Answers

1 To: CEO of Thyme
From: A Accountant
Date: September 2016
Subject: Reporting performance and quality issues at Thyme Engine Products

This report analyses the positive features of the award winning dashboard identifying some areas which specifically apply to Thyme. The role of the management accountant in providing information for integrated reporting is explained. Then, the target cost gap for the new engine is calculated and an evaluation is provided of the use of this target cost within the TQM approach. Finally, issues associated with the costs of quality at Thyme are addressed.

(i) Positive features of the award winning dashboard

The following are features of the dashboard which will have weighed in the assessors' minds when making the award. They are placed in a priority order of most important first and then there are a few specific comments about the possible use of such a template at Thyme.

Achievement of the objectives and strategies of the business

The critical measure of whether the dashboard is fit for its purpose is whether it answers the question: has the business achieved its key objectives?

The dashboard measures all of the key objectives of the business growth of the firm:

1. shareholder wealth and returns through EVA™ and TSR; and
2. growth through revenue and market share growth.

It also measures the strategies used to achieve these results:

1. world-class engineering to design engines through the class leading design specifications;
2. high quality production through fault rates in manufacturing and delivery; and
3. customer service through those same fault rates and market share (an indirect indicator).

Balanced view

The report presents a balanced view of the business's performance. It deals with various perspectives (shareholders (TSR), customers (market share), internal business (fault rates) and innovation (design position)) which are used in the balanced scorecard approach. This is also achieved using both internal and external data (fault rates and average sector growth). It presents both the results and the determinants of those results by giving financial and non-financial indicators. For example, revenue growth will be driven by the customers' view of product and service, so design and manufacturing quality measures are important. Short and longer term measures are given such as profit margin and economic value added.

Planning and control

The dashboard should allow the board to perform both its vital functions in planning and controlling the business. The forecasts for next year (budgets) are given and also, as noted above, there are non-financial determinants of performance such as design and customer service which will drive the future short-term competitive position of the business.

The control activities of the board are served by providing historic trends and also current budget variances. The major headings are provided for under the financial headings with activity measured by revenue, profit by the margin and shareholder wealth by economic value added.

Presentation

The dashboard is kept brief as the board will have an opportunity prior to the board meeting to use it to identify issues requiring further analysis at the meeting. There is a short narrative commentary which deals with the major commercial points arising from the dashboard and also, gives further external market data as context for the figures (e.g. average sector growth). It is also worth noting that the narrative picks up on strategic issues of risk and opportunity which can more difficult to capture in numerical form. Hence, the commentary appears appropriate to assist in an annual review of the business.

Specific issues at Thyme

There are certain issues particular to Thyme which may be added to the example dashboard, though if these are deemed short term, then they may not necessarily appear on this main dashboard view. The example dashboard does not show measures of cash flow performance (such as free cash flow generated) nor gearing ratio, both of which would be important for future fund raising. There are no measures associated with governance and ethics which in the light of the bribery scandal may have a higher priority at Thyme. Ethical training costs may give a measure of this area.

(ii) Integrated reporting

There is no standard format for integrated reporting. However, there are changes in focus of the company's reporting which will require the input of the management accountants of that business. Integrated reporting has a focus on opportunities and risk, how resources are allocated and performance both recent historic and expected in the future. There are six capitals involved in value creation including traditional tangible and financial assets but also including human, intellectual, environmental and social assets.

For the management accountant, these newer forms of capital will require information systems capable of capturing and processing such non-financial measures. The forward-looking nature of such reporting will require more information of a forecast nature (with the accompanying requirement to understand their estimating assumptions). The more strategic view which integrated reporting intends to give also requires reporting on factors which drive long-term performance. A key part of the integrated report is linking performance to strategic goals and the ability to create value. This will require a less structured and more contingent approach to reporting. In other words, proforma reporting must be better tailored to the specific business's situation. However, it is considered a key requirement of such reporting that it is concise and so the management accountant must help to ensure that only the key information is reported. It can be seen that the dashboard discussed in the above section of this report achieves many of these requirements.

(iii) New jet engine: target costing and TQM

Workings:

	$'000	
Target cost	2,125	
Production costs	1,825	
Design and development	100	
Sales and marketing	500	
Current cost	2,425	
Target cost gap	300	(12% of current cost)

The target cost for the new engine is $2·125m and the current estimated cost is $2·425m. Therefore, there is a need to cut costs by 12% to achieve the target profit margin. It is common for the initial costs to be higher than the target cost and for cost savings to be achieved as the product reaches maturity in its lifecycle. It should be noted that even at this higher initial cost, the engine will be making a small $0·075m profit per unit (a 3% margin).

Target costing involves setting a selling price based on what will be competitive in the market then deducting a target profit margin to obtain the target cost. An estimate is made of the cost of the engine based on the current design specification. The gap between this cost and the target cost is the target cost gap and opportunities to bridge this gap are sought by amending the product design or cutting costs in production.

Total quality management (TQM) is a management approach which seeks to have no defects in resource or relationship management. It aims to have a culture of continuous improvement in the organisation.

In this new engine project, the TQM philosophy will fit well with the need to cut a relatively small amount of costs in order to meet the target. By small but frequent improvements as the production team climb the learning curve associated with such a new product, it would be expected that such cost savings would be made.

Given the size of the cost gap, it does not seem that a major redesign of the engine is required.

(iv) Quality costs

There are four categories of quality costs:

- Prevention costs are costs to prevent the production of engines which fail to meet specifications;
- Appraisal costs are costs incurred in inspecting products to ensure that they meet specifications;
- Cost of internal failure are costs associated with making good products which are identified as sub-standard before delivery to the customer; and
- Cost of external failure are costs associated with making good products which are identified as sub-standard after delivery to the customer.

Working:

	$m	
Prevention	139	(= 11 + 92 + 36)
Appraisal	138	(= 110 + 28)
Costs of internal failure	95	
Costs of external failure	279	(= 223 + 56)
Total	651	

Comments on results

The total quality costs are 5·7% of revenue which seems surprisingly low for an organisation which recognises this as a key competitive advantage; notable is the large size of the external failure costs of 2·4%.

Possible other relevant costs

Overall, there are likely to be administrative costs associated with many of these categories and some attribution of overhead should be undertaken beyond the customer complaint handling mentioned.

Appraisal costs include performance testing of final assembly and performance testing of subcomponents from suppliers. There may also be costs associated with inspection of raw materials inward since these make a difference to quality (shown by the higher purchase costs).

Internal failure costs include costs of re-inspection after repairs after final assembly testing. There must also be costs associated with repairing faulty goods identified at final testing and possibly also scrapping failed products. It is possible that there is idle time costs due to work held up by internal identification of faulty products.

External failure costs include customer complaint handling and replacements under warranties. There is also the cost of damage done to Thyme's brand by such problems although many customers will accept that these are inevitable and provided they are infrequent and covered by warranty, they need not be important.

New products such as the new jet engine will likely generate additional failure costs while production methods are optimised.

Relative importance of categories

Given the high cost of external failure and the importance of reputation for Thyme, the most important category is prevention. It would be appropriate for Thyme with a TQM approach to be spending heavily in this area. This will still need to be combined with warranty spending in order to protect the reputation of Thyme when problems do occur. As prevention succeeds, so the importance of the other categories will decline. It is worrying that external failure costs are more than twice internal failure costs, which suggests that final testing is not identifying a significant number of the faults in production.

2 (a) (i) ROCE

As can be seen in working 1, Chicory's ROCE is 13·6% and Fennel's ROCE is 14·9%. Fennel has apparently performed better than Chicory. One benefit of using ROCE as a performance measure in this benchmarking exercise is that it gives a percentage figure and can compare businesses of different sizes. ROCE does not, however, give the absolute level of return. In this case, Fennel has both a higher capital employed and a higher percentage return.

ROCE is easy to calculate and will be familiar to Chicory's management as it is currently one of Chicory's main financial performance indicators. The figures required to calculate ROCE are readily available from published data, which makes this a good financial performance measure for benchmarking.

ROCE shows a weak correlation with Chicory's objective to maximise shareholder wealth, which may limit ROCE's usefulness as a performance measure in this benchmarking exercise. ROCE may be distorted by accounting policies or where different businesses have different levels of intangible assets. This may lead to drawing incorrect conclusions from the exercise. A big disadvantage of using ROCE in this benchmarking exercise is that it may encourage managers not to invest in new non-current assets, which contradicts Chicory's strategy of investing in charging points.

Working 1

Chicory:

Opening capital employed (Total assets – Current liabilities)	$78·0m	(138·0 – 60·0)
Closing capital employed	$59·0m	(140·0 – 81·0)
Average capital employed	$68·5m	((78·0 + 59·0)/2)
ROCE (Operating profit/average capital employed)	13·6%	(9·3/68·5)

Fennel:

Average capital employed (170 x 0·25) + (176 x 0·75)	$174·5m	
ROCE	14·9%	(26·0/174·5)

(ii) EBITDA

Using Chicory's main financial performance indicators of ROCE, Fennel has performed better than Chicory. When depreciation of non-current assets and the write-off of goodwill in Chicory are added back to operating profit to calculate EBITDA, Chicory's performance, with an EBITDA of $52·0m, is slightly better than that of Fennel, which has an EBITDA of $51·0m.

EBITDA as a proxy for cash flow

EBITDA is easy to calculate from published data, and easy to understand. It is a measure of underlying performance, as it is a proxy for cash flow generated from operating profit. As Chicory is having cash flow difficulties following the unsuccessful acquisition, EBITDA would be a relevant measure for this benchmarking exercise. EBITDA does not, however, take into account the cash flow effect of working capital changes, for example, by Chicory negotiating longer payment terms with its suppliers.

Excludes items which are not relevant to underlying performance of the business

Tax and interest are distributions from profits, unrelated to the underlying performance of the business. Excluding them from measures of performance, therefore, gives a better understanding of the underlying performance of Chicory and Fennel. This is important for the benchmarking exercise since Fennel appears to suffer much lower rates of tax, probably due to the tax incentives given by the Veeland government. Loans underwritten by the Veeland government may be at artificially reduced rates of interest and should also be excluded when measuring performance.

Similarly, depreciation, amortisation and write-offs such as goodwill are not relevant to the current year's underlying performance and may relate to previous years. For example, adding back the write-off of goodwill in Chicory means the two businesses have identical EBITDAs, albeit that Fennel has much greater capital employed.

EBITDA affects comparability of the benchmarking data

Using EBITDA as a performance measure in the benchmarking exercise makes the data for the two businesses more comparable and removes one element of subjectivity, such as in determining useful economic lives of non-current assets. EBITDA does, however, ignore the replacement costs of these assets. This might limit the usefulness of comparisons between Chicory and Fennel if one were to lease non-current assets and the other to purchase them. The introduction of a new accounting standard on the treatment of leases may, however, remove this limitation.

Unlike Chicory's existing measure of ROCE, which is a percentage measure, EBITDA is an absolute measure and so makes it difficult to compare businesses of different sizes. As a profit based measure, its usefulness is also limited by subjective assumptions made in the calculation of profit, or by inconsistent accounting policies. Development costs may be capitalised in Veeland, but not in Deeland, which may make a comparison against the benchmark difficult.

Working 2

EBITDA $m	Chicory	Fennel
Operating profit	9·3	26·0
Add back:		
Depreciation on non-current assets	18·0	25·0
Write off of goodwill	24·7	–
EBITDA	52·0	51·0

(b) Benchmarking the performance of Chicory against a similar business implies that there is a best way to operate. Though Fennel may be similar to Chicory, there is no indication that it is best in class and benchmarking against it may be inappropriate.

For example, Fennel has taken advantages of tax incentives and loan guarantees to finance new investments. These do not exist in Deeland, so Chicory may be unable to fund investment in this way. It may have to consider leasing assets instead, or accept a slower rate of growth if it wishes to set up charging points in Deeland.

Benchmarking is a catching up exercise. The financial data for Fennel is 18 months older than that for Chicory and may already be out of date. In 2015, Fennel improved operational performance by investment in IT. The effect of this is not reflected in the financial data given. Benchmarking performance against historical data may not be relevant for current or future performance. The electric car market in Veeland has grown rapidly in the last two years. This growth is not reflected in the financial performance data given for Fennel, nor is the falling price of components for the charging points.

Though Fennel has agreed to share data, this data may be inaccurate or misleading. Though initially the benchmarking exercise is only against Fennel, it may be difficult to find other comparable businesses to benchmark against in the future. The data required for calculation of the three financial performance indicators used in the benchmarking exercise is likely to be readily available and audited, however, which means it is reliable.

A large part of Fennel's business relates to providing charging points for charging electric cars. Though this is a business model Chicory intends to follow in the future, it is very different to its existing business, and so benchmarking against Fennel may be misleading unless more detailed data relating to the two activities can be obtained.

Similarly, Fennel operates in a different country, where the economy is much stronger. Performance targets set following the benchmarking exercise may be unachievable for Chicory. Fennel's financial data has been converted into $ from its home currency. Movements in exchange rates may make the benchmarking data less comparable, especially if the economies in Deeland and Veeland are growing at different rates.

3 (a) Lack of profit-making objective

Not-for-profit organisations do not, by definition, have profit as an overriding motive. Patients are not charged for receiving treatment, so TRH does not have a revenue stream. It may also be difficult to define a cost unit as this could be cost per patient arriving at hospital or cost per patient successfully treated.

Not-for-profit public sector organisations, such as TRH, have strict constraints on the amount of funding they receive, such as a fixed amount of funding received entirely from the government. They cannot obtain funding from elsewhere, so financial measures cannot be ignored completely. TRH must exist within its financial means, and the use of budgets to control costs is critical.

TRH provides an essential public service. Political, legal and social influences would prevent it from closing down a service just because it became more expensive or uneconomic to provide it. For all of these reasons, financial objectives are less relevant than for most commercial organisations, and its objectives are mainly non-financial in nature.

Not-for-profit organisations also undergo more public scrutiny and have multiple stakeholders, so non-financial indicators will be necessary to manage expectations. For example, patients are stakeholders who will have relatively little interest in how TRH exists within its financial constraints. They will have much more interest in non-financial performance, such as how quickly and successfully they are treated.

Multiple objectives

Not-for-profit organisations have multiple objectives, and it may be unclear which are the most important. Except for some aspects of giving value for money to the taxpayer, TRH's objectives are all non-financial.

The outputs or benefits of the services provided are non-financial in nature, for example, giving prompt and high-quality treatment to patients. Therefore NFPIs are required to measure performance.

(b) Value for money in public sector organisations can be measured using the 'three Es': economy, efficiency and effectiveness.

Economy

Economy means obtaining resources at the lowest cost. Doctors' salaries will be a significant expense for TRH, and salary per doctor is a suitable measure of economy. Doctors at TRH have an average salary of $150,000 ($3·75m/25), compared to the national average of $175,000 ($4·20m/24).

The relatively lower salaries of doctors may be due to differences in levels of experience or that they work unpaid overtime. It may also be one of the reasons why the staff satisfaction is so much lower at 9% compared to the national level of 89%.

Efficiency

Efficiency relates to obtaining the greatest possible outputs from the resources available. Treating patients is a key objective of TRH, and the number of doctors is an important resource. The number of patients treated per year by each doctor is a good measure of efficiency. In TRH, each doctor treats an average of 975 (24,375/25) patients per year, 17% more (975 v 833) than the national average 833 (20,000/24). This may be because they work longer hours than their colleagues in other hospitals.

Effectiveness

Effectiveness means how well TRH achieves its objectives. TRH has multiple objectives, one of which is to provide high quality medical treatment for patients. Where patients are re-admitted to TRH because their treatment had failed, this represents a failure to provide high-quality medical care, so the rate of re-admission of patients is a measure of effectiveness. The rate of re-admission at TRH is 7·5% (1,830/24,375), much higher than the national average of 1·5% (300/20,000). TRH seems to have performed relatively very poorly in this respect.

Summary

Overall, the results from the measurement of the 3Es are consistent with the doctor's comments that they are working without being paid overtime and treating more patients than their colleagues in other hospitals. TRH appears to deliver better economy and efficiency than the national average. This seems to be reducing performance, however, in respect of providing high-quality medical treatment for patients, where TRH is less effective than the national average.

(c) Extent to which the management style is budget constrained

A budget-constrained management style emphasises the need to achieve short-term performance measures, for example, the annual financial budgets.

The doctor said that TRH has always achieved its total financial budgets, and this is supported by the fact that the doctors' salaries for the year to 31 August 2017 equalled the budget set for the period. Though it is unclear what NFPIs are measured at TRH as a whole, doctors receive only a limited set of financial and non-financial performance data. The discussion about this data, however, is mainly related to financial targets. This implies greater emphasis is given to performance against financial targets, rather than non-financial ones.

All of this suggests that TRH has a budget-constrained management style. An advantage of this is that it ensures TRH operates with the financial constraints of the fixed amount of funding received from the government.

Implications of a budget-constrained approach at TRH

This management style encourages short-termism, by encouraging doctors to work long hours without being paid overtime, or not making funding available to recruit new doctors to alleviate the situation. An implication of this is that TRH may reduce its performance against its objectives, and this is already seen by the relatively high rates of re-admission as an indicator of a reduced quality of medical treatment. Job-related tension is a consequence of a budget-constrained management style, and the low staff satisfaction score could have resulted from this.

This management style encourages manipulation of results, or the way they are measured, to show better performance. At busy times, more patients are referred to the nearby larger hospital. There is apparently no medical need for this, which is inconsistent with the objective to deliver high-quality treatment. It appears to be a way to distort waiting times to demonstrate improved performance in treating patients promptly. From patients' perspective, though, this will mean they are treated less promptly than if treated at TRH.

Being unable to recruit new doctors reduces TRH's flexibility in reducing waiting times at busy periods, as the steps already taken seem to have had minimal effect. This management style does not encourage innovation, probably because doctors have insufficient time for this. Though this may have long-term benefits, it seems to be taken as less important than the other key objectives, to provide prompt, high-quality treatment.

4 (a) Importance of incorporating risk and uncertainty in making long-term decisions

Risk relates to the variability of outcomes, the probabilities of which are known, or can be estimated. Uncertainty occurs where the outcomes and their probabilities are unknown. The variability of demand for SC's chocolate bars is a risk, and the probabilities of different levels of demand can be estimated. The outbreak of conflict in a cocoa growing region affecting cocoa prices cannot be assigned a probability, and so is an uncertainty.

The market price of cocoa and the demand for chocolate bars are examples of exogenous variables which significantly affect the performance of SC. Exogenous variables arise from outside the business, but over which the business has no control. Climatic conditions, soil erosion, for example, all affect the price of cocoa, and therefore the performance of SC.

When investors evaluate businesses, they take into account prospective returns and the level of risk involved. Therefore, managers should consider risk and return when evaluating projects on their behalf. Long-term strategic planning requires forecasts to made about future events, such as the price of cocoa. These future events are by definition unknown, and subject to risk and uncertainty. Risk and uncertainty must, therefore, be considered when making long-term plans, such as opening the new factory. The further into the future the plans project, the riskier, and more uncertain, events are likely to be, as it is harder to predict what conditions will be. This mean consideration of risk and uncertainty is even more important when making long-term decisions than for short-term decisions.

Use of PEST analysis

To incorporate risk and uncertainty into long-term strategic planning, SC must identify and monitor the most important exogenous variables, taking action to manage the risks they present. As a traded commodity, the risks of rising cocoa prices could be managed (hedged), for example, by using cocoa futures. The board member's comments suggest planning for the cake business was poor, and did not adequately consider the importance of exogenous variables. Risks in the macro environment could be identified using a PEST analysis.

Political factors

The market price of cocoa is affected by conflicts and political uncertainty, so consideration of these external factors is needed to incorporate risk and uncertainty into long-term planning. By identifying factors such as political instability or conflict, SC can improve its long-term performance by sourcing cocoa from more stable regions. The political situation in a region can change rapidly, which might make it difficult to incorporate these risks into long-term planning, as there is a high degree of uncertainty.

The introduction of increased taxes on products containing sugar is a political factor affecting the long-term demand for SC's products. Once introduced, this factor is likely to operate in the long term and be more predictable. Identifying this, SC could develop products containing less sugar and so reduce the amount of these additional taxes on its products.

Economic factors

Economic factors such as the variation in long-term interest rates can influence SC's performance by affecting exchange rates or overall consumer demand. By identifying these factors, SC could hedge against currency exchange rates. In the longer term, SC could locate its operations in a country where the risks from exchange rate fluctuations are lower, or diversify geographically to spread the risk.

Social factors

Overall demand for chocolate products will be influenced by social factors such as consumer tastes or increased awareness of healthy eating. SC can improve its long-term performance by not investing in a chocolate factory at all, if it believes demand for its products will fall sufficiently to make the venture unprofitable.

Technological factors

The increased cocoa yields from genetically modified crops may reduce long-term cocoa prices and SC could incorporate this into the net present value calculations for the factory. There may be unpredictable consequences which are harder to plan for, such as the acceptance by consumers of genetically modified foods.

(b) Board

The board wants to minimise the opportunity cost of making the wrong decision about the size of the new chocolate factory, which means to minimise the regret of making the wrong decision. The minimax regret rule would be the appropriate method to use so they would choose the project with the lowest maximum regret.

The regret table is as follows:

	Option 1	Option 2	Option 3
Annual demand			
50 million	0	(12·0)	(36·0)
60 million	(10·0)	0	(40·0)
70 million	(11·0)	(1·0)	0·0
Maximum regret	(11·0)	(12·0)	(40·0)

Option 1 is the option with the lowest maximum regret ($11m), and that would be the option preferred by the board according to their risk appetite. A drawback of using the minimax regret rule is that the probabilities of the outcomes are not considered.

New shareholders

The new shareholders are keen to increase the long-term performance of the business and are prepared to accept a high level of risk to achieve this. They will choose the option with the maximum possible outcome, which is option 3, with a maximum possible net present value of $17m. This is known as the maximax rule. This also takes no account of the probabilities of the outcomes, and also tends to be over-optimistic. It also ignores the fact that even risk seekers have a risk–return trade off.

(c) Expected value of each option

Option 1 – (0·3 x 3·0) + (0·4 x 0·5) + (0·3 x –2·0) = $0·5m

Option 2 – (0·3 x 5·0) + (0·4 x 2·0) + (0·3 x –1·0) = $2·0m

Option 3 – (0·3 x ·7·0) + (0·4 x 1·5) + (0·5 x –2·0) = $2·1m

The risk neutral investor's choice, for year 1 only, would be option 3, with an expected value of $2·1m.

Problems of using an expected value approach

A risk neutral investor would use the expected value approach to choose between the three options. The expected value is a long run average, and is only appropriate where a decision is repeated many times. This does not appear to be the case at SC which has made only one attempt at strategic expansion in the last several years. For the same reason, the expected value will not equal the actual outcome.

Determining the probabilities, of the market price of cocoa for example, is subjective. Even analysis of historical market prices is not necessarily a guide to what will happen in the future. The expected value approach is suitable for a risk neutral investor. This does not apply to the key stakeholders at SC, and hence this approach is inappropriate for use in the decision on the three options. Determining the payoffs is also difficult when demand is subject to uncertainty. SC should not make a decision on the factory based only on the first year's operating profits, and should take a longer term view, for example, based on discounted cash flows.

1 (i) Positive features of the award winning dashboard

1 mark per point with additional marks for development of these issues

Examples:
Achievement of the strategies of the business
Breaking down the strategy linking to measures in the dashboard
Balanced view
Financial and non-financial; different perspectives; results and determinants; internal and external views
Planning and control
Short and long-term views; forward focus for planning; trends/budgets for control
Presentation
Brevity; narrative points; link to other strategic issues, e.g. risks

Specific issues at Thyme not measured – up to 3 marks

Maximum 15 marks

(ii) Integrated reporting

Description of IR – up to 3 marks
Impact on management accountant – up to 6 marks

Maximum 6 marks

(iii) New jet engine: target costing and TQM

Calculations: 1 mark for each of the following:

Target cost	2,125
Production costs	1,825
Design and development	100
Sales and marketing	500
Target cost gap	300
	(12% of current cost)

Current profit margin $0·075m or 3%.

Discussion of cost savings – 1 mark
Definition of target costing – 1 mark
Definition of TQM – up to 2 marks
Fit of TQM with target costing approach – up to 6 marks

Maximum 12 marks

(iv) Quality costs

Definition of quality costs – up to 2 marks
Calculations: 1 mark each for absolute or as percentage of revenue

	$m	
Prevention	139	1·21%
Appraisal	138	1·20%
Costs of internal failure	95	0·83%
Costs of external failure	279	2·43%
Total		5·66%

Discussion of results – up to 2 marks
Identification of other quality costs omitted which are appropriate for Thyme – up to 6 marks
Relative importance of the categories – up to 4 marks

Maximum 13 marks

Professional 4 marks

Total 50 marks

2 **(a)** **(i)**

Calculation of Chicory's and Fennel's average capital employed	2 marks
Calculation of both companies' ROCE	1 mark
Comment on the results of the ROCE calculation	1 mark
Evaluation of ROCE as a performance measure	3 marks

Maximum 6 marks

(ii)

Adjustments to operating profit	2 marks
Calculation of both companies' EBITDA	1 mark
Comment on the results of the EBITDA calculation	1 mark
Evaluating use of EBITDA as a performance measure	6 marks

Maximum 10 marks

(b) Problems of benchmarking exercise – up to 2 marks per point

Maximum 9 marks

Total 25 marks

3 **(a)** Importance of NFPIs – 1 mark per point

Maximum 5 marks

(b) Definition of 3 Es - 1 mark
Each E – Up to 4 marks (1 mark for justification of a measure, 1 mark for the calculation of the measure and 2 marks for discussion of the result)

Maximum 10 marks

(c) Discussion of budget constrained style – 1 mark per point

Maximum 10 marks

Total 25 marks

4 **(a)** Consideration of risk and uncertainty – 1 mark per point, up to 8 marks
Definition of PEST analysis – 1 mark
Linking PEST to risk factors – up to 2 marks per heading

Maximum 14 marks

(b) Calculations and comments on the board's preference – 4 marks
Comments on new shareholders' preference – 2 marks

Maximum 6 marks

(c) Calculation of expected value – 1 mark
Conclusion and drawbacks of expected value approach – 1 mark per point

Maximum 5 marks

Total 25 marks