they wished the non-salary resource to be re-allocated either against the cost centres or against the objectives. The directors responded with amendments due to changed priorities for the next financial year. The Finance staff were then informed of the final allocations and they uploaded the data into the *SunSystems* financial system and allocated the budgets to the managers with letters of delegation from the Regius Keeper (the Accountable Officer) in the normal way. However, on this occasion additional information would be provided as to where the staff effort was expected to be directed thereby maintaining the alignment between staff and corporate objectives.

The Head of Finance, Mrs Jane Neville FCMA, commented: "*The ESM system provides highly accessible and widely disseminated performance and financial information. The financial systems at the Royal Botanic Garden Edinburgh are complex due to the requirements of company and charity*

legislation, the government accounting regulatory framework and the multiple information needs of the many grant awarding bodies that fund our work. The ESM system provides extensive performance and financial information which is accessible to all staff and provides a high level picture of where resources, particularly staff time, are being utilised. By linking costs to objectives the Directors have been able to focus effort on the outputs while aware that the integrity of the underlying financial systems satisfies the on-going legislative and operational requirements. The two systems work well together to provide the information needed to enable the Royal Botanic Garden Edinburgh to deal with the challenges posed by the current economic environment”⁶⁵. Another advantage of this system was that the Senior Management Team was able to see how the organisational effort was distributed against the strategic objectives on the strategy map, which also would have the risk profile map alongside, and take a view as to whether the high level budget allocations were sufficient to meet our needs. The Director of Enterprise, Mrs Heather Jackson, commented: “ESM is an exceptional business tool, allowing managers to view strategy performance at a glance. Combined with the Strategic Costing System, decisions on cost centre budget allocations and future strategy development can be made, using up-to-date factual information, saving both time and money”⁶⁶.

Although the income was “fixed” at this point in time the distribution of resources could be altered. For the forthcoming year there was satisfaction at the allocations but as time passes and more experience of this process is gained then more challenging discussions can arise about the appropriateness of such allocations. Of course, as the financial year progresses the allocations can be altered and it will be possible then to see the impact of the changes as there will be the ability to make judgements about the impact on the KPIs.

⁶⁵ Comment made by Head of Finance, RBGE to researcher at a meeting on 23 February 2011.

⁶⁶ Comment made by Director of Enterprise, RBGE to researcher at a meeting on 20 January 2011.

This construct of Strategic Objective Budgeting and Costing has the potential to radically alter the way the Board and Senior Management are able to review their strategy more effectively as the resources allocated to specific activities can be aligned with the outputs/outcomes allowing a more insightful assessment of the attainment of the KPIs. Gary Devlin, Head of Government Assurance in Scotland, Grant Thornton UK LLP (the RBGE's external auditors) commented: *"It provides a systematic, cohesive and practical framework for drawing together the various strands of corporate activity, to ensure they are targeted and focused on meeting the needs of service users and stakeholders. I highly recommend it."*⁶⁷

Teach and speak about the Innovation

On 5th October 2010 Mr Paul Snaith FCMA, Director of Corporate Services, The Forestry Commission – a UK public sector body headquartered in Edinburgh - met with the researcher to discuss the implementation of the RBGE's system. His motivation for the visit was that he had seen the researcher's Research Executive Summary on the CIMA website. The Forestry Commission had tried to carry out a similar exercise but had failed to successfully make the connections between outputs and outcomes and had no means of linking costs to objectives. He expressed interest in the RBGE's work and stated that he would consider how such a process could be introduced to the Forestry Commission, although he was slightly concerned about the effort required to introduce the system. The researcher explained that the success or failure of any introduction of a change management process would be largely dependent on the commitment and drive of the leadership team within the Forestry Commission.

On 20th October 2010 the researcher met with Mr William Harrod of Valuta, a consulting firm employed by, amongst others, Scottish Government to drive forward corporate performance. Harrod, the Managing Director of Valuta, had recently carried out an Office of Government Commerce Gateway review of the RBGE's Visitor Centre Project in Edinburgh on behalf of Scottish Government and had learned of the researcher's work

⁶⁷ An independent reference for a CIMA Award for Innovation in Business 2010.

from the Regius Keeper. He had requested a briefing from the researcher on the work achieved to date. He said: *“I am impressed with the RBGE’s ability to make the linkages between activities and impacts and to the best of my knowledge very few public sector organisations have been able to do that successfully. Furthermore, the Strategic Objective Costing system, and its connection to KPIs, is of particular interest as it shows a direct input-output linkage which would be of great benefit to organisations if they could implement such a system”*.

Later on the same day (20th October), Mr Campbell McLundie CA, Business Development Partner of Scott Moncrieff LLP, a mid-sized firm of chartered accountants met with the researcher for a similar briefing. His comments were similar to those of Harrod (above) and he also expressed great interest in the Strategic Objective Costing process, about which he said: *“I feel this [system] could have enormous benefits for public sector organisations”*. McLundie had been involved with the RBGE in the SPRIG exercise carried out some years earlier (see above).

The researcher was invited by the Chair of the CIMA Business Group (North West England and Wales) to present to a business conference in Manchester for businessmen, accountants, lawyers, management consultants, and marketers from the across the North of England and Wales. Due to the popularity of the conference (venue capacity of 120) a repeat performance was booked for 25th November which was also booked to capacity. There were three other speakers who presented on shared services, employment law, and a case study on a company’s experience on lean manufacturing. The feedback from both these conferences was extremely positive and particular interest was shown in the amount of effort required to implement the RBGE system as many members of the audience could see some benefits accruing to organisations’ management of performance. Interestingly, almost all of the audience were from the private sector for which the processes had perhaps less relevance than for public sector and not-for-profit organisations.

On 15th December Mrs Myriam Madden FCMA, the Director of Operations at Creative Scotland (a newly created NDPB which funded the arts and

culture programme in Scotland), was provided with a briefing on the RBGE's constructions for both the Balanced Scorecard and the Strategic Objective Costing models so that she could assess their applicability to her own organisation. Her interest had been formed from her reading of the researchers CIMA Research Executive Summary published in July 2010. Mrs Madden, a CIMA Council Member and President of CIMA's Edinburgh Branch, stated at the end of the visit: "*There is a lot to take in but I think there is great scope for a series of presentations to CIMA members if you [the researcher] were willing to undertake them*".

Write articles

Outputs required by CIMA were a Research Executive Summary⁶⁸ and an article to be published in the Institute's monthly professional journal *Financial Management*⁶⁹ circulated to 170,000 members in 161 countries. These were published in June 2010 and August 2010 respectively; a condition of publication is that they were peer reviewed under a double blind review process (academic and practitioner).

On 8th July 2010 the researcher received an e-mail from Randy Russell, the Vice President and Director of Research, Palladium Group⁷⁰ which included the following text, "...*The work you have shared is of interest and I have already shared a copy of the CIMA publication with Dave Norton. He seemed impressed...*" Dave Norton is, of course, of the Kaplan and Norton partnership. A link to the Research Executive Summary was placed on the Palladium Group website for their global users to access the publication.

In January 2011 an adapted version of the Research Executive Summary was published in the *Journal of Botanic Garden Horticulture – Sibbaldia*⁷¹ – as

⁶⁸ CIMA RES Volume 6 Issue 7 June 2010: *Garden designs to improve the line of sight: Implementation of the balanced scorecard and an alternative costing system at the Royal Botanic Garden Edinburgh* (Macnab, A. Carr, C. and Mitchell, F.)

⁶⁹ *Financial Management* July/August 2010 (p 31-33), CIMA.

⁷⁰ E-mail from RRussell@thepalladiumgroup.com dated 8 July 2010.

⁷¹ *Sibbaldia*, *The Journal of Botanic Garden Horticulture* No 8.

the editors believed the concepts contained in the researcher's publication were of significant relevance, interest, and applicability to botanic gardens across the globe.

Peer Recognition

During July 2010 CIMA staff nominated the researcher for a CIMA Annual Award 2010 for Innovation in Business, based on his research outputs up until July 2010. Judging was a two stage process that ensured equal consideration was given to each entry received. Shortlisted entries were judged by a final panel of external industry leaders and key CIMA figures. In all cases, the judges were looking for a person that had attained considerable and measurable achievement in their chosen area, the management accounting profession and in their use of CIMA-trained skills. For an individual, this might mean a commitment to excellence and a significant management/finance-related achievement. The researcher was shortlisted for the award in September and gained a "Highly Commended" from the judging panel at the Awards Ceremony on 22 November 2010.

Showing that the solution actually works

The constructive approach, according to Kasanen and Lukka (1993), attempts to solve an identifiable problem which in this research study was achieved by developing a new paradigm for strategy and performance management. To prove this constructive approach is a valid applied research method then a working managerial construction grounded in management accounting or relevant theory must result. In this research study the solution was developed from theories on the Balanced Scorecard as a performance management framework and has shown how adaptations can be made to suit an individual organisation's unique needs, thus aiding strategy execution by improving the coherence of the various disparate divisions and providing greater insights into organisational performance and, therefore, strategic decision-making. It also looked at existing management accounting models, and concluded that they did not meet the needs of the RBGE's ways of working despite it having a traditional organisational structure because the staff members often worked outside their cost centres in cross divisional ways. Existing managerial accounting methods could not identify the costs of achieving the strategic objectives. Consequently, the researcher

developed a new model of management accounting (Strategic Objective Costing and Budgeting) to support the adapted Balanced Scorecard in use at the RBGE.

Impact of the Balanced Scorecard and Performance Management System on RBGE

The impact of the Balanced Scorecard/Strategy Map and Strategic Objective Costing processes at RBGE can be examined and in this way an assessment can be made of their efficacy and development by taking peer review into account which accords with Kaplan's (1998) Innovative Research Cycle. An examination of the impact is provided in the next section.

Impact

Introducing new management tools to well established organisations that had a reasonably comfortable way of operating is bound to have an impact on the staff, the ways of operating, the manner in which decisions are taken, and the means by which staff members interact with each other. There is nothing particularly novel about using non-financial indicators but any public sector organisation that relies solely on financial indicators is likely to find itself in some difficulty when trying to establish whether it is successfully executing its strategy as that will be judged by its ability to deliver goods or services to its client community, the cost of which will be borne largely by other stakeholders. By introducing the Balanced Scorecard as a key management tool, *de facto*, non-financial indicators become an essential constituent for measuring and, therefore, managing strategy execution. Only employing financial indicators could result in the Finance Department leading the analysis of strategy execution or, perhaps even less satisfactorily, the organisation deciding its strategy based purely on financial metrics. In the literature review there was a discussion on the backwards-looking nature of financial metrics (they can be nothing else) so to develop non-financial metrics the Senior Management Team must step outside of the Finance Department and engage staff from across the organisation to assemble meaningful PIs. We also have to be aware of disconnection or absence of alignment between operational measures which were controllable at Divisional level but which subjugated corporate level measures and, therefore, were dysfunctional in nature, albeit unintentionally. However, the

Finance Department do remain an essential component of any performance management system and could have an increased role by leading such a transformation process due to their existing and expansive knowledge of the organisation and its purposes as they already collect considerable data for the financial metrics presently reported for compliance and managerial purposes. Of course, that depends on staffing levels and capacity.

As discussed in the Literature Review the Balanced Scorecard/Strategy Map system recognises such issues and attempts to overcome them by the use of relevant perspectives which do engage staff from across the organisational structures and hierarchies. This is achieved by cascading properly aligned scorecards from corporate level to sub unit level (Divisions at RBGE). The implementation process described above was described in terms of considerable engagement with staff members to design the Divisional Scorecards and decide upon measures during the first iteration started in 2008 and, more recently, with discussions on relevant measures supporting the divisional and corporate scorecards in 2010. Interestingly, since making connections with Scottish Government's National Outcomes by developing the fifth perspective in the Balanced Scorecard/Strategy Map staff are now more aware of the Scottish Government's agenda and are able to see where their personal contributions make a difference to RBGE and in turn those of the Government. By understanding and relating to the macro-environment it is easier to better position the RBGE when making cases for support from Government funding for projects of various kinds – e.g. capital projects such as the major refurbishment of the RBGE glasshouses – which would contribute to Scotland's carbon reduction targets as well as reducing significant energy costs, thereby increasing efficiencies at a micro-economic environmental level.

This approach allowed the Senior Management Team to assess the relationships between the objectives in each perspective with those in other perspectives. The relationships were certainly logical: having adequate governance processes in place (management and control and strategy) would enable the marshalling of adequate resources (people, land and buildings, facilities and cash) to carry out the organisational activities (biodiversity

research, education, enterprise, environmental sustainability, visitor attraction) to achieve the RBGE's desired Impacts that would contribute to Scottish Government's National Outcomes. Arguably, these relationships could be seen as causal. For example, by selecting suitably qualified staff (people) and investing sufficient financial resource (cash) high quality biodiversity research (Activity) can be carried out leading to RBGE's Discovery (Impact) occurring which in turn contributes to Research and Innovation (Scottish Government's National Outcome). Another example of the cause and effect relationship could be the investment of capital funding in a new Visitor Facility to provide improved educational, retail, catering and exhibition offerings. As a consequence of this investment the visitor numbers increased, the financial returns dramatically improved and greater communication of our purposes was achieved by the increased visitor flow through our exhibitions.

Positive and Negative Factors

Of course, it would be easy to suggest that having implemented the system described above and then extolled the generally encouraging results achieved that the whole experience was extremely positive. However, it has taken some three years to get to this point since initiating the performance management system. The next sections examine firstly the negative factors affecting the installation of the constructions, including resistance to change, and then the positive factors.

Negative

The principal negative impact arising from implementing the constructions in the organisation was the additional commitment staff members needed to make to reporting on their work; something they had not been required to do before. This made them much more accountable and there remained some puzzlement with some as to why they needed to perform this function, even in days where public sector accountability was demanded from politicians downwards, including considerable interest from the press/media as to how public monies were being spent. Because some members of staff were initially reticent to become involved with reporting much effort was required to secure buy-in and compliance. This effort could have been unnecessary had the RBGE had sanctions to impose for non-compliance but, on the other

hand, forced compliance may have resulted in less than helpful inputs caused by resentment and, therefore, misleading or unhelpful information could have resulted. However, if staff were to continue to show reluctance to participate, then the budgets allocated to their sections/departments could be reduced in succeeding year as assumptions could be made that their work was of comparatively little importance and not worth supporting. Peer pressure would likely force a change of attitude from such staff members if already scarce resources were further diminished due to the inactivity of their fellow staff members.

Installing such systems has costs both in cash outlay and in terms of staff development and management. ESM is licensed for use by Palladium Group for a similar cost *per annum* of an administrative clerk, is paid for in \$US and is, therefore, subject to currency exchange fluctuations. The latter issue means that it is difficult to forecast exactly that the annual cost will be. That said, the researcher did manage to negotiate a substantial discount and paid for three years licences in one lump sum when the US\$:£ exchange rate was favourable to the RBGE. However, that benefit cannot be guaranteed in the future.

Although the researcher carried out most of the system design and build as described above, it is not possible for a director, with his many other functions, to devote sufficient time to maintaining/administrating the system and exploiting the full functionality that is built into the application. This means that another member of staff (Corporate and Planning Systems Coordinator) has either to be recruited or redeployed from existing resources. The former route was taken by RBGE before a recruitment ban was imposed by Scottish Government and we were able to secure the services of a newly graduated MSc in Accounting and Finance from the University of Edinburgh Business School, who had received advanced accountancy training but, of course, that comes with the cost of a salary and the necessary training to be given by the researcher until the required level of competency and confidence to operate without too much supervision is reached. Nevertheless, the RBGE is confident that this investment will make a good return in due course, as they see the benefits of improved and

relevant management information being made available to guide decision-making at operational and strategic levels. There are also implications for a member of the HR staff who has to run the time sheet application and then export the data in a timely manner (usually by the eighth working day of the month). This coincides with when the Finance Department can produce the financial information coded against the Strategic Objectives to export to ESM via the Corporate and Planning Systems Coordinator (who performs the SQL extracts from both the HR and Finance systems for the RBGE).

Finally, the introduction and design of the adapted Balanced Scorecard/Strategy Map and Strategic Objective Costing requires a significant effort by, in this case, the action researcher to persist with the concepts and who has to believe that the effort is worthwhile. As stated above, the initiative has been underway since 2004 when the Balanced Scorecard was introduced, but was interrupted by the researcher becoming necessarily more engaged with the major capital project (the John Hope Gateway), and returning to the project as and when time permitted. Most of the behind the scenes ideas were conceived in the researcher's own time at home whilst working on the research project. The point being made here is that to introduce new management ideas and practices to a well established organisation without particular incentives to cooperate can be very time consuming, challenging, even demoralising at times as it is a lonely route to follow. In this case the only resource dedicated to the exercise until very recently was the researcher himself which perhaps exacerbates the issues just raised. Due to the very significant changes being required of the organisation to make this process work effectively, it is unlikely that anyone less senior could have achieved the goal successfully. Having observed other directors agreeing to the introduction of these systems and then not, until recently, fully participating in them indicates that a more junior member of staff would be unlikely to succeed without the very strong and active support of his/her director. Furthermore, due to the long term and intrusive nature of the changes it is also highly unlikely that this work could have been achieved by researchers external to the organisation; they would not have been granted as much access to staff and the budget would not have been made available to them to carry out their work - that really would have

to have been sponsored from within. These observations confirm that innovative action research by a member of staff was the only real feasible option to carry out this work. This, therefore, limits the ability of other types of researchers to contribute to the research effort other than in an assisting/monitoring role.

Resistance to Change

As the system evolved the Regius Keeper lost patience with the staff who were non-compliant (no more than about 3% of the staff complement). Suggestions were made to these staff that if they felt unable to perform the relatively simple tasks asked of them he would find it just as hard to resource them in the future, and if they persisted then he would start to question why there was a need to retain them in employment at all. Moreover, their director was given a very clear message about how important the Regius Keeper viewed the performance management process as a means of persuading Scottish Government that the RBGE was a well managed, efficient organisation that was making important contributions to the National Outcomes. This had the desired effect and most of the residual resistance melted away, indicating that strong leadership is a prerequisite for change management and that using veiled threats, whilst not the first recourse for encouraging change, may need to be resorted to in the final instance. Certainly, once the reticence by some staff members was overcome, the reporting improved very significantly and the researcher's role changed from one of encouragement to one of having to filter out non-strategic information, in other words quality control. This required further dialogue with staff at all levels but it was a dialogue on modification of input rather than one of trying to get input at all which was altogether much more encouraging. The main factor coming out of this discussion was that although the literature review was useful for determining ways of encouraging and managing change the researcher has found that it does not place sufficient emphasis on leadership by the top management. It does indicate that change is unlikely to succeed without the involvement of senior management but fails to make the point strongly enough that without the personal involvement of the chief executive and, indeed, the means to ensure compliance then success is unlikely to occur. What this research has shown

that had there been earlier intervention from the chief executive the programme of change could have occurred somewhat more speedily and effectively, particularly with respect to staff members in the Science Division who had shown most reluctance to engage with the constructions during the first iteration.

Active Engagement

On the other hand, the main impact of involving staff in discussions on objective definitions and with selecting measures is that strategy and corporate planning has entered the everyday vocabulary of staff and is not confined to just a few very senior members of staff. There is much greater awareness of what the organisation is trying to achieve and how it is going about it and, importantly, some of the constraints that the RBGE faces by way of resources which increases understanding of why not all aspirations can be met. That acceptance makes it easier to communicate in an intelligent manner when discussing the future strategy, particularly in days of severe restraint in public sector financing.

The very fact that staff members were asked to assist with defining the strategic objectives and suggesting relevant measures meant that a new process had evolved for formulating RBGE's strategies and articulating them in the Corporate Plans when compared with the early days of planning at RBGE in the late 80s and 90s. As staff became involved, fresh ideas came forward and discussions arose over what was important and how best to describe their work in support of the corporate objectives. Staff members were consequently engaging in strategy formulation processes because they cared about their own and colleagues' contributions to the work the RBGE carried out.

An assistant curator in the Herbarium wrote in an e-mail to her line manager,

***From:** Louise Olley*

***Sent:** Thursday 21 October 2010 11:27 am*

***To:** David Long*

***Subject:** RE: Trial-Summary of the Work Programme in Science ESM*

Hi David,

I thought the report was extremely useful in giving an over view and keeping us all up-to date. Brilliant in fact!

Are the reports ever used to levy support in terms of funding? Is it worth noting other 'missing staff'!? For example this summer/autumn, I was seconded from lichenology to help with the flora of Nepal illustrations for just over two months. I am more than happy to help and have no complaints but it is worth noting that this has lead to delays in lichen curation, and the publication of a paper.

If this just appears negative (in which case it may not help us to attract funding) you can ignore the comment. I just wondered if there was a place on ESM to note these temporary hold ups without it appearing as doom and gloom in a summary. I.e. just a record of what's happening.

Just a thought!

Louise”

The revisions continued throughout the year as reporting improved, and more questioning arose about what was really important and reflective of departmental efforts. Additionally, what was observed was that staff were content to use the Red, Yellow, Green visual alert signals in the performance management system to indicate issues that were causing them difficulties. There was no observed behaviour of staff trying to “please the bosses” by indicating a Green, meaning all was well with their processes when the reality was somewhat different. Figures 45-47 provide evidence of such usage. This ever-present dialogue will result in a better product and performance should also improve as staff members see the impacts of their inputs and relevance of their work to achieving the RBGE’s mission. It should be stated that the revisions were minor in nature and did not adjust the broad strategic direction set by Senior Management during the Planning Conference held the previous year. If suggestions of a major significance were made that the researcher considered sufficiently urgent or important for immediate consideration as they could affect the successful outcome of the strategy for that year then such matters would be taken to the next Senior Management Group meeting for discussion. If adopted then the ESM could

be relatively easily adjusted to take account of the changes required. This observation indicates that strategy making is a never ending process and as long as alignment is maintained and the discussions are appropriate to either operational or strategic levels then maintaining staff engagement is a positive outcome.

Having introduced Strategic Objective Costing managers and directors were able to see, based on fact-based and relevant data, what the costs of achieving their objectives truly were. It allowed these managers to determine whether the staff effort (which is the only significant variable) was being applied in the most effective way or whether these scarce resources could be redeployed for greater effect. There is evidence from writers (e.g. Cokins, 2004) that most organisations have little insight into what their internal outputs actually cost; they are able to determine cost centre data but, as explained in the previous section, that does not greatly assist where staff members work outside their cost centre structure. The RBGE organisational structure is shown below in Figure 60. However, we can see from Figure 61 that each Division contributes to a range of strategic objectives, some of which lie outside the “natural” scope of the Division’s routine duties.

Figure 62 RBGE Organisational Structure

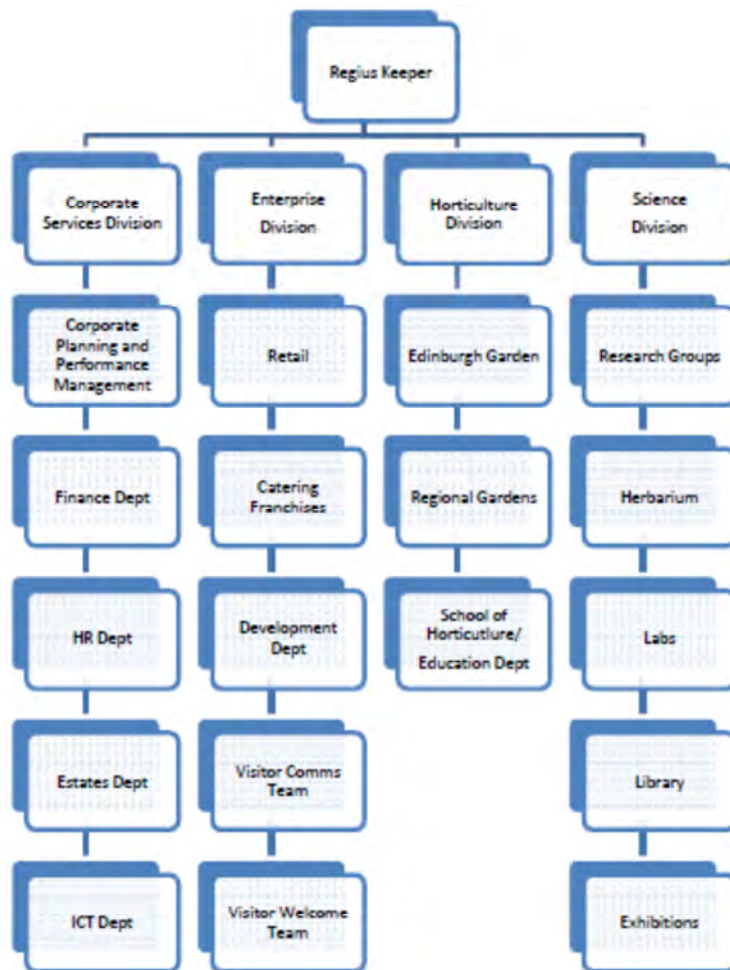


Figure 63 RBGE Divisional Contributions to Strategic Objectives

Division	Biodiversity	Education	Enterprise	Environmental Sustainability	Visitor Attraction	People
CSD			X	X		X
Ent			X	X	X	
Hort	X	X	X	X	X	
Science	X	X	X	X	X	

Division	Land & Buildings	Facilities	Finance (Income)	Management & Control	Strategy	External Relations
CSD	X	X	X	X	X	X
Ent			X	X	X	X
Hort			X	X	X	X
Science		X	X	X	X	X

The Strategic Objective Costing process provides that necessary insight but on its own is no better than any other costing system. The information generated from Strategic Objective Costing needs to be married up with the outputs and outcomes – Activities and Impacts at the RBGE – and an analysis provided to explain variances from the Plan, along with recommendations to either get back on track or make persuasive arguments to adjust the plan in light of the evidence being presented (emergent strategy). Only then can the performance management system be said to be truly effective. The report format used at RBGE is shown in Annex G and provides evidence of the performance management system supporting strategy execution based on the Balanced Scorecard, the risk registers (also based on the strategy maps for the divisions and the RBGE as a corporate body), and the Strategic Objective Costing outputs. The reports and ESM are now standing items on the agenda to be discussed at each Senior Management Group meeting and form the basis for strategic decision-making for the organisation. As the Senior Management Group have become more engaged with this process the quality and relevance of reporting has commensurately improved. The Regius Keeper declares a level of pride in the RBGE’s ability to report in this way and is keen to demonstrate to his peers the achievements at RBGE; the Regius Keeper is a distinguished botanist by profession!

Dr Alexander, during his interview referred to earlier in the paper, was asked to look at the Balanced Scorecard/Strategy Map. He stated: *“If such a device had been available at the time I was making contributions to the corporate planning process it would have been very helpful”*. Additionally, he also supported the idea that costing the strategic objectives would have been very instructive for resource allocation purposes.

Professor McNeill had looked at the current RBGE Corporate Plan just before his interview and stated that had such a framework (Balanced Scorecard) been available it would have been of assistance. When asked about costing objectives, an early requirement of DAFS, he stated that it would have been impossible to do that due to the inadequacy of the accounting processes in place at the time. He said: *“The current objective costing system just developed at RBGE will be very useful for planning and budgeting and, if possible, to assist with allocating/reallocating resources within the limited constraints that exist with the specialist staffs employed at RBGE”*.

Having developed these solutions then the researcher has been able to show that the construction works in practice. From this new management system each strategic objective has information provided on the objective costs and compared to previous periods, achievement of KPIs against targets is noted, and the current risk profile is also annotated. To complete the report a performance analysis is prepared and emerging recommendations for improvement are made. If the achievement of an objective requires the assistance of another division(s) that can be negotiated based on the information provided in the reports at the Senior Management Group meetings. These reports are also supported with information on which staff members and what percentage of their time have contributed to achieving the results together with the non-salary expenditure. The strategic objective costs are then reconciled back to the cost centre management accounts to complete the governance cycle for managers at varying levels as well as that of the Board. This model is used to support management decision making at the regular senior management meetings. Commenting on these developments at RBGE Mr Ian McWilliam, Head of Sponsorship Unit,

RERAD, Scottish Government said: *“It was interesting and beneficial to see in the Corporate Plan the alignment between the RBGE’s objectives with those of Scottish Government’s National Outcomes. Indeed, the novel accounting methodology that shows the cost of achieving those objectives is extremely helpful when it comes to understanding the prioritisation process undertaken by the RBGE”*⁷².

Changes to organisational structures

After the major revision to the Corporate Plan in late 2009 no changes were made to the organisational structure. Indeed, no changes had been made to the organisational structures since the first two years of operation of the performance management system because the Balanced Scorecard/Strategy Map frameworks were considered adequate by the Senior Management Group. The RBGE scorecard was derived from the strategic objectives which were then cascaded to Divisions through individual scorecards which, whilst having division-specific work programmes supporting the objectives, aligned to the RBGE corporate level objectives. However, on 1 August 2010 the new Enterprise Division was formed to concentrate on income generating activities and to improve the visitor welcome, particularly to the Edinburgh site. These goals were contained in the Enterprise and Visitor Attraction strategic objectives but prior to reorganisation were devolved to all three divisions, but principally Corporate Services and Horticulture Divisions. As a consequence of this major change to the organisational structure the performance management system (ESM) had to be amended to reflect these changes. As the ESM was licensed for each scorecard it was decided that for the remainder of this financial year (2010/11) to combine the Enterprise Division’s objectives with those of Corporate Services on the latter division’s scorecard. However, it was agreed to purchase a licence for Enterprise Division for the next financial year and this will require additional design and construction of a scorecard for that new division in time for 1 April 2011. The renewed focus on income generation, in light of anticipated cuts in public sector funding, and recognition that the current structure was a

⁷² Comment made at a meeting held between Mr McWilliam and the Researcher held on 22 February 2011.

heavy burden on the existing directors drove the decision to form the Enterprise Division. The revised Corporate Plan guided by the Balanced Scorecard was highly influential in the decision to change the structure.

Impact of new information

To justify developing the system at the RBGE the information emanating from it needs to be put effective use. Since July 2010 the information from the Performance Management System has been reviewed at the Senior Management Team and Group Meetings and decisions taken on issues that were flagged up in the system. It has allowed decisions to be taken on strategic issues rather than on low level operational matters. For example, computer storage was prioritised over the purchase of business continuity hardware backup to relieve critical shortages in image storage which was hampering progress with research activity. The purchase of a DNA sequencer was agreed to overcome staff shortages caused by the resignation of a specialist laboratory technician who could not be replaced due to an existing Scottish Government recruitment ban. Another example was that Science staff prioritised, for a short period, their activities to grant writing over research to assist with generating increased funding for the next Financial Year. Mr Frank Kirwan, a recently joined member of the Board of Trustees (formerly a Head of Retail Operations, Royal Bank of Scotland, board member of Oxfam, chair of three commercial companies, and visiting lecturer on strategy at the University of Edinburgh Business School) on reading the performance report (Annex G) said to the researcher: *“I have never heard of any organisation that has been able to trace their input costs through to their output activities and match the associated output costs against achievements. This presents us with a fantastic opportunity to decide upon priorities based on useful information. Where did this system come from?”* The researcher explained that he had developed this construct out of his current doctoral research. Mr Kirwan then enquired: *“Does Audit Scotland know about this methodology?”* The researcher replied that it was unlikely. Mr Kirwan responded by saying: *“Do you mind if I invite the Deputy Auditor General for a briefing from you as I think this has enormous*

potential not only for bodies such as ours but also for local authorities?”⁷³

The researcher replied that he would be delighted to assist.

Indicating the Theories on which the Solution is Built and What Contribution to New Theory the Solution Might Bring

This research solution is built on theories relating to firstly a combination of research methodologies; secondly those on the balanced scorecard; thirdly on cost accounting theories; fourthly on governance; and fifthly on change management and the associated issues relating to overcoming resistance. These theories and the contributions to new theories the solution might bring are discussed below.

Research Methodologies

The methodology selected for this research was that of Kasanen and Lukka’s constructive approach. Kasanen and Lukka (1993) suggested that there were six logical phases to follow to reach a satisfactory research outcome employing an action research based paradigm. These phases were followed but to take full advantage of the opportunity presented by the in-depth case study and the position of the researcher within the organisational hierarchy Kaplan’s (1998) innovative action research cycle was incorporated into Kasanen and Lukka’s constructive approach. Kasanen and Lukka’s phases are listed below:

1. Identifying the problem.
2. Understanding what the problem is and why.
3. Developing a potential solution.
4. Showing that the solution actually works.
5. Indicating the theory on which the solution is built and what contribution to new theory the solution might bring.
6. Looking to see how generalisable the solution might be.

Kaplan (1998) developed his innovative action research cycle to overcome some of the weaknesses in action research theory which persisted at the time.

⁷³ Comment made by Mr Frank Kirwan after the Board of Trustees meeting held on 2 March 2011

In particular, he referred to the need to test the developed solution to a point that it met the requirements of the identified problem. Kaplan's innovative action research cycle required the researcher to establish the problem (as did Kasanen and Lukka) but then write about the solution, teach it (present to the target and other audiences), implement the solution, and repeat the cycle until such time that a satisfactory solution is developed. What this adds to Kasanen and Lukka's approach is to use the opportunity to refine the developed model until such time as it was fully satisfactory and, therefore, it fitted into Kasanen and Lukka's phases three and four. Neither Kasanen and Lukka nor Kaplan are in conflict with each other but the researcher found during his work that the combination of both approaches provided a logical and strengthened approach to innovative action research. The sequence adopted for the research was explained in the earlier section on Framework. Whilst Kaplan is not prescriptive about who should be spoken to or taught, the researcher found that speaking to external knowledgeable audiences provided additional useful feedback which would be unlikely to occur from simply confining the exercise to internal audiences for whom the solution is intended. What the researcher also found was that the literature review was particularly helpful for guiding the implementation process as lessons drawn from the review informed much of the design for the potential solution.

Consequently, the innovative action research methodology is improved by combining both Kasanen and Lukka's Constructive Approach and Kaplan's Innovative Research Cycle, particularly if it also includes discussions with external audiences to improve the feedback and learning elements of the cycle proposed by Kaplan and by including a literature review to aid understanding of the problem and to inform the solutions. The modified Research Methodology would contain the following phases:

1. Identifying the problem.
2. Carry out a literature review.
3. Understanding what the problem is and why.
4. Developing a potential solution*.
 - a. Implement concept

- b. Create change in practice
- c. Teach and speak about the Innovation.
- d. Obtain feedback and learn
- e. Write articles.

**Cycle through these elements (a-e) as often as necessary until a satisfactory solution is achieved.*

- 5. Showing that the solution actually works.
- 6. Indicating the theory on which the solution is built and what contribution to new theory the solution might bring.
- 7. Looking to see how generalisable the solution might be.

Balanced Scorecard

Lorsch (2002) stated that “If directors were getting a balanced scorecard, they would be much more likely to be informed about their companies on an ongoing basis. The scorecard’s emphasis on strategy (linking it to all activities, day-to-day and long term) could help directors stay focused”. This suggests, therefore, that for a Balanced Scorecard/Strategy Map to work effectively as a control system it will require non-financial measures as a key component of the control method. However, this research has ascertained that to be fully effective the balanced scorecard must be adapted to suit the specific needs of the organisation rather than attempting to use a generic scorecard such as the original version developed by Kaplan and Norton (1992) or the adapted version promoted by Niven (2003), unless, of course, the organisation’s strategy sat very comfortably in such a framework. Furthermore, if the objectives in the cascaded scorecards at sub-business unit reflected those in the corporate scorecard then the existing organisational structures could be maintained as their departmental and personal objectives would be effectively aligned to the corporate objectives. This means there must be linkages from the cascaded maps to the corporate map and the information abstracted from the divisional scorecards to the corporate scorecard. Niven (2003) suggested that the Balanced Scorecard was able to overcome difficulties experienced with other performance management systems. He argued that if the Balanced Scorecard was properly designed then the resource allocations process could be linked back to the Balanced

Scorecard. He also suggested that if the objectives, measures, and initiatives contained in the Balanced Scorecard were properly cascaded to the sub business units then it would be a relatively straightforward process to form a basis for budget requests. What he did not explain was how to deal with budgets for activities that were performed by employees operating outside (at least for part of the time) their own cost centres. This research has shown that the adapted Balanced Scorecard can achieve the requirement to assist with resource allocation if the organisation's staff members work outside their allocated cost centres at times and provided a suitable strategic costing system is associated with the scorecard. The research also found that the Balanced Scorecard not only was helpful as a communications tool but the framework encouraged continuing dialogue between the various levels of the RBGE's hierarchy with emergent views on how to improve the current strategies being proposed by staff members who had engaged with the strategy making process. This phenomenon could be attributed to the fact that the staff cared about their work sufficiently and the Balanced Scorecard provided them with the means to articulate their concerns and hopes.

Accounting

Drury (1996) argued that modern accounting systems placed an increased emphasis on collecting and analysing non-financial data on activities that were necessary to achieve the organisational strategy. There appeared to be general agreement amongst the writers that whilst a model that collected non-financial data was required it needed to be supported by a financial model that supported achievement of strategic objectives in the most straightforward manner which would, in turn, contribute to the governance systems in place. In support of achieving strategic goals financial performance needs to be viewed in the context of the organisational performance as a whole, and the achievement of corporate objectives (Kaplan and Atkinson 1998). Innes and Mitchell (1998) argued that strategy formulation was assisted by knowledge of the total costs of carrying out organisational activities and a key component of management accounting information was a focus on costs, which arose from the procurement and subsequent usage of resources. There are limitations to the traditional and well publicised forms of accounting methods and these have been explained

previously in the research study. The difficulties encountered with determining whether strategy is being successfully executed when the administrative structures are linked to conventional accounting models have also been previously discussed. The conclusion was drawn that there required to be developed an alternative costing model which was relatively simple and cheap to implement and apply, could be easily understood by all levels of the organisation, and could assist with the management of strategic activities.

The Strategic Objective Costing system developed by the researcher in support of the Balanced Scorecard, arguably, provides the necessary information to show the input costs for each strategic objective which can then be married up to the outputs (measures) linked to the achievement of the objectives (KPIs). Moreover, these strategic objective costs can be reconciled to the financial management accounts (cost centre based) enabling strategic objective budgeting to occur. The Strategic Objective Budgeting process shines a useful lens on what activities are generating income and how best to allocate these resources to meet the corporate objectives by understanding the linkages between inputs (staff effort and costs) and outputs/outcomes (achievement of KPIs). Therefore, this new system of cost accounting will allow the Board and/or Executive Management to exercise their governance responsibility by having improved information about organisational performance, including that of efficient use of resources. Furthermore, management can shift staff effort from one objective to another to ensure that the overall corporate goals are achieved by the judicious use of the scarce resources available to them. Management accounting theory is, therefore, developed to provide a means of associating financial management accounts to the achievement of strategic objectives, many of which will be measured by non-financial indicators, by the use of Strategic Objective Costing/Budgeting.

Governance

Stakeholder theory is one of the most relevant to public sector organisations as such organisations have a (often statutory) responsibility to the wider community over and above their principal funders (Mallin 2010). Governance requires that a board ensures that the executive management

performs in a manner that would meet high expectations whilst taking risk into account to ensure that the principal funders were not put in unnecessary jeopardy. This notion accords with Tricker (2009) who suggests that a board's tasks include strategy formulation, supervision of executive management, and accountability to external stakeholders. To assist with achieving these tasks a management control system is used to support managers in assessing the organisation's progress in the accomplishment of its goals and where discrepancies exist, to support areas needing attention (Anthony 1988, and Lorange, Scott Morton, and Goshal 1986). A management control system also provides detailed assurances to the board that the necessary actions are being taken by the executive management to achieve a successful outcome within the boundaries set by the board. Merchant and Van der Stede (2007) argued that management and employees must have knowledge of what the strategic and operational objectives are. A strategy sets down what the organisation is attempting to achieve and it measures the success or otherwise of its activities by the use of KPIs, which have to be "congruent with the organisation's objectives" if the wrong activities are not to be carried out by the staff. This means that the strategy formulation process is of paramount importance as is the subsequent communication processes. Kaplan and Norton extol the virtues of the Balanced Scorecard as a communications tool. This research has shown that if the Balanced Scorecard is fully adapted to meet the specific needs of the organisation then the Balanced Scorecard can be used as a strategy formulation framework and an active supporter of dialogue between staff and management on matters to do with organisational strategy, which adds utility to its overall functionality.

Drury (1996) states that amongst some existing control systems the Balanced Scorecard acts as a means of linking financial and non-financial measures and this research indicates that the adapted Balanced Scorecard conjoined with an associated Strategic Objective Costing system increases the board's and executive management's knowledge of what the organisation is doing and achieving.

It is reasonable to conclude from this research that by the use of an adapted Balanced Scorecard and adopting the Strategic Objective Costing system models, as developed at the RBGE, organisational governance can be improved from existing corporate governance frameworks for public sector/not-for-profit organisations.

Management of Change

The literature review argues that an organisation's strategy is executed by cascading objectives, KPIs, and targets down through the organisation. If the objectives and measures are effectively aligned to the strategy and the managers have been involved in developing that process there will be a much greater understanding of the organisation's strategy and its goals by the staff of the organisation and, consequently, increased motivation to positively contribute should be in evidence. However, if staff perceived that the system would be used to penalise poor results, then sub-optimising behaviour could result and resistance to the installation of any such system might occur. Therefore, the way that management apply a strategy and performance management system can have a profound effect on its acceptability.

De Waal (2002) found that where senior management saw performance management as an aid to progress, used the resultant information to support decisions, and provided the necessary resources to assist employees achieve their objectives then there was much more likely to be acceptance of a new management system introduced into an organisation. Keeping staff apprised of achievements by an appropriate feedback mechanism and celebrating successes will assist with the acceptability of such new systems. However, senior management need to ensure that their staffs remain informed and motivated even after the novelty of a new process has worn off if staff buy-in is to be maintained and satisfactory progress with strategy execution is to be achieved.

On the other hand, Innes and Mitchell (1998) found that if staff considered that the costs of making the effort outweighed the benefits of implementation the project would fail. Burns, Ezzamel et al (2003) argued that in addition to the new technical competencies required of staff, there needed to be a

change of culture regarding the practices if such change was to stand any chance of success. Therefore, to successfully implement a new performance management system like the Balanced Scorecard the buy-in of the whole organisation from top to bottom is required (Nørreklit 2003; De Geuser, Mooraj et al 2009). Management must also be willing to be adaptable with the change programme as it is implemented as some emerging improvements will be suggested by staff and it would be foolish to disregard good ideas being brought forward by the employees which would have a positive impact on the success of the strategy. Simply imposing change without an adequate communication and training policy is unlikely to succeed in the long term.

What these theories tell us is that the culture of an organisation may have to change. There needs to be an understanding by the staff of the purposes of the new system, and a good communications exercise should be carried out explaining the benefits for and impacts on the staff after the new system is in place. Management should also encourage staff participation in the design and implementation of the proposed system to secure buy-in. The research found that although these theories bear out in practice the major factor which had the greatest influence in the success or failure of the installation of the system was the existence (or lack) of leadership. What was discovered through experience of installing the novel managerial construct was that when strong senior leadership was absent from a division then the participation in the performance management system was sporadic or, in some cases, completely absent. However, where there was evidence of strong leadership in existence a much greater and positive response was obtained from staff. This was evidenced irrespective of the intellectual capabilities of these staff members. Indeed, what transpired was that the higher the level of academic qualification the poorer the response if leadership was absent. Therefore, whilst all of the factors mentioned at the beginning of this section are important, the evidence from this research shows that the most important factor for successfully implementing a new system of management is strong, committed leadership and no amount of communications or efforts in getting staff to understand the purposes of the new system will substitute for adequate leadership.

Looking To See How Generalisable the Solution Might Be

This research was based on a single deep-dive case study. Therefore, it is not possible to state with absolute certainty that the solution is generalisable until it is adopted at and tested on other research sites. However, Kasanen and Lukka (1993) made the case that a managerial construction should be able to pass one of three market tests detailed in their paper and repeated in earlier sections of this research study. If it did pass any one of these tests the construction would be validated. In this case it can be seen that the research site, the RBGE, has been willing and able to apply the construction for decision making purposes. This means that the solution has passed the weak market test. Kasanen and Lukka argue that even the weak market test is “relatively strict”. To pass the “semi-strong market test” the solution needs to have been adopted by many organisations and to pass the “strong market test” organisations adopting the solution need to have shown improved results over those which are not using it. We have seen from the literature review that Kaplan and Norton (1996, 2008), Niven (2003, 2006), De Geuser et al (2009), and Marr (2010) have all found in their research that organisations adopting the Balanced Scorecard claimed to be able to outperform their competitors who do not. Logically, organisations adopting a Balanced Scorecard that has been specifically adapted for their unique strategic needs will also outperform competitors or peer organisations who have either not adopted the scorecard in any form or have employed a generic model that is deficient in some way for their organisational needs. Arguably then, it is reasonable to suggest that the adaptations made in this research study would be not only generalisable but would lead to the solution to passing at least the semi-strong, if not the strong market test if applied to other organisations. Moreover, it has been argued in this research that Strategic Objective Costing/Budgeting strengthens the utility of the scorecard by illuminating the costs of achieving the objectives in each perspective in the Balanced Scorecard and Strategy Map and enabling these costs to be reconciled back to the financial management accounting systems commonly found in most organisations. This means that the adaptation of the Balanced Scorecard and development of the Strategic Objective Costing system can lead to Strategic Objective Budgeting, completing the strategic management cycle, thereby improving the performance dimension of

governance. From these conclusions based on the logic contained in Kasanen and Lukka's constructive approach, it is reasonable to deduce that the solution is generalisable, providing the requisite levels of motivation and leadership are present and sufficient effort to introduce the new managerial construction effectively is made by the senior management of the implementing organisation.

CONCLUSIONS

In drawing this research study to a conclusion there are several questions that need to be answered satisfactorily. There needs to be an examination of whether the aims of the research study have been met fully, partially or not at all been met with an explanation that justifies the conclusion. Secondly, there are technical and procedural considerations of how the Balanced Scorecard is best adopted and used in practice with some recommendations to assist other users. Thirdly, although the balanced scorecard was originally developed for use by the profit making companies this study has focused on the public sector /not-for profit setting and therefore a determination is required if the balanced scorecard retains its value in this type of setting and if it does how is it able to do so in the absence of a profit motive. Fourthly, some commentary on action research as a method with any lessons learned for subsequent researchers will be provided. Finally, some concluding remarks will be made on the contribution of this study to the applied science of management accounting.

Aims of the Study

The main research objectives of this research study were to:

1. Find a solution to the RBGE's need for more formal and effective systems of corporate governance and strategy formulation and implementation particularly with regard to the creation of a Management Control System.
2. Investigate the extent to which the Balanced Scorecard can assist the botanic garden in constructing a solution to the above problem.
3. Assess the efficacy of the Balanced Scorecard based solution that is developed.

These research objectives required several research questions to be answered, which related directly to the application of the Balanced Scorecard:

1. Can a Management Control System be created that will provide an effective system of corporate governance that will also assist strategy formulation?
2. Can the Balanced Scorecard based solution be adapted for public sector and not-for-profit use that will construct the requisite Management Control System?
3. Can the Balanced Scorecard based solution be assessed for its efficacy to meet at least the weak market test?

Stakeholder theory is one of the most relevant to public sector organisations as such organisations have a (often statutory) responsibility to the wider community over and above their principal funders (Mallin 2010). Supervision of management and accountability matters are within the province of conformance and strategy execution and policy making are to do with performance, the two components of enterprise governance as defined by IFAC/CIMA (2004). To achieve this aim boards need to have some processes of management control in place to provide the necessary assurances that the organisation is performing as expected, achieving their stated objectives, and that no surprises occur (Simons 1995). It has been acknowledged in the literature review that strategy formulation is a difficult and challenging business for management and boards. Management Control Systems are tools for implementing strategies and assume that strategy formulation is a top-down process. If implemented the Management Control System is then able to measure progress with achieving the strategic goals and the senior management can take the necessary corrective action (Mintzberg 1987, 1990). This view contains some assumptions that strategies are deliberate, and articulated in advance of implementation, formulation is separate from implementation, formulation is reserved for top management, and strategy is the plan. Mintzberg (1994) countered these arguments as he did not accept that the future can be predicted. Mintzberg (1987) and Johnson and Scholes (1999) argued that organisations must have the ability to let strategy emerge from within the organisation and not just be seen as the purview of top management alone. They maintain that to only

rely on formalised planning will encourage decouplement of top management from the body of the organisation that has to execute the strategies with the likely outcome that the realised strategies will be significantly different from the intended strategies and, therefore, the organisations will fail to execute their strategies. What has been established both in the literature review and in the research findings is that there is a role for strategic planning to allow for the varying stakeholders requirements to be incorporated when formulating strategies. However, there is a risk that top management will be isolated from their workforce if they adopt a wholly top down formalised planning process that does not engage the staff who will be required to execute the strategies. The strategy formulation process needs to provide the means to coordinate the activities of the whole workforce in a coherent manner and this means that staff engagement will allow for emergent ideas to surface, for staff to buy in to the organisational goals which will increase the likelihood of successful strategy execution. The most likely means for achieving this goal is to use a strategy framework to assist with the process.

What was found at the RBGE when it first started tackling the issue of strategy formulation was a top down approach which involved a lot of work for a few senior staff but their efforts proved ineffective as neither were the plans accepted or used by either the RBGE itself or the Scottish Office. This outcome was predictable from the literature available and if this was to be a widespread phenomenon in the public sector then a considerable waste of effort and therefore cost was being incurred. However, the principal benefit coming out of the strategy formulating exercises at the RBGE which did start to engage staff and used a coordinating framework was a wider and deeper understanding by those involved as to what did go on at the RBGE. Over the years the quality of corporate planning could be seen to be improving as copies of plans were exchanged with other public sector bodies and a form of best practice within the sector would be adopted. However, that is not to say the most efficient or effective methods were being employed to achieve satisfactory outputs.

Consequently, a Management Control System must accommodate both hierarchical and emergent models of strategy formulation. A framework that is fit to measure strategic performance management should provide: a balanced reflection of the business model in use (financial and non-financial measures), a succinct overview of the organisation's performance, a set of measures that is multidimensional and provides coverage of key areas of performance, and measures which should be integrated both across the organisation's functions and through its hierarchy. The most popular contemporary framework in use that meets these conditions has been the Balanced Scorecard developed by Kaplan and Norton (1992) which was designed to communicate strategy by explicating the various linked objectives that need to be achieved. Much of the current literature describes the benefits of scorecard systems as arising from their use as a strategic management tool – focusing on the alignment of key management processes, people, and systems to organisational strategy and demonstrating cause and effect linkages, which in turn permits a better analysis of achievements. The generic balanced scorecard developed by Kaplan and Norton in 1992 was very much aimed at the private sector for-profit company but many public sector organisations had found the Balanced Scorecard to be equally effective if some adaptation was made to it, principally by connecting the customer perspective to that of the organisational mission (Niven (2003)). Simons (1995) suggested that the Balanced Scorecard was a suitable “lever of control” for both diagnostic and interactive control systems which caters for the top down and emergent approaches to strategy. This then permits staff from all levels to engage in the strategy formulation processes and then the subsequent performance assessments on progress. In other words a significant top down and bottom up communications tool is available to both management and staff. Lorsch (2002 p9-11) stated that “If directors were getting a balanced scorecard, they would be much more likely to be informed about their companies on an on-going basis. The scorecard's emphasis on strategy (linking it to all activities, day-to-day and long term) could help directors stay focused”. This suggests, therefore, that for a Balanced Scorecard to work effectively as a control system it must cater for this type of working and will require non-financial measures as a key

component of the control method. If the objectives in the cascaded scorecards at sub-business unit reflect those in the corporate scorecard then existing organisational structures could be maintained as their departmental and personal objectives will be properly aligned. The Balanced Scorecard was adopted at the research site and was able to meet the conditions detailed above and, therefore, provided the requisite system of corporate governance that also assisted strategy formulation. This was evidenced by the formulation of its strategies contained in the RBGE's corporate plans issued since 2004 which employed the Balanced Scorecard as its formulation framework and thereafter operated as the basis for performance measurement, thereby making a significant contribution to governance processes.

Conclusion 1: Strategy formulation at the RBGE was ineffective when it only involved top management, it was decoupled from the workforce and did not have a framework to assist the staff involved in the formulation process.

Conclusion 2: The Balanced Scorecard is a Management Control System that can provide an effective system of corporate governance that will also assist strategy formulation.

Conclusion 3: The Balanced Scorecard system permits staff from all levels to engage in the strategy formulation processes and then the subsequent performance assessments on progress, which introduces a top down and bottom up communications tool for management and staff.

Although the solution selected was the Balanced Scorecard to assist with strategy formulation and execution, thereby contributing to effective governance, the researcher accepted that there were deficiencies in the more popular versions of it (Kaplan and Norton (1992) and Niven (2003)). We know that strategies are usually unique to an organisation. In the literature review it was concluded that the overarching purpose of the scorecard is to assist an organisation with executing its strategy (Grant 2008, Niven 2005). Therefore, those charged with that responsibility must understand what it is they are attempting to achieve and be unafraid to make the requisite

adaptations necessary to ensure success in achieving the mission. The case is made for adopting the Balanced Scorecard in the public sector if there is sufficient adaptation of the perspectives in the Balanced Scorecard that properly reflect the organisation's unique strategy to maximise the benefits of assessment of progress to achieving the strategy. With the necessary adaptation the Balanced Scorecard can prove to be as equally an effective tool in the not-for-profit/public sector as it is claimed to be in the private sector (Kaplan, 1996; Niven, 2003; Marr, 2009). For such adaptation to occur the management of the public sector organisations must be fully conversant with their expected outcomes and the resources required to enable such outcomes. This is usually more complex than it sounds (due to the multi-stakeholder demands on these bodies) but the Balanced Scorecard can provide the means to help identify the customers and their expectations if the correct perspectives are properly identified at the start of the strategy formulation process and applied to the Balanced Scorecard. Public sector Balanced Scorecards are differentiated by placing the mission at the top of the framework. Ideally, there would be an explicit linkage to external stakeholders to ensure that the "customer" requirements are being met and that the organisation is aligned to those requirements. This will in turn contribute to the governance systems in place. This process was initiated when introducing the Balanced Scorecard to the RBGE's Senior Management Group in 2004, although the external stakeholder was not included until the Corporate Plan 2009/10-2014/15. By embracing the notion of adaptation the researcher was able to suggest modifications to the original Balanced Scorecard to one that better suited the needs of the research site, the RBGE. The researcher suggested changing the perspectives names to gain a greater level of acceptability, given his awareness of the organisation's antipathy to commercial terminology at that time. Taking this approach allowed significant adaptation to the scorecard and the researcher drew upon the influences gained from his experience of the EFQM's Business Excellence Model and employing some of the logic from that framework. Having agreed the changes to the scorecard with senior colleagues the researcher was able to employ the Balanced Scorecard as a strategy formulation tool in the first instance. This was despite Kaplan

and Norton's (1992) original intention for the Balanced Scorecard to be used as a performance measurement device. The Balanced Scorecard became the framework of choice for the RBGE when it came to formulating and revising its subsequent strategies. In the early stages the Balanced Scorecard was used only as a formulation framework rather than a measurement framework. Nevertheless, the Balanced Scorecard proved itself useful by providing the framework to encourage a coherent and integrated approach to deciding on future organisational activities aimed at achieving the corporate strategy and allocating priorities and resources to them. This had not been possible until its adoption. The researcher had identified the problem at RBGE as one of staff spending considerable time formulating corporate plans (strategies) but he was also conscious that nothing was actually done with these corporate plans once written by the RBGE staff and then approved by Scottish Government officials. There was no attempt to use a performance management system as a management tool to track progress towards successful strategy execution. In 2007 the Senior Management Group at the RBGE accepted that the Balanced Scorecard and its associated Strategy Map had more to offer than just strategy formulation and agreed to buy in to the idea of a performance management system that correlated to the Strategy Map. The researcher had identified a suitable software application that was based on the strategy map concept. A trial had been carried out by the researcher, presented to the Senior Management Group at its Planning Conference in 2007 and was duly accepted as a viable process to engage with. This was to be the start of a three year programme of work before a fully functional and operational performance management system was in place but by July 2010 that was achieved.

Niven (2003) suggested that if the objectives, measures, and initiatives contained in the Balanced Scorecard were properly cascaded to the sub business units then it would be a relatively straightforward process to form a basis for budget requests. There appeared to be general agreement amongst the writers that whilst a model that collected non-financial data was required it needed to be supported by a financial model that supported the achievement of strategic objectives in the most straightforward manner which would, in turn, contribute to the governance systems in place. In

support of achieving strategic goals financial performance needs to be viewed in the context of the organisational performance as a whole, and the achievement of corporate objectives (Kaplan and Atkinson 1998). Innes and Mitchell (1998) argued that strategy formulation was assisted by knowledge of the total costs of carrying out organisational activities and a key component of management accounting information was a focus on costs, which arose from the procurement and subsequent usage of resources. There are limitations to the traditional and well publicised forms of accounting methods and these have been explained previously in the research study. The difficulties encountered with determining whether strategy is being successfully executed when the administrative structures are linked to conventional accounting models have also been previously discussed. The conclusion was drawn that there required to be developed an alternative costing and budgeting model which was relatively simple and cheap to implement and apply, could be easily understood by all levels of the organisation, and could assist with the management of strategic activities. The Strategic Objective Costing system developed by the researcher in support of the Balanced Scorecard, arguably, provides the necessary information to show the input costs for each strategic objective which can then be married up to the outputs (measures) linked to the achievement of the objectives (KPIs). Moreover, these strategic objective costs can be reconciled to the financial management accounts (cost centre based) enabling strategic objective budgeting to occur. Therefore, this new system of cost accounting will allow the Board and/or Executive Management to exercise their governance responsibility by having improved information about organisational performance, including that of efficient use of resources. Furthermore, management can shift staff effort from one objective to another to ensure that the overall corporate goals are achieved by the judicious use of the scarce resources available to them.

Conclusion 4: The Balanced Scorecard based solution can be adapted for public sector and not-for-profit use and if supported by a suitable costing system the requisite Management Control System can be constructed.

The ultimate test of whether a construction is valid will be whether it works in the real world. The Balanced Scorecard based solution for the RBGE needs be assessed for its efficacy to meet at least the weak market test. The weak market test (Kasanen and Lukka (1993)) requires the solution to have been embedded in a single organisation and used for decision-making purposes. If the construction (s) does meet the weak market test then it is validated according to Kasanen and Lukka. What has been demonstrated in this research study is that the managerial constructions of the adapted Balanced Scorecard associated with Strategic Objective Costing and Budgeting system has been embedded within the RBGE and is being used by the Senior Management Team for decision-making purposes. This is possible as staff members, at various levels of the hierarchy, are reporting against their departmental objectives which have been cascaded down from the Corporate Plan to the departments contained in the four divisions that make up the organisational structure. The performance management system facilitates that process. Taking account of the reports from staff and having knowledge of the effort being allocated to these activities/objectives the Senior Management Team can makes valid decisions based on real data. This process has been in place for a period of seven months and is evidenced from the monthly reports; an example of such a report is at Annex G. Undoubtedly, an improvement in the quality of the reports is being observed on each iteration and consequently, the quality of decision-making will commensurately improve.

Conclusion 5: The adapted Balanced Scorecard associated with Strategic Objective Costing is efficacious and meets Kasanen and Lukka's weak market test.

Conclusion 6: All of the objectives of the study have been addressed.

Technical and Procedural Considerations of How the Balanced Scorecard is Best Adopted and Used

The Balanced Scorecard was developed by Kaplan and Norton in 1992 for the for-profit company in response to a growing dissatisfaction in organisations with the then total reliance on financial metrics to gauge performance. They posited that non-financial metrics were equally

important as drivers of corporate performance. In an attempt to show that objectives were interrelated and that a combination of a balanced set of financial and non-financial metrics assisted with performance measurement they developed their Balanced Scorecard in four perspectives: financial, customer, internal business process, and learning and growth. This generic design remained virtually the only form of the Balanced Scorecard for a period of some 10 years and firms would try to insert their strategic objectives into these four perspectives. For many they achieved a measure of success but for others the Balanced Scorecard failed for a variety of reasons. A significant reason was that the generic perspectives with the prescriptive objectives and measures contained in the original Balanced Scorecard simply did not meet the needs of the organisational strategies that were being measured. Consequently, the cause and effect linkages could not be made (Nørreklit 2000).

In 2003 Niven modified the Balanced Scorecard to meet the needs of the public sector – in this case US State governments and third sector not-for-profit organisations. This modification placed the customer perspective at the top of the scorecard instead of the financial perspective which was endemic in Kaplan and Norton's version. This adaptation by Niven was highly influential as other practitioners started to follow suit with minor adaptations although most adopted Niven's version. However, what became very evident in the research study was that significant adaptation was possible without losing the advantages of using the Balanced Scorecard as a strategy execution framework. To be successful in this venture the management team must have a clear understanding of their organisation's strategy and who their customers are, and what their needs are. At the RBGE the Balanced Scorecard framework greatly assisted with strategy formulation by using it to ask the "Who, What, How, With What" questions and labelling the scorecard perspectives accordingly. This approach allowed the Senior Management Team to assess the relationships between the objectives in each perspective with those in other perspectives. The relationships were certainly logical: having adequate governance processes in place (management and control and strategy) would enable the marshalling of adequate resources (people, land and buildings, facilities and

cash) to carry out the organisational activities (biodiversity research, education, enterprise, environmental sustainability, visitor attraction) to achieve the RBGE's desired Impacts that would contribute to Scottish Government's National Outcomes. Arguably, these relationships could be seen as causal. For example, by selecting suitably qualified staff (people) and investing sufficient financial resource (cash) high quality biodiversity research (Activity) can be carried out leading to RBGE's Discovery (Impact) occurring which in turn contributes to Research and Innovation (Scottish Government's National Outcome). Another example of the cause and effect relationship could be the investment of capital funding in a new Visitor Facility to provide improved educational, retail, catering and exhibition offerings. As a consequence of this investment the visitor numbers increased, the financial returns dramatically improved and greater communication of our purposes was achieved by the increased visitor flow through our exhibitions.

As time passed the labels of the perspectives changed to better suit the needs of the stakeholders in order to provide greater clarity as to the strategic aims. What this showed was that the Balanced Scorecard need not be a static object but one that evolved with the changing needs of the organisation that it serves. The process of change is instigated by the involvement of staff at various levels indicating that the Balanced Scorecard is effective as a communications tool both from a top down and a bottom up perspective. This also overcomes criticisms of the Balanced Scorecard not being rooted throughout the organisation (Norreklit 2003). An ideal time to check the currency of the Balanced Scorecard is at the periodic strategy formulation session as this brings many facets of the organisation together providing an open culture is in place at the organisation; it is at the RBGE. During the research phase it was demonstrated that the Balanced Scorecard and its associated Strategy Map was used not only as a strategy formulation tool but also as the basis for the performance management system. In fact, quite deliberately, a performance management system was selected that reflected the strategy map which could drill down to provide a mixture of quantitative and qualitative analyses of progress towards the achievement of strategic goals and one which maintained the clear links between the objectives and

sub business units. The performance management system was built by the researcher with involvement from a wide range of staff to inform the selection of the objectives, measures and targets. This was successful to a point in that it helped secure the buy-in of staff to the concept of organisational performance management, hitherto not employed at the RBGE, but some difficulties arose when it came to reporting as there was some uncertainty amongst some staff as to what was required of them. They had all received briefings and training but their reticence to report was difficult to overcome. Another significant factor that was established was that without strong leadership the reticence would continue. However, further consultation with staff led to the researcher to revise the performance management system in a much more prescriptive way with a more limited level of consultation involved. This resulted in a simpler version of the performance management system and results were much more encouraging, leadership greatly improved and full participation by the staff across the organisation occurred with the quality of reporting improving each time.

The adaptations to the scorecard were evolutionary but the Strategic Objective Costing system had no precedent on which to base the construct. The researcher set out to devise a costing system that directly related to the strategic objectives. The RBGE was organised by functional specialism in a traditional hierarchical model. Therefore, the researcher knew where the staff members were located and what their primary duties were and that staff costs represented some 72% of total cost of the organisation. He also knew that these staff contributed to many projects and activities that lay outside their divisional structure. This meant that the traditional management accounting processes based on cost centres would not provide the cost data on performing the objectives. By understanding what activities the staff members actually did and how they contributed to the strategic objectives the researcher was able to devise a time recording system that required staff to allocate their time against the activities they performed which in turn contributed to the achievement of the objectives. In addition to this process of aligning staff to the corporate objectives it was also possible to calculate the cost of staff effort being attributed to these activities based on the percentages of time reported against the cost of the employee. The final

element was to double code all non-salary expenditure against both cost centre and strategic objectives. These costs could also be traced back to the cost centres thereby allowing budgetary responsibility to fall to the delegated members of staff. Examples of the output from this system are contained in Annex G.

Conclusion 7: There are technical and procedural considerations that need to be taken into account, including a thorough understanding of what activities the staff undertook but the RBGE has shown that it can be done at relatively little cost but with appropriate levels of effort.

Conclusion 8: Cause and effect relationships can be identified between the objectives contained in the RBGE's scorecards perspectives.

Public/Not-For-Profit Setting for the Balanced Scorecard

It has been stated above that the original Balanced Scorecard was developed for the profit motivated organisation and according to considerable research has proved successful for many organisations. Can such a construct be as relevant for Public/not-for-profit settings and retain its value in this type of setting when the profit motive is absent? The research has shown that the Balanced Scorecard is just as effective in the public/not-for-profit sector as that of the for-profit sector. The absence of a profit motive is not relevant to the argument as the Balanced Scorecard was developed to assist with strategy execution. Not all strategies are profit motivated and this is especially so in the public sector where the mission is generally to provide services to a community in some way. In most public sector organisations the “customer” perspective connects to the mission statement. However, careful stewardship of financial resources is necessary in all cases and is a prerequisite to executing strategy successfully. Therefore, it is reasonable for all balanced scorecards to consider financial management. Indeed, the RBGE scorecard placed importance on the stewardship of all its resources: financial, human, infrastructural, and management. Arguably, this would be the case for any organisation including those of the private sector but the difference is whether the emphasis is placed on profit or service to the community. These aims are compatible with the use of the Balanced

Scorecard if suitable adaptation is made to enable successful execution of the specific organisational strategies.

Conclusion 9: The Balanced Scorecard is equally relevant and applicable to the private and public/not-for profit sectors if adequate adaptations are made to meet organisational strategy needs.

Use of action research as a method – lessons for subsequent researchers

The problem identified at the RBGE was that considerable effort was devoted to the production of corporate plans to satisfy an external stakeholder (Scottish Government). They were not put to any use by the RBGE management team during the course of the year nor were any attempts made to track progress towards achieving the goals set down in the plan. Although the RBGE produced management accounts no one could state what the costs of achieving the objectives were and therefore it was not possible to use financial data to assist with prioritising activities or the allocation of resources. To solve these issues it was proposed that sound strategic and performance management information systems be developed for the management team of the botanic garden.

What was therefore required was a research method which could solve real life problems. Bryman and Bell (2003) asserted that action research became popular as a research method within business and management during the 1980s and 1990s because of its emphasis on practical outcomes and Shani and Pasmore (1985) provided a helpful definition of action research which was: “Action research may be defined as an emergent inquiry process in which applied behavioural science knowledge is integrated with existing organizational knowledge and applied to solve real organisational problems. It is simultaneously concerned with bringing about change in organisations, in developing self-help competencies in organisational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in a spirit of collaboration and co-inquiry”. Kasanen, Lukka et al (1993) proposed what they called the “constructive approach in management accounting research”. This involved designing a model or process to assist with solving organisational problems. Taking this argument forward,

Kaplan (1998) argued that where the existing practice within an organisation is less than ideal and that if a novel idea was being proposed to improve organisational performance in some way then the more traditional forms of research were unable to assist as the researchers are unlikely to be able to find enough (if any) organisations that have adopted these ideas. Kaplan proposes an alternative approach, “innovation action research”, which has researchers involved in helping to implement the new idea. Importantly, Kaplan argued that the engagement of the researcher with the proposed solutions would allow the determination of whether the ideas did add value to the organisations in which they are being installed. Additionally, Kaplan suggested that the researcher would be able to document additional learning arising from the installation process. In particular, he referred to the need to test the developed solution to a point that it met the requirements of the identified problem. What this added to Kasanen and Lukka’s approach was to use the opportunity to refine the developed model until such time as it was fully satisfactory and, therefore, it fitted into Kasanen and Lukka’s phases three and four. Neither Kasanen and Lukka nor Kaplan were in conflict with each other but the researcher found during his work that the combination of both approaches provided a logical and strengthened approach to innovative action research. Whilst Kaplan is not prescriptive about who should be spoken to or taught, the researcher found that speaking to external knowledgeable audiences provided additional useful feedback which would be unlikely to occur from simply confining the exercise to internal audiences for whom the solution is intended. Neither Kasanen and Lukka (1993) nor Kaplan (1998) highlighted the need to carry out a literature review to draw out lessons learned from previous research to guide future research or assist with the design of potential solutions. The researcher found this an invaluable process to engage in and therefore the Constructive Approach in Management Accounting Research can be strengthened by the inclusion of a literature review at Stage 2. There needs to be an awareness of the assumptions and pre-conceptions that held personally about both the construction and the organisation. The risk exists of reticence about looking into issues that would augment the research if it was thought that these issues would not support the construction and likely conclusion (Saunders, Lewis et

al, 2007). It can be difficult to ask the patently obvious questions especially if one works within the organisation and there may be a problem with status. The researcher's organisational role is a senior one as Director of Corporate Services (and, therefore, attends Board meetings), and this may inhibit full responses as the subjects may wish to give the "expected" answer, rather than one that reflects their true feelings. However, the reality at the RBGE is that an open culture exists and that there were no inhibitions from staff commenting on the constructions and this led to useful and generally acceptable constructs.

Kaplan (1998) developed his innovative action research cycle to overcome some of the weaknesses in action research theory which persisted at the time. In particular, he referred to the need to test the developed solution to a point that it met the requirements of the identified problem. Kaplan's innovative action research cycle required the researcher to establish the problem (as did Kasanen and Lukka) but then write about the solution, teach it (present to the target and other audiences), implement the solution, and repeat the cycle until such time that a satisfactory solution is developed. What this adds to Kasanen and Lukka's approach is to use the opportunity to refine the developed model until such time as it was fully satisfactory and, therefore, it fitted into Kasanen and Lukka's phases three and four. The sequence adopted for the research was explained in the earlier section on Framework.

Conclusion 10: Action research adopting Kasanen and Lukka's (1993) constructive approach is strengthened by including a literature review, which is used to produce an applied analysis of the problem under consideration, at Stage 2 in the framework and by incorporating Kaplan's (1998) innovative action research cycle at Stage 4 to improve it as a suitable research method for solving real practical problems in an organisation.

What became evident from this research study was that to ensure any degree of success the researcher would need to be deeply embedded within the organisation. This was because the constructs that were proposed would have a fundamental impact on the way that the staff of the organisation

would be required to behave and that cultural change would be required. They would need to report against achievement against KPIs and to record their time allocated to a list of activities. These impositions were new and would require staff engagement which would have to be secured by the researcher. The first task was to engage senior management with the concepts and as the researcher was a senior director that was not too difficult. However, it would have been considerably more difficult to achieve if the researcher was an outsider with little experience of the organisation or had little influence on management practices. Even when the researcher had the advantage of being a senior member of staff some resistance was experienced which took a period of time to overcome. Moreover, some organisational expenditure was required to support these constructs which would have been extremely hard to secure by an outsider. Equally important for any action researcher proposing to undertake a similar project is for them to be fully aware of the commitment required if the work is to be carried out in personal time. What these points highlight is that action research which aims to introduce new managerial constructs must have the very active support of the most senior management, who must also be willing to release the necessary resources to see the project through to a satisfactory conclusion. This, therefore, may be a limiting factor for similar research to be carried out unless either the researcher is in a similar position to this one or the researcher is fully sponsored by a senior manager within the organisation who has the authority to allocate time and resources to the project.

Conclusion 11: Action research by an employee is a significant personal commitment when much of it is carried out in their own time and must either be carried out by a senior manager in the organisation or the action researcher must have the full and active support of the senior management team if the outcome is to be successful.

Contribution of this Study to Management Accounting Science

This study set out to determine whether the Balanced Scorecard supported by Strategic Objective Costing and Budgeting could improve the Governance of Public Sector bodies such as Botanic Gardens? It used as a

research site one of the acknowledged top four botanic gardens in the world, the Royal Botanic Garden Edinburgh. This site was selected for two reasons: firstly, the RBGE is multi-faceted in that it carries out biodiversity research, is a centre of excellence for horticulture, uniquely provides formal and informal education on related subjects, and is a major tourist attraction. The congruence of these activities would provide a challenge to any proposed construct and therefore was a rich site for investigation. Secondly, the researcher was a senior executive within the organisation and would have the best opportunity to achieve a successful outcome.

Earlier conclusions have indicated that the research aims were met and constructs were developed that could improve governance of public bodies. It is worth recalling that governance has two dimensions according to IFAC/CIMA (2004): conformance and performance and it is the latter that this study was concerned with.

The first aspect that the research dealt with was to establish whether a strategy framework such as the Balanced Scorecard could improve the formulation of the corporate plans which contained the organisational strategies with a view to making them more useful to the stakeholders rather than simply being an exercise carried out to release government funds and thereafter ignored. The research concluded that the Balanced Scorecard was a suitable framework but could only reach its full potential if sufficient adaptation of the perspectives were made to enable the organisational strategies to be catered for in a logical and meaningful manner for the users of the framework. Furthermore, the power of the Balanced Scorecard was extended by including the principal external stakeholder (in this case Scottish Government) as a perspective on the scorecard thereby allowing the RBGE to position itself in the most advantageous position in relation to its principal funder to secure the best possible support. Additionally, the construction of the RBGE's Balanced Scorecard and the associated performance management system rooted the process into many levels of staff which improved communication of strategy and enhanced understanding of how individuals aligned themselves to the organisational outcomes which in turn connected to Scottish Government's National

Outcomes. The process developed at the RBGE overcomes many of the criticisms of the Balanced Scorecard raised by a number of well respected writers.

Conclusion 12: A public sector Balanced Scorecard specifically adapted to meet the needs of an organisation's strategies and takes into account external stakeholders' requirements extends the utility and power of the Balanced Scorecard as a strategy management framework.

The second contribution that this research has made has been the development of Strategic Objective Costing and Budgeting. This accounting method was designed to overcome shortcomings in the current published management accounting methods. There has been a long standing desire to be able to state what the objectives cost to perform in order to permit a more rational allocation of resources. Until this construct was developed costing information was limited to understanding the input costs to the organisation and the total output cost disaggregated by cost centres within the organisational structure. That system could inform management what costs were incurred within the specialism of each division but not what costs were incurred by staff operating across the organisation and carrying out the activities that contributed to the achievement of the objectives. Strategic Objective Costing information not only provides data on the cost of activities and objectives it also can be traced back to the cost centres due to the coding systems in place thereby permitting Strategic Objective Budgeting to occur providing a better view of what the resources of the organisation are expected to contribute to and match outputs (KPIs) to inputs (staff effort and costs). This form of management accounting is relatively cheap to install (in cost terms) and maintain and provides very powerful information to management on the deployment of their resources. It is therefore a valuable addition to the arsenal of management accounting techniques available to practitioners.

Conclusion 13. Strategic Objective Costing/Budgeting linked to the objectives contained in a Balanced Scorecard, arguably, makes a major contribution to the applied science of management accounting.

Summary of Conclusions

1. Strategy formulation at the RBGE was ineffective without a framework to assist the staff involved.
2. The Balanced Scorecard is a Management Control System that can provide an effective system of corporate governance that will also assist strategy formulation.
3. The Balanced Scorecard system permits staff from all levels to engage in the strategy formulation processes and then the subsequent performance assessments on progress, which introduces a top down and bottom up communications tool for management and staff.
4. The Balanced Scorecard based solution can be adapted for public sector and not-for-profit use and if supported by a suitable costing and budgeting system the requisite Management Control System can be constructed.
5. The adapted Balanced Scorecard associated with Strategic Objective Costing and Budgeting is efficacious and meets Kasanen and Lukka's weak market test.
6. All of the objectives of the study have been addressed.
7. There are technical and procedural considerations that need to be taken into account, including a thorough understanding of what activities the staff undertook but the RBGE has shown that it can be done at relatively little cost but with appropriate levels of effort.
8. Cause and effect relationships can be identified between the objectives contained in the RBGE's scorecards perspectives.
9. The Balanced Scorecard is equally relevant and applicable to the private and public/not-for profit sectors if adequate adaptations are made to meet organisational strategy needs.
10. Action research adopting Kasanen and Lukka's (1993) constructive approach is strengthened by including a literature review, which is used to produce an applied analysis of the problem under

consideration, at Stage 2 in the framework and by incorporating Kaplan's (1998) innovative action research cycle at Stage 4 to improve it as a suitable research method for solving real practical problems in an organisation.

11. Action research by an employee is a significant personal commitment when much of it is carried out in their own time and must either be carried out by a senior manager in the organisation or the action researcher must have the full and active support of the senior management team if the outcome is to be successful.
12. A public sector Balanced Scorecard specifically adapted to meet the needs of an organisation's strategies and takes into account external stakeholders' requirements extends the utility and power of the Balanced Scorecard as a strategy management framework.
13. Strategic Objective Costing/Budgeting linked to the objectives contained in a Balanced Scorecard, arguably, makes a major contribution to the applied science of management accounting.

RECOMMENDATIONS FOR FURTHER RESEARCH

This research study has concluded that the managerial constructions which adapted the Balanced Scorecard and developed a new accounting system (Strategic Objective Costing) provided a solution to the problem identified.

However, it will be necessary to monitor progress with these constructions to ascertain whether they live up to the claims made by the researcher over an extended period of time. It is, therefore, recommended that a longitudinal study is carried out over a number of years. Ideally, Kaplan's innovative research cycle would be employed to make improvements to the constructions as required over time by the in-house management team but this activity could be monitored by a researcher situated either internally or externally to the organisation.

To pass the semi-strong market test and thereby enhance the utility of these constructions, attempts should be made to encourage other organisations with similar issues to adopt the constructions. The researcher is being funded by CIMA to visit botanic gardens in the USA, China and Singapore to teach the staffs there about the research study and to ascertain whether there is a willingness to adopt these constructions. If there is such a willingness then cross sectional studies may be possible, in time, to provide data on how different organisations with differing governance requirements are able to work with these constructions to improve their own performance and governance arrangements.

Summary of Recommendations

A summary of the recommendations for further research are shown below:

1. Carry out a longitudinal study of the RBGE over a number of years to ascertain whether the managerial constructions continue to be effective.
2. Determine whether the constructions have provided the ability to carry out cost benefit analyses over a period of time.

3. Carry out a cross sectional study of other botanic gardens which had elected to adopt these constructions to improve their own performance and governance arrangements.

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