Budgets and performance management

06

Guidance and teaching advice

This chapter logically follows from Chapter 5 in that it looks at how budgets can be used, once they have been established, as part of overall performance management.

In order to cater for the non-accounting audience, the emphasis of this chapter is upon the broader context of performance management. The chapter therefore goes beyond the mechanics of budget monitoring and variance analysis to look at non-financial aspects of performance management and how they are integrated with financial information in order to provide a well-rounded set of performance figures for managers. The chapter covers the balanced scorecard and looks at performance measurement in not-for-profit organizations. The chapter also continues with some of the discussion started in Chapter 5 on the behavioural aspects of budgeting, looking at how these relate to performance management with issues such as gaming and creative accounting.

The broader context of performance management

Before launching into the detailed subject of budget monitoring and variance analysis, we have attempted to place this within a broader context of performance management. We feel that this is important for non-accounting students as they need to understand how variance analysis fits within this important aspect of management. As with any topic, students are more likely to engage with some of the more difficult nitty-gritty details if they have contextual understanding of why this is important to them.

We have based the discussion of performance management around two important principles: responsibility and controllability. It is important that students understand that these two principles lie at the centre of any good performance management system, whether it be based upon financial information or non-financial information. The responsibility principle states that managers must have clearly delineated responsibility and fully understand what they are responsible for and what they are not responsible for. The controllability principle states that managers should be held

responsible only for what they can control. There is scope for interesting discussion around these two principles, particularly in terms of students' own experiences, and there is scope to introduce some interesting examples of this stage.

Profit related performance measurement and variance analysis

Although it is important to go into some numerical detail in variance analysis and for students to understand the principle of standard costing, we have emphasized the comprehension and analysis of performance data over its preparation. For non-accounting students it is more important that they are able to understand and interpret performance data than it is for them to go into a lot of detail about how to calculate variances.

The worked examples in this chapter therefore focus around presentation of variance data and their analysis. We believe that non-accounting students should be able to read a variance report, and be able to identify the most likely reasons that variances occur.

Standard costing and benchmarking

Some commentators may argue that standard costing has diminishing relevance within a modern business context, and is suitable only for manufacturing. However, we believe that it is important for students to understand the principles of standard costing and we have been at pains to point out its relevance within a modern business context. Particularly, in relation to the arguments against budgeting presented in Chapter 5, beyond budgeting approaches still depend upon some aspects of measurement and benchmarking, which makes the principles of standard costing extremely relevant.

Performance management in investment centres

As well as covering performance management in cost centres and profit centres, we have included investment-centre performance analysis within this chapter. The chapter therefore links forward to the discussion of investment appraisal in Chapter 9.

The balanced scorecard

The balanced scorecard is so widely used as a performance measurement system that we felt it was important to include it in some detail in this chapter. We have therefore included examples of the application of the balanced scorecard both in a commercial profit-seeking organization and in a not-for-profit organization. A useful exercise for students would be to seek out other examples of the application of the balanced scorecard. Also, a good class case-study exercise would be to develop a balanced scorecard for a known organization.

Performance management in not-for-profit organizations

It has been our experience that many, particularly mature, postgraduate business students come from the public sector or the voluntary sector. It is a turnoff for such students to be presented exclusively with commercially focused examples, and issues which are not relevant for the not-for-profit sector. We have therefore included a substantial section within this chapter which looks specifically at performance management within the not-for-profit sector.

Performance management in modern business systems

Performance management is one of the more dynamic areas of management accounting and one which is seeing ongoing development and innovation. In particular, there have been many developments in performance management in response to developments such as total quality management, systems thinking and just-in-time management. This is therefore a good area of the syllabus for the students to do their own research and analysis.

Further reading

- Daniels, A C and Daniels, J E (2004) *Performance Management: Changing behavior that drives organizational effectiveness*, 4th edn, Performance Management Publications, Atlanta, GA
- Johnson, H T and Kaplan, R S (1987) *Relevance Lost: The rise and fall of management accounting*, Harvard Business School Press, Cambridge, MA
- Kaplan, R S and Norton, D P (1992) The balanced scorecard: measures that drive performance, *Harvard Business Review*, Jan–Feb, pp 71–80
- Kaplan, R S and Norton, D P (1993) Putting the balanced scorecard to work, *Harvard Business Review*, Sep–Oct, pp 2–16
- Kaplan, R S and Norton, D P (1996a) Using the balanced scorecard as a strategic management system, *Harvard Business Review*, Jan–Feb, pp 75–85
- Kaplan, R S and Norton, D P (1996b) *The Balanced Scorecard: Translating strategy into action*, Harvard Business School Press, Cambridge, MA
- Kaplan, R S and Norton, D P (2004) *Strategy Maps: Converting intangible assets into tangible outcomes*, Harvard Business School Press, Cambridge, MA
- Malina, M A and Selto, F H (2001) Communicating and controlling strategy: an empirical study of the effectiveness of the balanced scorecard, *Journal of Management Accounting Research*, **13**, p 47
- Norreklit, H (2000) The balance on the balanced scorecard – a critical analysis of some of its assumptions, *Management Accounting Research*, **11**, pp 65–88
- Schneiderman, A M (1999) Why balanced scorecards fail, *Journal of Strategic Performance Measurement*, January, pp 6–11

Additional questions

Question 1

The following information relates to the wards in the cardiology department of a hospital for one accounting period:

	Wards		
	1	2	3
Number of beds	12	10	20
Total number of patients	48	32	108
Total ward staff (excluding consultants)	8	8	12
Ward staff – full-time equivalent	5	4	6
Variable operating costs for period	$58,000	$66,000	$98,000
Operating fixed costs	$85,000	$67,000	$88,000
General overhead costs	$40,000	$40,000	$40,000

General overhead costs are made up of recharges from support services. The total cost of $120,000 is split equally between the three wards.

The hospital manager is concerned about the high costs of running the three heart-care wards. She has asked you to investigate their performance.

Required:

Write a report which investigates the costs of operating the three hospital wards. Your report should include appropriate measures of performance for each ward and you should draw conclusions from the costs.

Question 2

Kitchen Co manufactures a single product, a laminated kitchen unit which has a standard cost of $80 made up as follows:

		$
Direct materials	15 sq metres at $3 per sq metre	45.00
Direct labour	5 hours at $4 per hour	20.00
Variable overheads	5 hours at $2 per hour	10.00
Fixed overheads	5 hours at $1 per hour	5.00
		80.00

The standard selling price of the kitchen unit is $100. The monthly budget projects production and sales of 1,000 units.

Actual figures for the month of September are as follows:

Sales	1,200 units at $102
Production	1,400 units
Direct materials	22,000 sq metres at $4 per sq metre
Direct wages	6,800 hours at $5 per hour
Variable overheads	$11,000
Fixed overheads	$6,000

Closing stock is valued at standard cost.

Required:

Construct a statement to reconcile Kitchen Co's actual and budgeted profit for September, showing all appropriate variances.

Question 3

Marlin Limited manufactures double glazing units. The following information relates to its production department for the month of April.

Production budget for April (1,000 units):

	$
Direct materials:	
2,000 kg plastic at $2.50 per kg	5,000
2,000 sq metres of glass at 50p per sq m	1,000
Direct labour: 3,000 hours at $6.50 per hour	19,500
Variable overheads: 3,000 hours at $3 per hour	9,000
Fixed overheads: 3,000 hours at $2 per hour	6,000
Total cost	40,500

Actual production costs for April (900 units):

	$
Direct materials:	
1,900 kg plastic at $2.60 per kg	4,940
2,020 square metres of glass at 45p per sq m	909
Direct labour: 2,800 hours at $7.50 per hour	21,000
Variable overheads:	8,680
Fixed overheads:	6,300
Total cost	41,829

Required:

(a) Explain what a standard cost is and how standard costs are established.

(b) From the information given above, calculate the following variances:

- **(i)** material price variance;
- **(ii)** material usage variance;
- **(iii)** direct labour rate variance;
- **(iv)** direct labour efficiency variance.

(c) 'Standard costing and variance analysis has no relevance in a service industry.' Discuss.

Question 4

Wideport Health Authority is undertaking a review of the cost of support services within its hospitals. You have been asked to review the laundry service. The Authority has three hospitals, each of which operates a laundry. You have been provided with the following information from the last financial year:

	Laundry A	Laundry B	Laundry C
Cost of electricity	$31,040	$31,280	$54,150
Cost of detergent	$3,840	$7,820	$8,550
Maintenance and repair	$2,560	$3,060	$3,990
Capital costs of laundries:			
Cost of buildings	$120,000	$80,000	$75,000
Cost of equipment	$11,000	$13,000	$17,000
Number of employees:			
Laundry manager	1	1	1
Supervisor	0	1	1
Full-time assistant	3	4	3
Part-time assistant	1	0	3
Number of bags of laundry washed	32,000	34,000	57,000

Notes:

1. Soiled linen is delivered to each laundry in 10 kg bags. Washing machines will take a 10 kg load for each wash cycle.
2. Laundry managers are paid $12,000 per year. Supervisors are paid $10,000 and laundry assistants are paid $7,000 (part-time staff work half the hours of full-time staff and are paid on a pro-rata basis).
3. Overheads on wages amount to 12% of the total wage cost.
4. Central administration costs are apportioned to each laundry on the basis of 5 cents per bag of laundry washed.
5. Buildings are depreciated on a straight-line basis over 40 years. Equipment is depreciated on a straight-line basis over 10 years.

Required:

(a) Explain what is meant by the '3 E's' of performance evaluation, and explain how they are relevant in the case of the three laundries above.

(b) Investigate the costs of operating the three laundries and draw appropriate conclusions from those costs.

Suggested solutions

Question 1

Calculated figures

Patient turnover (per bed)	4	3.2	5.4
FTE staff per bed	0.42	0.40	0.30
FTE staff per patient	0.10	0.13	0.06
Variable cost per bed	$4,833	$6,600	$4,900
Variable cost per patient	$1,208	$2,063	$907
Fixed cost per bed	$7,083	$6,700	$4,400
Fixed cost per patient	$1,771	$2,094	$815

Discussion points

- Allocation of general overhead costs – better per bed or per patient?
- In evaluating performance, look only at those costs which are controllable – variable costs?
- When comparing costs, consider the issue of differing size of each ward: does ward 3 benefit from economies of scale?
- Do any of the wards offer specialist or more intensive care which is more expensive?
- Ward 2 has the lowest bed turnover and highest costs – specialist/longer-term care?

Question 2

		$ *Adverse*	$ *Favourable*	$
Budgeted profit				20,000
Sales variance				
	Sales margin price		2,400	
	Sales margin volume		4,000	
Materials	price	22,000		
	usage	3,000		
Labour	rate	6,800		
	efficiency		800	
Fixed overheads				
	Expenditure	1,000		
	Volume efficiency		200	
	Volume capacity		1,800	
Variable overheads				
	Expenditure		2,600	
	Efficiency		400	
		32,800	12,200	
Net variance				20,600
Actual profit				–600

Question 3

Variances

Material price (plastic):	(SP – AP) × AQ (2.50 – 2.60) × 1,900 =	190	A
Material price (glass):	(SP – AP) × AQ (0.50 – 0.45) × 2,020 =	101	F
Total material price variance		89	A
Material usage (plastic):	(SQ – AQ) × SP (1,800 – 1,900) × 2.50 =	250	A
Material usage (glass):	(SQ – AQ) × SP (1,800 – 2,020) × 0.50 =	110	A
Total material usage variance		360	A
Labour rate:	(SR – AR) × AH (6.50 – 7.50) × 2,800 =	2800	A
Labour efficiency:	(SH – AH) × SR (2,700 – 2,800) × 6.50 =	650	A

Question 4

(a) The '3 E's' of performance evaluation

Efficiency	is a measure of the relationship of inputs to outputs. It can be measured in this case in terms of cost per bag of laundry.
Effectiveness	is a measure of the extent to which aims are achieved. In this case the issue is whether the laundries are satisfying the requirements of the hospital for clean linen.
Economy	relates to working within the given financial constraints. In this case it relates to the overall cost of running the laundries.

(b) Costs of the three laundries

This question is designed to test the students' understanding of performance evaluation in a support service situation. Students should be able to derive and comment upon appropriate measures of performance based upon the information provided. Good answers will include the following:

- a calculation of cost per load, analysed by cost elements (see table below);
- consideration of the implication of the different levels of activity of each laundry;
- consideration of the differing capitalized values of buildings and therefore depreciation charges and the appropriateness of inclusion for comparison purposes;
- similar consideration of the capital value of equipment and the possible different age/nature of the equipment and implications for efficiency;
- the different staffing structures.

	Laundry A		Laundry B		Laundry C		Total	Av
	Cost	Load	Cost	Load	Cost	Load	Cost	Load
Electricity	31,040	0.97	31,280	0.92	54,150	0.95	116,470	0.95
Detergent	3,840	0.12	7,820	0.23	8,550	0.15	20,210	0.16
Maintenance	2,560	0.08	3,060	0.09	3,990	0.07	9,610	0.08
Depreciation of building	3,000	0.09	750	0.02	1,875	0.03	5,625	0.05
Depreciation of equipment	1,100	0.03	1,300	0.04	1,700	0.03	4,100	0.03
Manager	12,000	0.38	12,000	0.35	12,000	0.21	36,000	0.29
Supervisor	0	–	10,000	0.29	10,000	0.18	20,000	0.16
Assistant	24,500	0.77	28,000	0.82	31,500	0.55	84,000	0.68
Wages on-costs	4,380	0.14	6,000	0.18	6,420	0.11	16,800	0.14
Admin	1,600	0.05	1,700	0.05	2,850	0.05	6,150	0.05
TOTAL	84,020	2.63	101,910	3.00	133,035	2.33	318,965	2.59
Number of washes	32,000		34,000		57,000		123,000	
Number of F/T equivalents	4.5		6.0		6.5		17	
Washes per staff	7,111		5,667		8,769		7,235	