Answers

1 To: CEO
From: A Accountant
Date: June 2014
Subject: **Performance reporting and value-based management at Cantor**

This report evaluates the current performance reporting and cost structures of Cantor. It evaluates the impact of value-based management at Cantor calculating its current economic value added. Finally, recommendations for new performance measures for the new ethical area in the company's amended mission are made.

(i) Current performance report

The current report has a number of strengths and weaknesses. These will be discussed according to whether the report:

– addresses the overall aims of the group
– assists the individual subsidiaries
– is well-presented
– contains appropriate information for decision-making.

The current mission of the group can be broken down into three parts:

– to maximise shareholder value;
– supplying good value food and drink; and
– providing appealing environments for our customers.

The report does not directly measure shareholder value which could be done through considering net present value or economic value added (EVA^{TM}) or share price and dividends. This problem has been recognised and is addressed in a later section of this report. The current report uses period profits as its main measure of performance. This can suffer from being short term unlike the shareholder value measures mentioned. The report does compare budget and actual performance which gives an indication of whether plans are being followed and is helpful in controlling the organisation.

There is an indirect measure of the customer value being offered by the group through the gross profit which, when compared to the industry average, gives a partial measure of value but without data on the price/quality mix compared to competitors, it is difficult to be conclusive about this. Revenue growth compared to industry growth would aid in giving an impression of the attractiveness of our offering to the customer. However, no historic information is given which would allow trends to be calculated.

Measuring the appeal of the sites to customers will be difficult and involve subjective non-financial measurements. Customer loyalty and price elasticity of demand will give some indication of the appeal but it will be difficult without directly surveying customers to untie this from the issues of price/quality mentioned above.

The main board would probably find it easier if less detailed figures were given and a clear statement of the key measures of subsidiary performance provided.

The report seems to treat the subsidiaries in the same way as the group, using profit and comparison to industry average margins and budgets as the main assessment tools. As already mentioned, the reporting of performance against budget is a helpful control tool. However, as the subsidiaries will have more detailed issues than the group, it does not seem appropriate to be using the same high-level overview as for the group board. For the subsidiaries, it would be expected that there would be a more detailed breakdown of revenues and gross margins by product line. Marketing, which is a significant cost, is not attributed to specific sites/products which would help to explain the changes in these categories. The subsidiary managers would probably benefit from the inclusion of a breakdown of profit by geographical region as well. It would seem that the measure being used to assess subsidiary performance would be the operating profit, which is appropriate as it contains the elements of performance controllable by the subsidiaries' managers. The annual reporting period would also appear to be too lengthy to allow the detailed control of operations required by the subsidiary boards.

In terms of presentation, the data is clear and in a form which would be easily recognisable to those used to reading accounts. However, it is common to provide a narrative commentary with such a report in order to highlight the key features in the report, such as major deviations from the budget or performance well outside industry norms. The report could be made easier to read by rounding all figures to thousands and thus removing unnecessary detail.

To summarise, additional information which could be supplied in the report also includes:

– historic information to demonstrate trends (especially important at Juicey with its fast growth)
– greater detail by product or site to aid the managers of the subsidiaries
– competitor information relating to their performance in the three areas of Cantor's mission (shareholder value, product value, site appeal).

(ii) Cost structures

The costs at Cafes and Juicey are a mix of fixed and variable. Fixed costs represent a risk to Cantor since if there is a fall in the general economy, these must still be covered by revenues. So, a breakeven analysis would be helpful in this situation. The difficulty with such an analysis is that some costs are partly fixed and partly variable.

Staff costs are likely to be part-fixed and part-variable. As these represent a significant part of the cost base, it will be necessary to establish what element is fixed (how many staff are the minimum required to run a site?) and what element is variable (how many staff can be used as needed when the sites are busy?). This cost area will be managed through decisions over the balance of the numbers of permanent and casual staff with casual staff being used to manage fluctuations in business.

Rent costs affect each subsidiary differently. At Cafes, rent is fixed and this is appropriate for a mature, established business where revenues ought to be predictable and so the fixed nature of the cost should not threaten the survival of the operation. At Juicey, the rent is a percentage of revenue and in a new operation this is appropriate as the rent will grow with the business. However, the percentage demanded will reflect the risk which the landlord is taking on the success of Juicey and so will be higher than a fixed rent such as negotiated by Cafes. As Juicey becomes established, it may be worth considering beginning to move to negotiating fixed rental deals for Juicey in order to cut this cost.

This last point illustrates the dilemma which many businesses face in thinking about the balance of fixed and variable costs. Variable costs are more desirable as they do not threaten the survival of the business but they are often higher than a fixed cost deal.

(iii) Economic value added

	$
Operating profit	10,852,970
Add back	
Marketing capitalised	3,819,000
Less	
Tax paid	2,100,000
Lost tax relief on interest	200,250
NOPAT	12,371,720
Capital employed	
At 2014 year start	53,400,000
Marketing spend capitalised	3,819,000
Adjusted capital employed	57,219,000

WACC = (1/1·3 x 15·7%) + (0·3/1·3 x 6·5% x (1 – 25%))
= 13·2%

EVA^{TM} = NOPAT – (WACC x Capital employed)
= 4,818,812

The EVA^{TM} of Cantor for 2014 was $4·82m, showing this was added to shareholder value over the period by the group. The result reflects the fact that the group is comfortably exceeding its cost of capital.

This calculation is limited by the information available and a number of approximations and assumptions have had to be made. One approximation is that the accounting depreciation charge represents the economic depreciation suffered by the company. A more detailed examination would be required in order to check this against the full version of the EVA^{TM} calculation. The marketing spend is partially capitalised to the extent that it represents a long-term investment in the brand name of Cantor. Further work should be done to identify if this long-term marketing spending requires to be amortised and so charged back against NOPAT; the capital employed calculation gives an illustration of how the year start figure might be affected but all prior years with their related amortisation would need to be considered for a full answer.

It may prove useful for the subsidiaries' performance management to collect data and calculate their individual EVA^{TM}s.

[**Tutor note:** *Credit would be given for narrative comment or illustrative adjustment for marketing spend on capital employed. The calculation of EVA^{TM}s is discussed in a two-part article entitled 'Economic value added versus profit-based measures of performance'.*]

(iv) Value-based management

VBM begins from the view that the value of a company is measured by its discounted future cash flows. The idea being that value is only created when companies generate returns which beat their cost of that capital. VBM then focuses the management of the company on those areas which create value. A key to this process is the identification of the drivers of value and then a concentration of effort at all levels (strategic, tactical and operational) on these drivers in order to increase the value of the firm.

The implementation will broadly involve four steps:

1. A strategy is developed to maximise value.
2. Key value drivers must be identified and then performance targets (for both the short and long term) are defined for those value drivers.

3. A plan is developed to achieve the targets.
4. Performance metrics and reward systems measurement and incentive systems are created compatible with these targets.

At Cantor, these steps might include a strategy of acquisition and disposal to go alongside the organic growth of Juicey. The key value drivers for each operating subsidiary would have to be identified from strategic to operational levels and these could include gross margins (strategic) and site service levels (operational). Targets must then be developed from these measures – possibly by benchmarking against competitors.

The impact for Cantor would be the introduction of new performance measures based on the drivers and a reward system to motivate staff. There will be the need to develop such measures, targets and reward at the group level, then at the subsidiary level and, finally, at the individual site level in order to ensure full coordination of the system across Cantor. In order to align the interests of employees and management with shareholder value, a feature of the new reward system is often a share-based payment scheme.

The key benefits of VBM are the focus on value as opposed to profit, so reducing the tendency to make decisions which have positive short-term impact but may be detrimental in the long term. VBM thus will help to make Cantor more forward looking.

A danger of the VBM exercise is that it becomes an exercise in valuing everything but changing nothing. It is important that the detailed operational issues of the organisation are addressed through the new measures/targets. A further difficulty in implementation is that the measurement of the key value drivers can often involve non-financial indicators and these can represent a significant change for accounting-based management information systems.

(v) Measurement of treatment of employees

The measurement of treatment of employees is difficult due to its subjective nature. The organisation will constantly be in negotiation with the employees as they have conflicting aims, for example, over pay rates and workloads. The information in the appendices allows a number of measures to be calculated which could provide some indication of employee satisfaction and treatment.

	Cafes	**Juicey**	**Group**
Average employee numbers	1,498	106	1,624
Employee turnover rates	9·7%	14·2%	9·9%

Using staff costs and employee numbers, the average pay at Cantor is $13,143 (= 21·345m/1,624) and this could be compared to competitors. The comparative information is not given in the reports at present, although an indication is given through the staff cost margin which shows Cantor paying a slightly higher proportion of revenue than the industry average. However, caution must be taken with such a measure as it is an average and does not necessarily reflect the position of many individual employees.

The staff numbers data also allows calculation of staff turnover rates as 9·9% (= 161/1,624) at the group as a whole and 9·7% at Cafes and 14·2% at Juicey. This indicates staff satisfaction and the variation between Cafes and Juicey should be investigated. It may be due to the learning curve which managers are experiencing in the fast growing and newer operation.

[**Tutor note:** *Using year-end figures is acceptable too in this case.*]

2 (a) Annual costs of new system:

	$
Hardware for warehouse and purchasing depts (depreciation)	27,500
Software total cost (depreciation)	34,375
On-going servicing cost	22,500
	84,375

Benefit of new system (cost savings):

		$	
Staff costs	Warehouse	125,000	= 10 x $25,000 x 50%
	Purchasing	54,400	= $32,000 x 8·5/5
		179,400	

Net benefit $95,025

The BPR project will yield a net benefit of $95,025 p.a. and so the project is financially successful. However, there are other costs not included in this analysis such as redundancy/retraining of the staff whose workload has been reduced and the training costs for staff on the new system.

[**Tutor note:** *An analysis using other methods such as payback or accounting rate of return would be equally acceptable.*]

(b) Business process re-engineering (BPR) is described as the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service and speed. It cuts across traditional departmental lines in order to achieve a more efficient delivery of the final product. At Booxe, this is evident in the effect which the BPR project has had on both warehousing and purchasing departments.

This change to a process view will require a change towards process teams rather than functional departments. Employees will need to retrain in order to gain additional skills. The organisational hierarchy will flatten with the employees being given more responsibility to make decisions. This is often aided by the introduction of a unified corporate database accessed through an ERP system. These will represent major changes at Booxe which appears to have become set in its ways. The change will require much communication and leadership from senior management as a result.

The implications for accounting at Booxe are that performance measures must be redesigned around processes rather than departments. The aim is to identify where value is being added and eliminate where resources are employed to no valuable outcome. An activity-based approach might be used to model the processes in the business as part of the BPR restructuring and this could be carried on in the accounting systems. The ABC system of costing is a more detailed method of allocating overheads in order to achieve a more accurate product cost and, therefore, a more accurate idea of the profit each product generates. It is more time-consuming and expensive to set up compared to traditional overhead absorption methods but in the context of the intended changes to processes at Booxe due to BPR, it will fit well. Financial reports will have to be redesigned around process teams and any variances to budget used may need to be reconsidered in the light of the activity-based approach.

[**Tutor note:** *Other analysis models (for example from P3) could be relevant to this answer and would be given appropriate credit within the mark limitations of the requirement.*]

(c) Appraisal is the process of collecting and reviewing data on an employee's work which will provide an assessment of their capabilities and potential in order to improve performance, for example, by training. It also presents an opportunity to deal with other HR issues, such as discipline, career management, motivation and determining rewards.

There is a general need for some kind of performance assessment; however, appraisal systems are often criticised as irrelevant to the work of the organisation. Indeed, the current system at Booxe has arguably become too informal, possibly as a result of neither side of the process taking it seriously. In order to make the process relevant, appraisal is seen as a means of control of staff and linking their activities to the overall organisational goals such as driving down costs. It will lead to improved development of appropriate skills and greater motivation on the part of the staff, especially if linked to a suitable reward system.

The balance between control and development within the appraisal process will link to the culture within the business. At Booxe, there is a culture of craft appreciation which implies the importance of development of skills and thus it may be that there has been a loss of the sense of control and this has led to the increased costs which the CEO is trying to drive down.

3 (a) Turing

Risk appetite

The risk appetite of Turing will be dominated by the VCs who own 90% of the company. They are risk-seeking as they hold a portfolio of high-risk investments where they accept the failure of some investments provided others generate high returns. The other key stakeholders mentioned are management who has been given an equity stake in the business and so is likely to be comfortable with this high-risk approach.

Method of decision-making

Overall, therefore, Turing is likely to be risk-seeking and so a maximax approach to decision-making under uncertainty will be appropriate. In the maximax approach, the design selected will be the one which maximises (over the three designs) the highest profit for each design among the three demand scenarios.

Riemann

Risk appetite

The risk appetite of Riemann will be dominated by the financial investors, both the shareholders and any debt providers, as they have recently had to provide new funds to keep Riemann afloat. These investors will be concerned about the immediate survival of the business as will the management who could lose their jobs. The need for short-term cash flow gains from TandR emphasises this point.

Method of decision-making

Overall, therefore, Riemann is likely to be risk averse, focusing on the survival of the business and so a maximin approach to decision-making under uncertainty will be appropriate. In the maximin approach, the design selected will be the one which maximises (over the three designs) the lowest profit for each design among the three demand scenarios.

[**Tutor note:** *Some credit will be given for a minimax regret solution as it is risk averse, although it is not as clearly focused on obtaining a minimum level of return needed to aid the survival of the business.*]

Other comments

The management at Turing will also be motivated to choose projects with an innovative edge such as the 8 MW unit proposed. The high fixed costs of the 8 MW unit are unlikely to deter Turing's management as they represent a large investment in their education in potentially world-leading technology.

The wide range of demand forecasts (1,000 units to 2,000) will make Riemann nervous. The likely long timescale for development of the 8 MW unit, where $7·5bn will be invested, may not be attractive in meeting their short-term cash needs.

(b)

Type	Variable cost per unit	Fixed costs	Price per unit		
	$m	$m	$m		
8 MW	10·4	7,500·0	20·8		
3 MW	4·8	820·0	9·6		
1 MW	1·15	360·0	4·6		
Demand	1,000	1,500	2,000		
Variable cost					
8 MW	10,400	15,600	20,800		
3 MW	4,800	7,200	9,600		
1 MW	1,150	1,725	2,300		
Total cost					
8 MW	17,900	23,100	28,300		
3 MW	5,620	8,020	10,420		
1 MW	1,510	2,085	2,660		
Revenue					
8 MW	20,800	31,200	41,600		
3 MW	9,600	14,400	19,200		
1 MW	4,600	6,900	9,200		
Profit				**Max payoff**	**Min payoff**
8 MW	2,900	8,100	13,300	13,300	2,900
3 MW	3,980	6,380	8,780	8,780	3,980
1 MW	3,090	4,815	6,540	6,540	3,090
Maximum of the maximums		8 MW	13,300		
Maximum of the minimums		3 MW	3,980		

Therefore, the risk-seeking decision makers at Turing will select the 8 MW design with the possibility of earning $13·3bn from the project. The risk-averse decision makers at Riemann will select the 3 MW design with the likelihood of earning at least $3·98bn from the project.

(c) Considering first the problem of measuring performance in joint ventures, the primary difficulty is establishing the objectives of the joint venture (JV). The different JV partners may have different goals; in this case, Riemann wants fairly immediate cash flows while Turing wants the possibility of large returns (possibly over a longer time-frame). Performance metrics are likely to include a variety of financial indicators, such as profit, growth and cash flows. However, there may be different emphasis put on these metrics by each JV partner and there will be difficulties in attributing accountability for these different elements of performance where each partner in the JV is bringing different skills and knowledge to the venture. The different timescales which Riemann (short term) and Turing (longer term) will emphasise will also lead to conflict in the choice of metrics: quarterly cash flows for Riemann to report to its shareholders and discounted cash flows over the project life for Turing.

At TandR, the different risk appetites of the key stakeholders will lead to conflict in the choice of key performance measures and these problems will be difficult to resolve as the ownership is split 50:50 between Turing and Riemann. The possibility of deadlock can only be avoided by having clearly laid out a path for resolution at the outset of the JV (possibly in the JV legal agreement).

This high level conflict can also appear in day-to-day co-ordinating and controlling the JV. The management of the JV must be given clear direction at the outset, otherwise this deadlock problem will appear whenever there is a disagreement between the managers selected by the JV partners. Therefore, the compatibility of the management styles and cultures of the JV partners will have an important impact on success.

Another potential issue in joint ventures and specifically at TandR is that, as well as sharing offices, assets and staff, the partners must also share information and intellectual property. It appears that Turing are bringing significant advantage for the JV with their blade design skill. However, it is often difficult to measure the contribution of such intangible assets to the performance of the JV and a suitable method of extracting these assets at the end of the life of the JV will need to be agreed at its outset.

It is likely that the venture partners will be reluctant to share too much information about their own businesses with their JV partner. It will be important for the success of the JV that a climate of trust exists which will again depend on issues such as management style and culture.

4 **(a)** Planning variances are those which arise due to inaccurate forecasts or standards in the original budget setting. Operational variances are then the remainder due to the decisions of operational managers. A planning variance is the difference between the original standard and a revised one set with the benefit of hindsight. An operational variance is the difference between this revised standard and actual performance.

The total variable cost variance considers all costs together and so it is unlikely that gains or problems can be attributed to one individual. It is of limited value and should be used to point to more detailed analysis to identify the specific source of the variance. Currently, at Godel, the standard costs have been set too high and it appears that the bulk of the cost improvements can be attributed to this. The operational managers have had limited impact in driving down costs overall in May 2014.

The sales price variance indicates how far sales prices were misestimated in the budget (planning) and how well the sales managers have done in negotiating high prices with customers (operational). It appears that the budget was overoptimistic in setting too high an initial price but the sales managers have done well in negotiations with customers. The best individual sales managers could be identified and their techniques communicated to the rest of the sales team. The initial price setting process should be examined as it may have been due to faulty market intelligence about the price setting of competitors or the commercial situation of the customers (supermarkets).

(b) Purpose and benefits of budgeting

Budgeting is a key control tool for management and of particular importance in controlling costs in businesses such as Godel which is seeking to be a cost leader. At Godel, it is succeeding in this as total costs show a favourable variance. Budgets help to communicate and coordinate all the management activities within the company towards a single plan. The budget helps to attribute responsibility for performance, for example, the favourable material usage variance indicates that fewer raw materials are required than was planned and this reflects the work of the production manager in cutting waste and, possibly, the purchasing manager in buying good quality raw materials. The participatory nature of the budget process will help to motivate managers to achieve budget figures which they themselves have helped to set. It is important for this purpose that the budget is achievable or else it is demotivating. Budgets assist the evaluation of performance by identifying variances and then point to areas for corrective action or future learning. At Godel, sales are clearly under-performing the plan both in terms of the quantity and price achieved. On the positive side, the managers in charge of labour and the workforce are working efficiently and cheaply.

There are several problems with budgeting at Godel:

1. The time-consuming nature of the process which is unusual as the business is mature and stable and so budget-setting should not be a complex process. The exasperation of the managers probably results from the fact that they see little benefit coming from work involved in forecasting. The operating variances given are relatively small.
2. The planning variances explain the bulk of the variances at Godel and so the operational managers have good reason to be concerned as their performance affects the operational variances only.
3. The operational and planning variance analysis is limited in scope. Performing more detailed operating and planning variance could also assist in addressing the complaint that operational managers are being asked to explain variances which are not their fault, for example, by doing this analysis for all the different cost headings in the operating statement and not just the total cost variance.
4. The use of standard costs in budgeting could discourage a system of continuous improvements which would help a cost leader in making efficiency gains. However, Godel's senior management may view that it is unlikely that there will be a need to make such changes on a regular basis and that a review of the costs once a year is sufficient.

[**Tutor note:** *Solutions based on the PRIME acronym for the benefits of budgeting are suitable for this part.*]

(c) Going beyond budgeting involves replacing the annual system of a centrally created budget with a more flexible system of targets. Performance measurement changes from monitoring variances from the budget towards measuring achievement of strategic goals, adding value and performance against suitable benchmarks.

The system will use forecasts produced and revised more regularly than the annual budget by the line managers; it will devolve decision-making. The forecasts produced are often more important for cash flow monitoring rather than cost control. The targets are intended to guide rather than constrain the line managers, thus improving their motivation. The approach of going beyond budgeting is considered appropriate in industries where there are rapid changes in the business environment and where intangibles such as know-how are key to competitive advantage.

This approach at Godel would appear to be inappropriate for a number of reasons:

1. There does not appear to be the need to more regularly revise the budgets. Indeed, the work generated in going beyond budgeting may increase the complaints about time-consuming exercises from the operational managers.
2. The lower level managers would now need to prepare their own forecasts and would require training in this. They do not appear to have the appetite for such development.
3. There is no indication that there are rapid changes in Godel's business and so the beyond budgeting approach would not appear to yield many benefits.
4. There does not appear to be a need for great creativity at Godel; instead the focus is on cost control and so traditional budgeting will suit this well.

5. The management style of an organisation which should go beyond budgeting is to allow power to be devolved to lower levels of management and this will not fit the culture of Godel.

Overall, then, there are insufficient benefits and many barriers to going beyond budgeting at Godel and it is not recommended.

1 **(i)** 1 mark per point – must be based on the scenario information

For example:
- Assessment of whether report meets mission
- Appropriateness of the level of detail for the three boards
- Use of budgets
- Use of industry averages

Maximum 15 marks

(ii) 1 mark per point

Maximum 6 marks

(iii) EVA

Calculation:	
Marketing	1
Tax	2
Capital employed – marketing	1
WACC	1
EVA result	1
Comments:	
Result	1
Assumptions	up to 3

Maximum 9 marks

(iv) VBM
General description of VBM up to 2 marks
Description and impact of implementation of VBM up to 10 marks

Maximum 10 marks

(v) Calculations – up to 3 marks

1 mark per point on areas such as
- difficulty of measuring
- pay rates
- staff turnover

Maximum 6 marks

Professional marks
1 for introduction and report headings
1 for use of suitable subheadings in report
2 for clarity and language use
1 for conclusion (not required here but given if reasonably attempted)
Maximum 4 marks

Total 50 marks

2 **(a)** Calculations

Costs:	Depreciation	1
	Total	1
Savings:	Warehousing	1
	Purchasing	1
Net benefit		1

Comments: 1 mark for suitable comment on the calculations

Maximum 6 marks

(b) Definition of BPR
1 mark per point up to 2
Culture
1 mark per point up to 5
Impact on accounting systems
1 mark per point up to 5

Maximum 11 marks

(c) Definition of process
1 mark per point up to 2
Purpose
1 mark per point up to 4
Balance of control and development
1 mark per point up to 3

Maximum 8 marks

Total 25 marks

3 **(a)** 1 mark per point up to the following maxima:

Turing:

Risk appetite	3
Method of decision-making	2
1 for properly selected method	
1 for description of method	

Riemann:

Risk appetite	3
Method of decision-making	2
1 for properly selected method	
1 for description of method	

Maximum 9 marks

(b) Calculations:

Variable costs	2
Total costs	1
Revenue	2
Profit	1
Maximax result	1
Maximin result	1
Conclusion	1

Maximum 8 marks

(c) 1 per point made up to 8 marks

Points such as:
Different goals and performance metrics at JV partners
Handling different risk appetites
Deadlock in decision-making
Handling different time horizons for results
Different management styles and cultural differences
Information sharing
Intellectual property
– extra credit is available for relating point to TandR specifically.

Maximum 8 marks

Total 25 marks

4 **(a)** Definitions – up to 1 mark
Total variable cost variance – up to 3 marks
Sales price variance – up to 3 marks

Maximum 6 marks

(b) Benefits of budgeting for Godel including:
- Planning and coordination – meeting overall strategy
- Responsibility
- Integration
- Motivation
- Evaluation

1 per point made up to 6 marks

Problems with budgeting at Godel including:
- Time-consuming and unnecessary
- Lack of recognition of planning failures
- Insufficient planning and operational analysis
- Impedes continuous improvement

1 per point made up to 6 marks

Maximum 11 marks

(c) Description – up to 3 marks
Appropriateness at Godel – up to 5 marks
Recommendation – 1 mark

Maximum 8 marks

Total 25 marks