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# Answers

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- 1 To: The board of Fearties Security (Fearties)  
From: An Accountant  
Date: September 20X8  
Subject: Performance reporting and management issues**

This report evaluates the current choice of indicators within the financial perspective of the balanced scorecard and recommends new indicators to cover the additional perspectives of the scorecard. Additionally, the problems of measuring non-financial indicators are discussed. The current management style is evaluated and a new approach is recommended to match the strategy of the business. Finally, advice is given on the setting and use of targets in staff appraisals.

**(i) Key performance indicators**

The balanced scorecard has four perspectives: financial, customer, internal business process and innovation and growth. Indicators are needed for each perspective. The indicators suggested here are for the use of the board at a strategic level and not detailed operational management.

**Financial perspective**

The overall business objective is to grow profit without taking excessive risks. This is focused on the financial aspects of the business and so it is consistent that the current key performance indicators (KPIs) are all financial, being taken or calculated from the accounting information supplied with them. However, they are open to criticism.

The figures provided are the absolute values where it may be more useful to provide the year on year change in order to show growth.

	20X8	20X7	Growth
	\$m	\$m	
Revenue	686	659	4.1%
Operating profit	36	34	5.9%
Cash flow from operating activities	64	64	0.0%
Dividends paid	14	13	7.7%

The operating profit figure is less helpful for control purposes than the operating margin which allows for the effect of increased sales activity. The figures above show operating profit improving but, in fact, this just reflects the increased sales, as the operating margin is constant at 5.2%.

The ability to generate cash from operations is one which should indicate if the company is at risk of failure and so it is a valuable measure of risk to the owners.

The dividend growth figure is only for one year and, given the family's long-term involvement in the business, it might be more helpful to have a five-year average of growth, which can be calculated as 7.0%. This smooths out the fact that dividends are often only changed every few years once an increase appears sustainable.

The return on capital employed (ROCE) ratio is incorrectly calculated. The ratio calculated in the draft report is the return on equity (profit after tax/equity). This may be useful to a family owned business where share values are critical but it does not reflect the efficiency of the use of capital overall. The correct value is 31.3% (operating profit/average capital employed = 36/(21 + 94)). However, this ratio is not of much value to Fearties as it does not have a significant capital base. It requires relatively little capital investment as its activities are mainly about the hiring out of its employees' time.

The existing KPIs do not adequately reflect the new plan to grow more rapidly by developing new markets. Figures for revenue growth and operating margin should be broken down as they are unlikely to be similar in the different markets.

**Customer perspective**

The customer's views are important for growth and so the scores of a customer survey may be used to indicate their satisfaction. However, as discussed later, there are difficulties in measuring customer satisfaction and so customer retention (through percentage of revenue generated from existing customers) may be a better objective measure.

Reliability is listed as a key selling point and some investigation may be required to identify on what aspects of the service the customers are basing this view. Possible measures could be the percentage of times that a security team of adequate size and experience are sent to each job or number of times when police have to be called to the customer's location (indicating a problem which the Fearties' team could not handle).

**Internal business process**

The operating margin indicator suggested in the financial perspective will supply useful information about the overall efficiency of internal processes.

Based on the issues facing the company, KPIs for this perspective should reflect employee recruitment and retention, so the average number of unfilled vacancies at the company over the year would be a relevant measure.

The success of the company's training process could be measured by the number and average size of the legal claims against its staff.

## **Innovation and learning**

Training is a key issue for Fearties, so the percentage of staff who are qualified is an appropriate indicator. The time taken for this training and its costs may also be measures of the organisation's ability to learn and improve this process.

The operating margin changes over time which are generated in the new markets entered by Fearties would show the organisation's improvements in these new markets.

Obviously, revenue generated from new services offered would also measure innovation at Fearties. However, there appears to be little appetite for this at present as growth is to be driven from selling existing services in new markets.

**[Tutor note: There are many possible KPIs which can be suggested for this scenario and these would be given credit based on the justification offered.]**

### **(ii) Problems of non-financial performance indicators**

Problems of non-financial indicators can stem from the lack of familiarity of management with them. This is a particular problem for Fearties given its history of using financial indicators. Such non-financial indicators can have issues in the different areas of recording/processing and then interpreting the information.

Customer satisfaction is a good example of an indicator with such difficulties.

Customer satisfaction is often surveyed and the results are expressed in language. It can be difficult to tell if a complaint which describes service as 'poor' is more or less serious than one which describes service as 'unacceptable'.

The most common way to try to overcome this problem is to turn the data into quantitative data. For example, surveys often use scoring systems to capture data on service. A scoring system will often ask the customer to rank their satisfaction at the service provided on a scale of 1 to 5 with '1' representing 'completely satisfied' and '5' representing 'totally dissatisfied'.

However, the problem remains that such scoring systems are still subjective, and it has often been found that there is a tendency to score toward the middle as people tend to feel uncomfortable using the extreme scores of 5 or 1. However, Fearties may suffer from an over-reaction response as the events it deals with are dramatic. For example, if there was a burglary at a factory, then the loss is all blamed on Fearties' failure and a bad score given.

Also, there is the difficulty in interpreting qualitative data, such as customer satisfaction. It is essentially subjective since it is based on people's opinions. For example, in assessing quality of service, people have different expectations and priorities and so are unlikely to be consistent in their judgements. At Fearties, customer complaints will be driven by such opinions. Some customers may expect there will never be a security incident but this is out of Fearties' control since it is criminal actions which will generate some of these cases.

One way to reduce the effect of subjectivity is to look at trends in performance since the biases in opinion will be present in each individual time period but the trend will show relative changes in satisfaction.

### **(iii) Management style**

The current style at Fearties would appear to be budget-constrained. The targets set are all financial and are short term in that they are only for the next financial year. This style of management leads to a focus on cost control and often staff are not rewarded if they take actions which will require investment or the foregoing of short-term profit, such as marketing to build a reputation for reliability as an outsourcing partner.

The profit-conscious style evaluates managers on their ability to build long-term profits for the business. This style would appear to suit Fearties' strategic goals but it does not emphasise non-financial issues such as recruitment and retention. It would not fit with the increased importance of these non-financial factors under the balanced scorecard approach to management.

In the non-accounting style, budgetary information plays a less important part of staff's performance evaluation. It suits an emphasis on quality and on operational factors. It would fit with many of the new non-financial indicators being proposed from the balanced scorecard. However, it may not be strategically suitable for Fearties due to the importance to the family of the financial returns from the business.

Overall, a profit-conscious approach is recommended but one which uses both financial and non-financial indicators from the balanced scorecard to support the long-term financial goals of the company. The profit-conscious style will suit the financial needs of the family and its long-term goal of growth while a supporting non-accounting approach will suit some of the operational arms of the business, for example, dealing with legal compliance and employee issues.

### **(iv) Targets and the appraisal process**

The existing system of targets will have to be modified to reflect the new balanced scorecard approach. This will involve the use of new non-financial indicators which will require explanation to the member of staff.

Non-financial targets are subject to the measurement problems noted earlier and, particularly, problems of subjectivity on the assessment of performance may become areas of dispute in appraisal. In order to address this difficulty, a historical analysis should be performed to use as a benchmark for future targets. There is also the possibility that, without such analysis, the targets set are unachievable or else too easy and so lead to unnecessary costs.

It will also be important that targets are controllable and so it will be necessary to review their areas of responsibility to ensure that the new targets reflect the performance of that individual. It will also be important to consider external factors which might

require adjustment when considering the final appraisal. An example of this would be if legislation changed requiring higher qualifications for employees and so making recruitment more difficult or training more costly.

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. There is a danger that an over-focus on targets leads to a failure to consider helping the employee to advance.

A further issue with the use of targets in appraisal is that what gets measured gets done. This means that the choice of targets is important in focusing the employee on their tasks. The new balanced scorecard approach should assist in creating a broader assessment of the employee's performance and aligning these with the strategy of the business as a whole.

## 2 (a) Objectivity

The K Score can be calculated easily from readily available financial data. Both Freeze and Thor will publish their financial results, so the financial data will be readily available. There is no subjectivity required in calculating the score which can be easily compared between different companies, at different points in time, or against the likelihood of corporate failure. However, the translation of Thor's results into K\$ from its reporting currency of J\$ may make it inappropriate to compare their K Scores.

### Uses historical data

Historical financial data is used to calculate the K Score, which is therefore backwards looking. This data may be out of date and significant events or market changes may have occurred since the period to which the data relates.

The data given to calculate Freeze's K Score is from the year ended 31 December 20X7 and is already almost a year out of date. In April 20X8, an oil spill led to widespread environmental damage in Kayland. The oil spill was thought to have been caused by the incorrect installation of machinery by Freeze. This will probably have a major impact on Freeze's performance during 20X8, for example, due to fines or loss of customer trust. This is not reflected in the historical financial data given, which was approved by the board on 31 March 20X8.

### Data may be unavailable or unreliable

Financial data needed to calculate the K Score may be unavailable. For example, as a privately owned business, Thor will not have a market value for equity, which is required to calculate the K Score.

The data may also be unreliable as a basis for calculating the score, though as a listed business Freeze will be subject to audit and listing regulations, so its published data is probably reliable.

### Appropriateness of the K Score model

A quantitative model, such as the K Score, identifies financial ratios which significantly differ in value between surviving and failing companies. Statistical analysis is then used to choose the weightings for these ratios in a formula for the score, which can be used to identify companies which exhibit the features of previously failing companies. The company being analysed must be similar to those being used to build the model for the results to be relevant.

The K Score model is based on recent data for all Kayland listed companies and Freeze is a construction company in the oil exploration industry. It may, therefore, be too dissimilar to other industries on the small Kayland stock exchange, for example, in the markets it serves. Also, as the Kayland stock exchange is small, there may be insufficient data from failing companies on which to base the model.

Thor is based in Jayland, so the K Score model, which is based on data from the Kayland stock exchange, is unlikely to be applicable.

### K Score may not give a clear indication of corporate failure

The K Score may not always give a clear indication of whether corporate failure is likely. K Scores of between 2 and 5 lie in the 'grey area', where further analysis is needed in order to reach a clear conclusion.

The K Score is only a measurement at a single point in time, in this case 31 December 20X7, and without undertaking measures at different times, it will not indicate whether a company is becoming more or less likely to fail. As the K Score is based on statistical correlations of financial ratios with subsequent failure, it does not give any suggestions on how to reduce the likelihood of corporate failure.

## (b) Calculation of Freeze's K Score at 31 December 20X7

With a K Score of 4.367, Freeze is in the grey area and further analysis is required in order to determine if corporate failure is likely.

$$\begin{aligned} \text{K Score} &= 2.5K_1 + 5.0K_2 + 0.1K_3 + 1.9K_4 \\ &= (2.5 \times 0.367) + (5.0 \times 0.180) + (0.1 \times 14.930) + (1.9 \times 0.556) \\ &= 0.918 + 0.900 + 1.493 + 1.056 = 4.367 \end{aligned}$$

### Workings

$K_1$	Net current assets/total assets = $(2,164 - 645)/4,135 = 0.367$
$K_2$	Profit before interest and tax/total assets = $745/4,135 = 0.180$
$K_3$	Market value of ordinary shares/book value of non-current liabilities = $(\$10.60 \times 500)/355 = 14.930$
$K_4$	Retained earnings/total assets = $2,300/4,135 = 0.556$

### (c) Operational gearing

Operational gearing indicates the level of business risk which companies face by measuring the relative amount of fixed costs. Companies with high operational gearing have high business risk. They are less able to cover their fixed costs if contribution falls due to a reduction in revenue or if there is an increase in variable costs. Highly geared businesses are therefore more likely to fail than those with lower operational gearing.

The recent recession in Jayland may adversely affect Thor's contribution, as might movements in exchange rates between the Kayland dollar and Thor's home currency.

The demand for services in the oil exploration industry varies directly with the world oil price. The recent fall in world oil prices will result in a reduction in oil exploration activity. Companies with high fixed costs are therefore more likely to fail in these circumstances.

The operational gearing ratio is defined as contribution/PBIT. Freeze's operational gearing ratio is 2.48 (1,845/745), whilst Thor's is 5.48 (4,960/905). Thor is more highly geared and therefore more likely to suffer corporate failure.

#### Financial gearing

The financial gearing ratio measures financial risk and reflects the company's ability to service its long-term debt. Similarly to operational gearing, high financial gearing makes companies more likely to suffer corporate failure because they are less able to make interest payments if trading conditions deteriorate.

Both Freeze and Thor publish their financial results, so the data required to calculate financial gearing will be readily available.

The financial gearing ratio is defined as (preference share capital + long-term debt)/total equity. Freeze's financial gearing ratio is 0.11 (355/3,135), whilst Thor's is 0.13 (382/ 2,943). Thor is marginally more highly geared and therefore more likely to suffer corporate failure.

#### Conclusion

Both Thor's operational and financial gearing are higher than those of Freeze. In this respect, Thor is more likely to suffer corporate failure than Freeze.

It is unclear, however, whether the colleague's view that operational and financial gearing are the two most important indicators in predicting corporate failure in this industry is correct, as both Freeze and Thor have not yet failed. There may be many other important indicators of corporate failure, including non-financial ones.

### 3 (a) BPR

BPR is the fundamental and radical redesign of business processes to achieve dramatic improvements in performance. For Jolt, the BPR proposal aims to meet the retailers' demands for lower prices and the requirement to meet performance targets relating to lead times and quality.

#### Lower prices

To be able to sell swimwear at lower prices, Jolt proposes reducing costs by outsourcing production to an overseas supplier. The current average production cost of manufacturing is \$5.00 per unit. The cost of purchasing from an external supplier is \$4.00, which is \$3.50 purchase cost, plus \$0.50 (\$5,000/10,000) shipping costs. This 20% (\$1.00/\$5.00) saving is a significant improvement in financial performance, but not a dramatic one, and may not fit the definition of BPR. Exchange rate movements could reduce the cost saving significantly. In the near future, expected changes to international trade tariffs will increase the unit cost to \$4.35 (\$4.00 + 10% of \$3.50), and reduce the cost saving to just 13% (\$0.65/\$5.00).

Unless Jolt decides to outsource the remaining 50% of production and close its factory completely, factory overheads of \$0.95 per unit may still be incurred and just be re-allocated to Jolt's other sportswear products, possibly totally eliminating the cost saving.

Combining several jobs into one is a characteristic of a re-engineered process. As such, reorganising staff into multidisciplinary teams may create overhead savings, such as by reducing the number of staff employed by the automation of purchase invoice processing. These savings will be offset by additional costs, such as investment in new information systems, retraining staff to work in unfamiliar roles, or incentivising them to work overseas.

Re-engineered processes often allow workers more autonomy to make decisions. Giving teams more autonomy to set prices may allow Jolt to set prices reflecting the customers they serve and to prevailing market conditions.

#### Meeting performance targets

##### Lead times

Current lead times for customer orders are unknown. As the proposed supplier is 17,000 km away, goods will take several weeks to be transported by sea. This may increase lead times significantly, though may be offset by faster production times in larger factories. As Jolt's sales are seasonal, retailers may pre-order in advance, reducing the importance of long lead times. To minimise shipping costs, shipping containers must be full, which may mean deliveries will be in larger quantities and which may increase the lead times.

## Quality

Jolt is already known for producing high quality products. The quality of the new supplier's products needs to be ensured. Any deterioration in the quality of Jolt products would undermine its reputation and reduce long-term business performance as fewer consumers would buy them. Monitoring of quality standards is more difficult when using external suppliers, especially at long distances, than when manufacturing in Jolt's own factory. In re-engineered processes, work is performed where it makes most sense to do so. In this respect, having staff responsible for quality and supplier audits working close to the manufacturing site will help Jolt maintain performance in supplier relationship management.

### (b) Development of information systems

Functional departments currently have their own spreadsheet-based systems for planning and reporting. The data from these is unreliable and inconsistent. They are inadequate to provide the timely and accurate performance data, which Jolt needs to meet retailers' performance targets.

Jolt must establish a shared database accessible by all parts of the multidisciplinary teams. This should be updated in real time, so workers in different time zones are using current data. The database should include financial data, such as cost information, and non-financial data relating to lead times and quality. Information systems must be able to provide teams with reports of performance data, and budgets, specifically for the accounts which they manage.

Fast and reliable internet services will be required, for example, so that team members can participate in online meetings, as they will be unable to meet in person.

Jolt may need to invest in specialised systems, such as the sophisticated software used by its competitors to minimise shipping costs by ensuring shipping containers are shipped fully loaded. Systems development may be required to integrate with suppliers' bespoke systems so as to automate purchase invoice processing. Jolt must evaluate whether the benefits arising from all of these changes to its information systems are worth the cost and disruption of implementing them.

### (c) Impact on workers

Jolt is known for its high ethical standards towards workers. Following the BPR, at least 500 (50% of 1,000) manufacturing workers are likely to be left without jobs. As Jolt's competitors have already closed their factories, these workers may be unable to find new jobs doing similar work, though jobs may be created in the new supplier's factory.

Staff who remain in work may become demotivated if they think that BPR will be extended to all of Jolt's products. This may reduce financial performance by reduced productivity, increased staff turnover or difficulties recruiting new staff.

Staff may also be demotivated if they are placed in unfamiliar roles, or may be unwilling to learn new skills. Other staff may welcome, and be motivated by, the opportunity to perform new types of work, learn new skills or work overseas. This will probably increase their individual performance.

## Suppliers

Any association with unethical practices, for example, if the new supplier were found to be using unacceptable working practices, could seriously harm Jolt's reputation for high ethical standards. This could reduce financial performance, as consumers may not buy Jolt's products, or potential investors could be discouraged from providing capital. Part of the team located close to the manufacturing site is responsible for supplier audits, which may help to reduce this risk.

## Environment

Jolt should consider the environmental impact of shipping goods long distances. The environmental credentials of the new supplier are unknown. As Jolt voluntarily publishes a corporate sustainability report, any deterioration in its performance on environmental issues will become widely known. This could lead to reduced financial performance if consumers switch to competing products.

- 1** (i) No marks for naming the perspectives (done in question)  
Current KPIs focus on financial aspects only; absolute figures less useful than relative figures; not covering the long-term perspective; not referencing external data – up to 3 marks  
Financial indicators: Revenue growth, operating margin, cash flows generated, dividend growth (long and short term) – 1 mark per point up to 8 marks  
ROCE – 1 mark for calculation, 2 marks for discussion  
New indicators – up to 4 marks for each of the customer, internal and innovation perspectives. Marks are for justification and discussion of two new indicators  
Maximum 20 marks
- (ii) Problems of NFPIs – 1 mark per point  
Maximum 8 marks
- (iii) Up to 4 marks for each heading (budget-constrained, profit-conscious, non-accounting):  
1 mark for identifying current style  
1 mark for definition of each style  
Up to 2 marks for discussion of relevance of each style for Fearties  
Up to 3 marks for a reasoned recommendation  
Maximum 10 marks
- (iv) 1 mark per point reflecting:  
Balanced scorecard changes  
Achievability of targets  
Controllability of targets  
Responsibility for targets  
Appraisal process  
Maximum 8 marks
- Professional presentation: up to 4 marks
- Total 50 marks**

- 2** (a) 1 mark per point:  
Usefulness of using quantitative models in predicting the corporate failure of Freeze and Thor – up to 11 marks
- (b) Calculation the K Score ( $K_1$  to  $K_4$ ) – 4 marks  
Conclusion on likelihood of corporate failure – 1 mark  
Maximum 5 marks
- (c) 1 mark per point:  
Calculation of operating and financial gearing ratios – 2 marks  
Comment on the implications of the ratio calculations – up to 2 marks  
Usefulness of operational gearing ratio – up to 4 marks  
Usefulness of financial gearing ratio – up to 3 marks  
Conclusion on Thor compared to Freeze – up to 2 marks  
Maximum 9 marks
- Total 25 marks**

- 3 (a)** 1 mark per point:  
Explanation of BPR – 1 mark  
Lower prices – up to 6 marks  
Performance targets – up to 6 marks  
Maximum 11 marks
- (b)** 1 mark per point:  
Development of information systems required for BPR – up to 6 marks
- (c)** 1 mark per point:  
Ethical standards relating to workers – up to 4 marks  
Ethical standards relating to suppliers – up to 3 marks  
Ethical standards relating to the environment – up to 3 marks  
Maximum 8 marks

**Total 25 marks**