THE BALANCED SCORECARD COMBINED WITH AN ALTERNATIVE COSTING SYSTEM: AN EFFECTIVE CONTRIBUTION TO GOVERNANCE

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ABSTRACT

This project investigated whether a strategy framework such as the Balanced Scorecard (BSC), linked to a Performance Management System (PMS), would, compared to a more standard model of strategic planning, improve focus and research output by botanic gardens worldwide. The focus of the project shifted as the opportunity arose to develop an objective costing system linked to the related PMS, which allowed the researchers to posit that the BSC framework could provide a more effective contribution to governance. The research output was based on an in-depth case study at the Royal Botanic Garden Edinburgh employing documentary analysis and innovative action research techniques adopting a constructive approach. This paper has been adapted for *Sibbaldia* having previously been published by the Chartered Institute of Management Accountants (CIMA) Research Project R220 (Macnab *et al.*, 2010).

BACKGROUND

Royal Botanic Garden Edinburgh (RBGE) has used a modified balanced scorecard to help it improve how it delivers its strategy, but the lessons it has learned in the process could be applied by any public service provider in any country. When organisations have to integrate several activities that are competing for limited resources the need for a coordinating system such as the BSC becomes paramount. Prior to 2010 RBGE, which was managed by a structure of three (now four) divisions subdivided into smaller departments, had a traditional cost centre accounting system based on its administrative structures. In concert with the revision of the Corporate Plan 2010/1–2014/15 (RBGE, 2010) RBGE has designed an alternative costing model which brings together management information on the costs of the contributing elements of the strategy; the links between different elements of the organisation and their contribution to strategy execution; and a quantitative and qualitative assessment of performance. These elements are all contained in its web-based Performance Management System. All this allows the organisation to allocate its scarce resources more rationally.

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Objectives

Strategic planning is an organisation's process for formulating and defining its strategy or direction, and making decisions on allocating its resources, including its capital and people. This project now aims to answer the following questions:

- Can public sector organisations benefit from a strategy formulation framework tool?
- Can the BSC framework/strategy maps be adapted for public sector and not-for-profit/charity use?
- Can the BSC/strategy map system combine with an alternative costing system to improve strategic governance?

MAIN FINDINGS AND THEIR IMPLICATIONS

Introduction

Is the BSC a suitable strategy management and governance tool for public sector organisations such as botanic gardens; if so, could the emerging principles be applied to similar types of organisations? This will be tested in the follow-up phase.

Governance

Governance is defined by IFAC/CIMA (2004) 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". In short, management control is necessary if the strategy is to be executed successfully. Organisations will find it difficult to manage all goals contemporaneously and must focus on achieving their main objectives. Lorsch (2002) stated that "If directors were getting a BSC, 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." The BSC could, therefore, be effective as an element of strategic governance.

Strategy formulation

Chandler (1962) wrote that strategy formulation is "the determination of the basic long term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out those goals". Johnson and Scholes (1999) suggested that decisions involved in developing a strategy were organisational, economic and social and "likely to be complex in nature, made in situations of uncertainty and are liable to demand an integrated approach to managing

the organisation". Strategic planning involves analyses and provides the basis for the acquisition and allocation of resources necessary to achieve the strategic objectives and set priorities. Examples of these analytical approaches are the 'Strengths, Weaknesses, Opportunities and Threats' approach abbreviated in general use to 'SWOT', and the analysis of 'Political, Economic, Social, Technological, Environmental and Legal Factors' shortened in general use to 'PESTEL'. Mintzberg (1994), however, criticised "rational, analytical approaches to strategy formulation", as they did not accept that the future can be predicted, and Ansoff (1979) conceded that strategic planning could lead to "paralysis by analysis". Grant's (2008) approach was to emphasise such analytical approaches not because he wished to downplay the emergent nature of strategy but because he believed that analysis was a vital input into strategy formulation because the greater the thought and detail that went into planning the greater the chance of the plan concluding as expected.

Of relevance to the public sector is the approach that focused on the organisation's operating environment, the demand for products and services, and the current and future technologies that would serve that sector to exploit upcoming opportunities. This approach intuitively required some analyses for strategy formulation, and in the research phase we examined whether the BSC could assist with that process.

Structures

Organisational structure can hamper successful strategy implementation as often the selected strategy is the one that best matches the existing structure and, therefore, is past-orientated rather than future-orientated. New strategies may suggest significant changes to the existing structures but this may not be possible for a variety of pragmatic reasons. Where organisations have several output activities requiring integration and compete for limited resources, the requirement for a coordinating system like the BSC becomes paramount.

Management accounting issues

Finance is a limiting factor for public organisations and the means by which resource rationing takes place. The traditional model of management accounting bases its output on the administrative structure of the organisation and its associated cost centres; and performance assessments on cost centre profitability, tight budget management or cost efficiencies. This raises questions about how effective traditional cost centre management accounting is for organisations whose structure does not follow the strategy. However, even where the primary measures are non-financial there still needs to be linkages to financial information as finance is very often the best proxy for measuring effectiveness of resource allocation. Innes and Mitchell (1998) stated that Activity-Based Costing (ABC) 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. ABC can be adapted to suit public sector organisations by linking indirect costs to the services provided through activity based cost drivers, which provides a more accurate costing of services. The research output on objective costing will suggest an alternative model to ABC.

BSC in the public sector

The difference between private and public sector BSCs was determined by placing 'mission' at the top of the framework and connecting the 'customer perspective' directly to the 'mission'. Niven's model (Niven, 2003) (Fig. 1) rotated Kaplan and Norton's model (Kaplan & Norton, 1996) around its axis without further adaptation, but other scorecard practitioners recognised the need for alternatives to the original BSC framework to reflect differences among organisations in their structures and environment. Adaptability is possibly the BSC's strongest attribute, and perspectives should be selected to fulfil the needs of the particular organisation. Marr (2009) ascertained from his research of both public and private sector organisations in the UK that where adaptation occurred the BSC proved more effective in assisting organisations' understanding and executing their

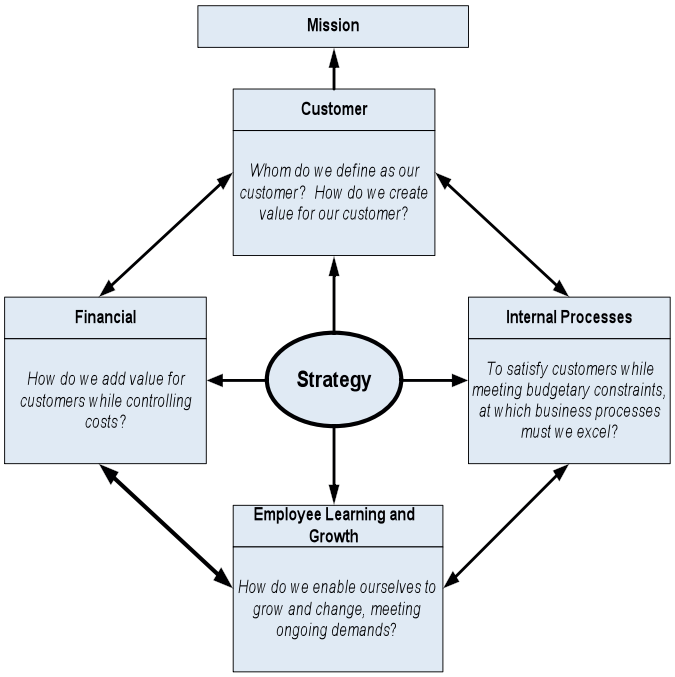


Fig. 1 Balanced Scorecard for the public and non-profit sectors. Source: Niven, 2003.

strategies; in other words triple-loop learning would occur. Therefore, an organisation needs to consider what perspectives and associated objectives adequately describe its strategy to fully utilise the power of the scorecard.

Cascading the BSC ensures that exchange of information occurs throughout the organisation and that lessons learned and emergent strategies are passed up and down the chain of command. This requires scorecards to be produced for every level of the organisation. These must be aligned up and down and between organisations where applicable if strategic alliances are in existence.

Strategy maps

Kaplan and Norton (2004) identified the need for a system that presented information showing cause-and-effect linkages to aid understanding by all stakeholders. Strategy maps present graphically the principal objectives, within selected perspectives of the BSC, contained in an organisation's strategy and show how one objective drives another to achieve the strategy in an integrated and cohesive manner. Strategy maps are equally applicable to public sector and not-for-profit organisations and permit employees to see how their own activities fit into the overarching strategy. 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. The cascaded strategy maps can assist with this issue if there are objectives to be achieved by staff in more than one division. These must be shown in each of the cascaded strategy maps so that the different staff can report on progress, avoiding the need to engage in expensive and inconvenient restructuring exercises. Consequently, there must be linkages from the cascaded maps to the corporate map and the information abstracted to that level.

RESEARCH OUTPUTS

Strategy formulation

The BSC can be modified to suit individual organisational needs. The BSC and associated strategy maps at RBGE evolved over a five-year period. The Senior Management Group – responsible for, amongst other matters, strategy development – first adopted the BSC in 2004 when they recognised that RBGE, as a public sector body, existed to provide a service to external stakeholders. The BSC proved to be a useful tool to answer the 'who, what, why, where, when' questions by using the perspectives within the scorecard; it can, therefore, be argued that the BSC is a formulation tool. At the successive planning conferences the BSC/strategy map was employed as the basis for strategy and performance reviews and the BSC evolved as a consequence. Fig. 2 shows the Kaplan and Norton model (Kaplan & Norton, 1996) and the RBGE BSC and its perspectives which emerged in 2010: Scottish Government's National Outcomes, Impacts, Activities, Resources, and Governance. The strategic objectives are shown within these perspectives.

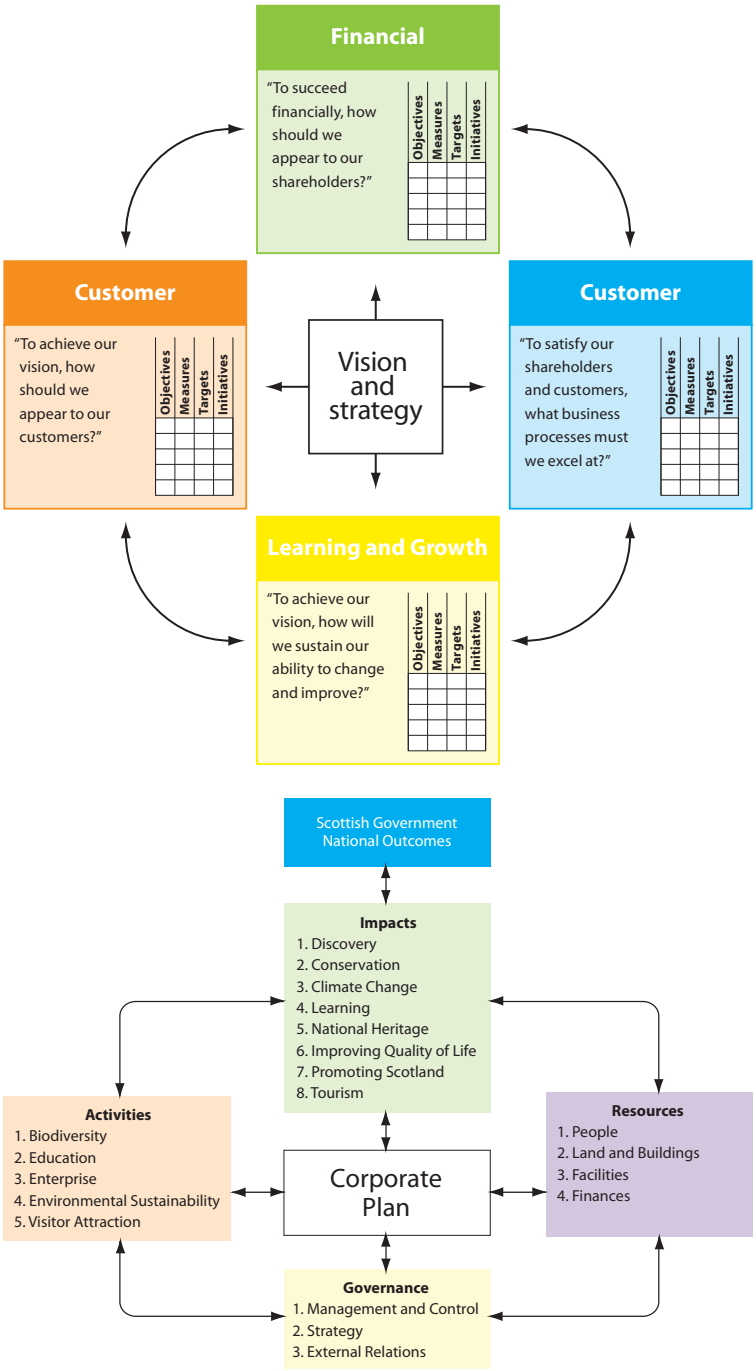


Fig. 2 The RBGE BSC developed for the Corporate Plan (below) based on the Kaplan and Norton model (above). Source: RBGE Corporate Plan 2010/11–14/15: Kaplan and Norton, 1996.

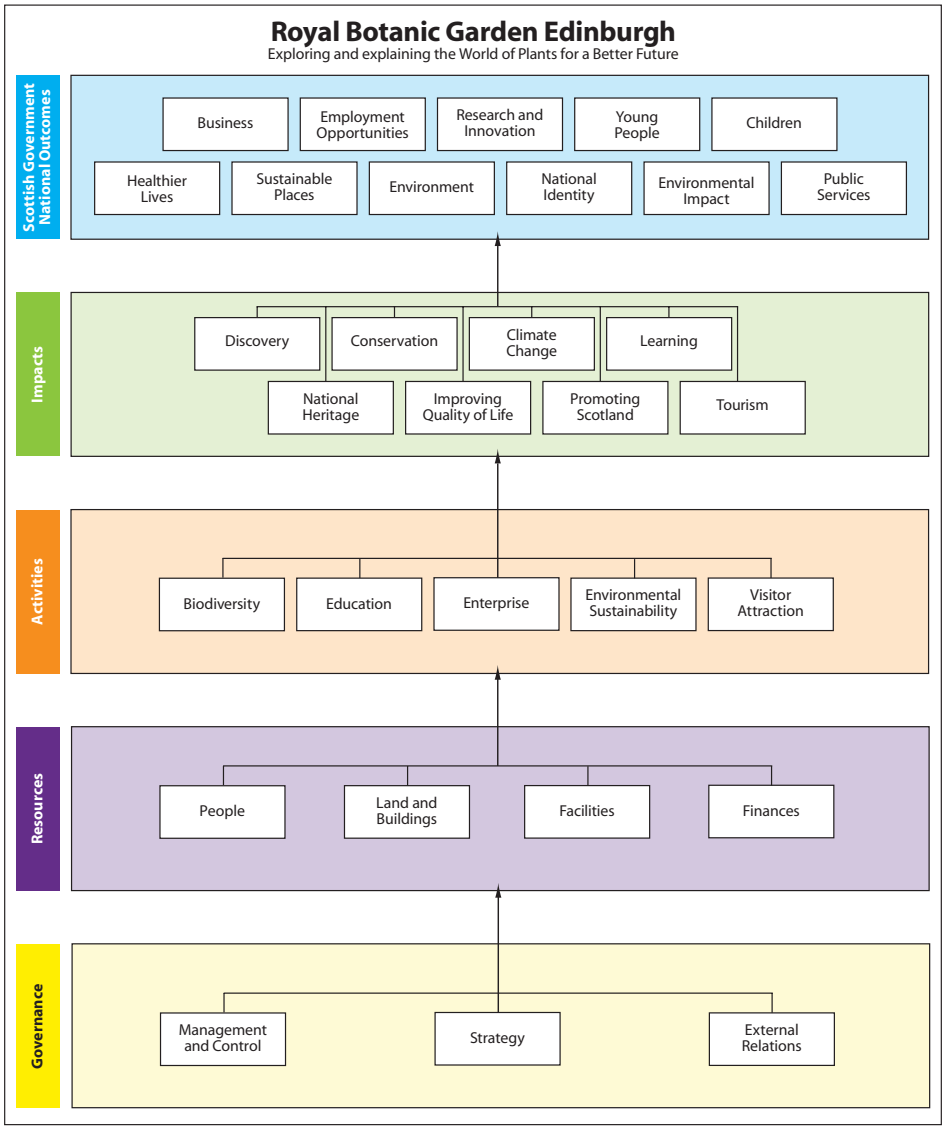


Fig. 3 The RBGE strategy map. Extracted from RBGE Corporate Plan 2010/11–14/15.

The strategy map that evolved into the representation shown above in Fig. 3 in 2010 is based on the BSC in Fig. 2.

However, it was the prospect of the Strategic Review by an international peer group (similar to university research assessment exercises) that really focused the group's mind on radically revising the perspectives and strategic objectives. There was also an imperative to show clear alignment to the Scottish Government's National Outcomes. Although the strategy was based on the revised BSC and provided a relatively straightforward view, the alignment to the RBGE's 'Impact' perspective from the 'Activity'

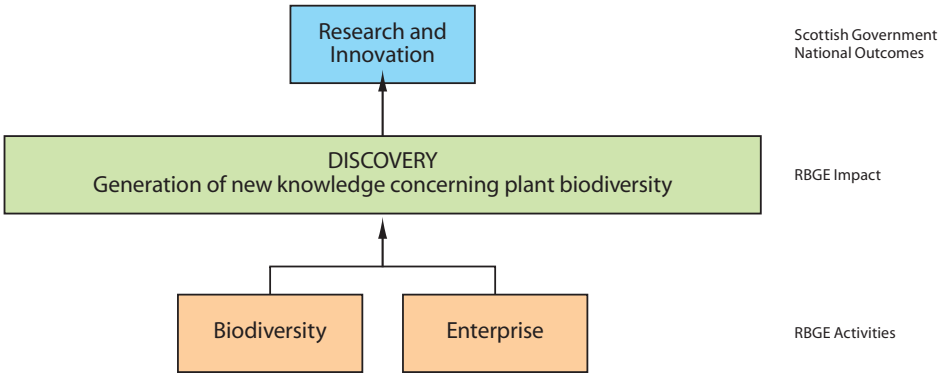


Fig. 4 Diagram showing the links between impacts and activities of RBGE. Extracted from RBGE Corporate Plan 2010/11– 14/15.

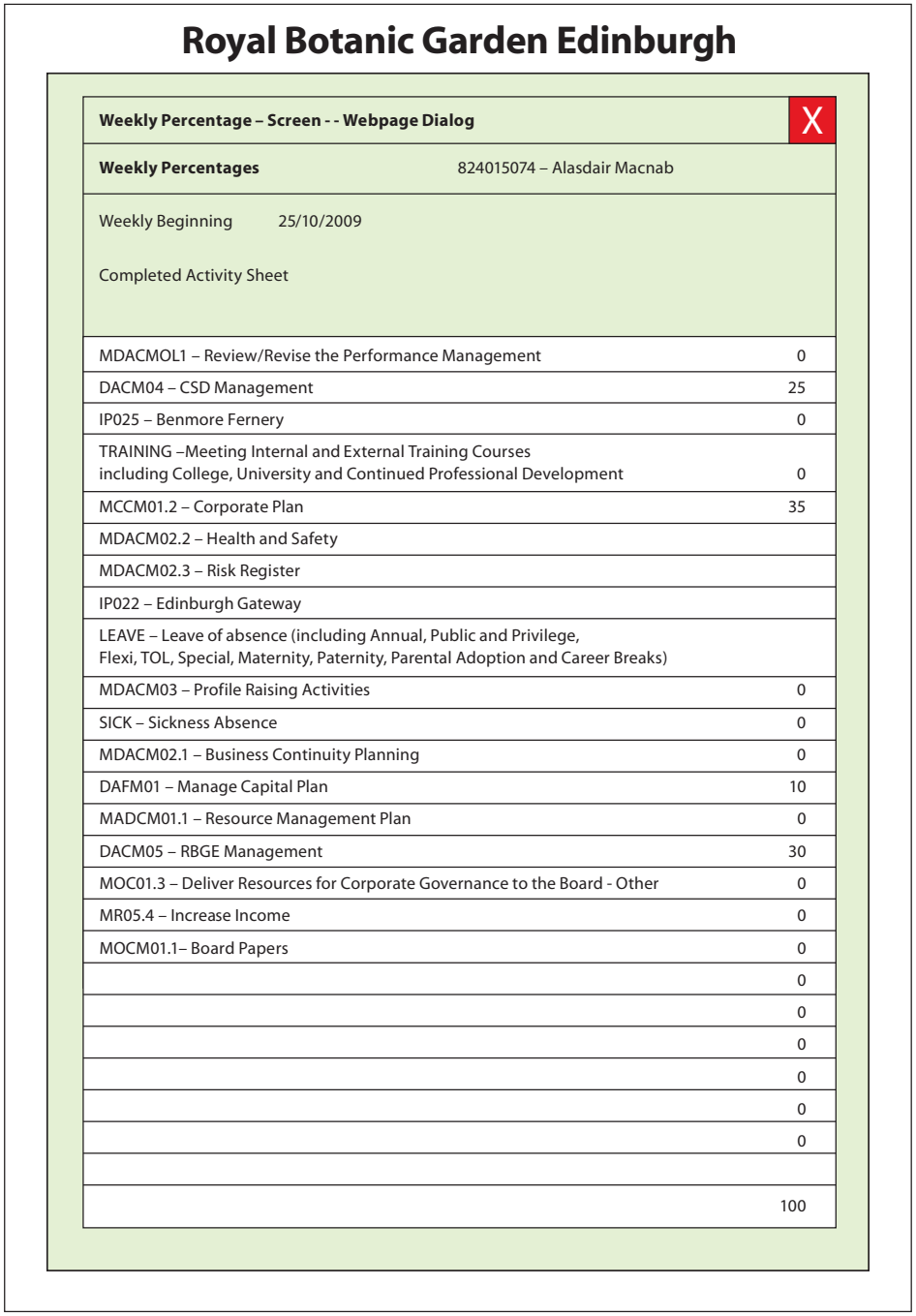
perspective required additional effort. The result of this work is shown in the RBGE Corporate Plan 2010/11–2014/15. Fig. 4 above provides an example of detailed linkages.

Risk profile

The risk profile attached to these strategic objectives is contained in a Risk Register, but a version of the strategy map is used for graphic presentation so that the Board of Trustees and Senior Management Group (SMG) can identify those strategic objectives facing high risks and requiring immediate attention.

Software selection

Several software solutions that supported the BSC were examined for suitability and the Executive Strategy Manager™ (ESM) from the Palladium Group was selected. The attractive component of this software solution was that it has a strategy map interface which could drill down to objectives, measures and initiatives at corporate and divisional level (cascaded) and use the 'red, amber, green', or 'traffic light', system of visual alerts. This had the advantage of presenting a view of the strategy map with which staff had become familiar in the Corporate Plan. The performance analysis is supported by quantitative data, narrative explanations, cause-and-effect linkages and their impact on the achievement of the objectives. The ability of many staff to input data permitted a much wider engagement in developing, formulating, supporting and reporting on strategy progress. The main challenge of such systems is the need to consider what information is required, time invested in the system design, providing training in its use to a large number of staff and investment in management commitment. These processes, if successful, overcome many criticisms, including that of the lack of causal linkages and an overly top-down approach, that have been raised by some well-respected writers. At the outset considerable input was required from staff but this produced an over-



Royal Botanic Garden Edinburgh

Weekly Percentage – Screen - - Webpage Dialog X

Weekly Percentages 824015074 – Alasdair Macnab

Weekly Beginning 25/10/2009

Completed Activity Sheet

MDACMOL1 – Review/Revise the Performance Management	0
DACM04 – CSD Management	25
IP025 – 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	
IP022 – Edinburgh Gateway	
LEAVE – Leave of absence (including Annual, Public and Privilege, Flexi, TOL, Special, Maternity, Paternity, Parental Adoption and Career Breaks)	
MDACM03 – Profile Raising Activities	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
MR05.4 – Increase Income	0
MOCM01.1– Board Papers	0
	0
	0
	0
	0
	0
	0
	100

Fig. 5 Screenshot of the time recording system for the working week of A. Macnab, the principal author.

complicated system of measurements as individual contributions were fully reflected in the design. Valuable lessons were learned and a second, more streamlined, version was produced in early 2010.

Objective costing

Cost centre costing and ABC may be adequate for organisations that deliver strategy through cost centres but do not account so effectively for the costs to organisations where staff work cross-divisionally and in cross-cutting themes. 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. Decisions may require to be made about where to direct efforts to maximise efficiencies and effectiveness and it will be necessary 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. None of the RBGE systems for managing performance, the Finance Department or Human Resources (HR) were set up to deal with this requirement and so a novel approach was developed. Each activity being measured as part of ESM had a unique code and was structured to follow the objective coding system; initially, there were some 350 different activities being tracked. The Finance Department system was

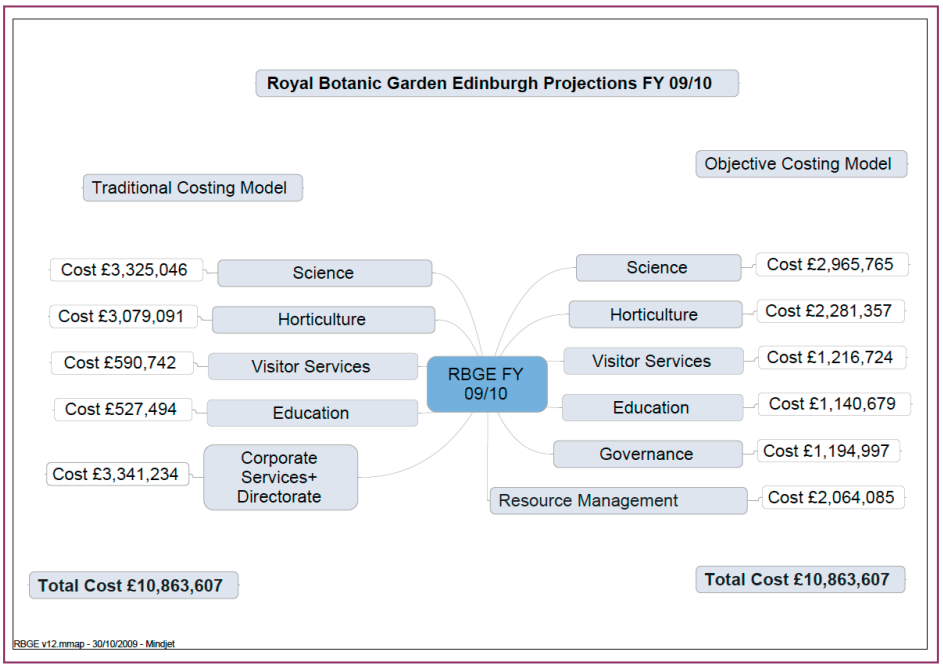


Fig. 6 Example of the comparison of the high-level outputs from the two costing systems.

amended to demand two codes: one for the traditional cost centre systems necessary for producing financial accounts, and a second to allocate costs against a departmental activity. The HR system was developed to include a time allocation system that collected either actual hours spent on activities or a percentage of working days on the range of activities that individual staff members were expected to complete. A screenshot of the time recording system is shown in Fig. 5.

Although staff could opt to complete the online time sheet in either percentages or hours the system calculated costs based on percentages of total salary as the staff members got paid the same whether they worked a 37-hour week or a 60-hour week. The additional hours spent were down to the individual wishing to do so and not at the request of management; this situation is not untypical in academic institutions. However, for those staff members who were paid contractual overtime these costs were captured through the finance system. ESM was able to perform an SQL query on the outputs of these two systems (HR and the Finance Department), which exported the data into Excel spreadsheets and allocated both staff costs and non-salary financial costs to the activities being tracked. ESM was also able to abstract that information up the scorecard system to provide costings at the corporate/strategic level.

The costing information may be presented at individual activity level, departmental level and strategic objective level and was fed into the activity reports by ESM, which provided visibility of costs and 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 homogeneous in skill sets within their own cost centres and, therefore, not easily deployable to alternative employment, they were engaging in activities that could cease if greater resource effort was required within their own skills area; for example, some scientists and horticulturists could cease some management and educational activities. This objective costing system would allow management to consider redeployment of skills and knowledge and assess the impact of such decisions with the subsequent reporting that would take place during the course of the year.

An example of the comparison of the high-level outputs from these two costing systems is shown in Fig. 6.

The notable costing outputs from this system are Science, Horticulture, Visitor Services and Education, and it can be seen where staff effort is actually taking place regardless of where the different sets of staff sit within the organisational structures; science and horticulture staff make significant contributions to education and visitor services. If we can determine this information then the issue of structure can be overcome – we can dispense with the need to change structures to follow strategies if we have aligned sub-unit objectives to the Corporate Strategy.

Implementation issues

As is commonly found with implementing new systems, there are procedural issues to resolve and cultural difficulties to overcome. The time recording system was bespoke-designed and initially proved awkward and inflexible in meeting user needs. Once feedback was provided to the developers these issues were resolved; there is 90 per cent usage, and given that many staff are working in the field this is highly satisfactory. The initial system was overcomplicated because too many staff were involved; it became challenging in some areas when it came to reporting. Consequently, with the significant revision of the Corporate Plan the programme was modified in early 2010 to provide a more streamlined system capable of producing accurate information at strategic level.

SUMMARY

The BSC was designed to assist strategy execution and provide a basis for performance management. What emerged was that the BSC could help public sector organisations with strategy formulation if it was appropriately adapted to suit the specific needs of the organisation. Each strategic objective could be monitored for its impact on the overall corporate strategy, and emerging strategies could be incorporated.

An objective costing system has been developed that is managed through the BSC and supported by bespoke adaptations to the HR and Finance Department management software systems. This will bring together management information on the costs of the contributing elements of the strategy, the linkages between different elements of the organisation and their contribution to strategy execution, and a detailed quantitative and qualitative assessment of performance, allowing a more rational allocation of scarce resources; triple-loop learning would occur.

The BSC, coupled with the application of the objective costing system and the inclusion of compliance reports (Management and Control objective), will prove to make an effective contribution of the performance dimension of the strategic governance system at RBGE. It offers a model that may well be beneficially replicated in other public sector organisations.

ACKNOWLEDGEMENTS

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