

Fiag

1.

Exhibit 1 – Company information

Fiag Bicycles (Fiag) is a large national bicycle manufacturer in the well-developed country of Beeland. It was a family-owned business until three years ago when it raised new funds from a venture capitalist (VC) to develop new models of bicycle. Of the eight models in its current range, two have been significantly redesigned and one totally new model has been launched in 20X4. This new model (the Zoam) has been developed over five years and is Fiag's most radical development to date, as it is lightweight and has an electrical battery which can assist less physically fit riders to cycle up hills.

The VC invested \$30m in 20X2 and insisted that Fiag produce a mission statement as a clear indication of the company's objective. The objective of Fiag is 'to give the shareholders sustainable growth in returns by developing and manufacturing the best quality bicycles and so bring the joy of cycling to a broad customer base in Beeland'.

Exhibit 2 – Performance reporting

The VC has a non-executive director on the board of Fiag. She has criticised the executive directors over the most recent performance report that was presented to the board meeting in order to review the annual performance to 30 June 20X5 (Appendix 1). Firstly, she was very unhappy about what she felt were attempts to manipulate the picture presented in the report.

Secondly, she repeated criticism that she had given in earlier board meetings that the report does not address the company's objectives. She then demanded that the executive directors take action on these points immediately and asked that the board meeting be reconvened once this is done.

The chief executive officer (CEO) wants you, as a performance expert in the company, to give him advice on these matters. He is committed eventually to a redesign of the performance reporting at Fiag but needs to understand the non-executive director's concerns more clearly before this begins. He is happy that there are no arithmetic errors in the presentation of the performance report but wants a critical review from you:

1. addressing the question of manipulation in the impression given by the report
2. assessing whether the current report addresses the company's objectives and briefly, any other issues in its presentation

Exhibit 3 - External business environment

The CEO has recognised that the company operates in an increasingly volatile external business environment. Therefore, he has employed a consultant to perform a PEST analysis and he has given you the relevant extracts of their report (Appendix 2). He stated that he does not want you to re-perform the consultant's analysis of the external environment. Instead, he wants you to focus on the implications of the PEST factors identified on Fiag's business and then on providing a justified recommendation of suitable performance indicators to measure the impact of each of those factors.

Exhibit 4 – Appendix 1

Performance Report

Year to 30 June	20X5	20X4	Improvement year on year	Industry average
	\$m	\$m	%	%
Revenue	273	289	-6	
Costs of Sales	131	137		
Gross profit	142	152	-7	
Administrative expenses	50	52		
Distribution expenses	28	29		
Selling and marketing expenses	51	52		
Operating profit	13	19		
Operating margin	4.8%	6.6%		11%
Exceptional costs	0	12		

Net financing costs	0	0	
Profit before tax	13	7	86%

Commentary:

- Revenue from new and redesigned bicycle models grew by 200% in 20X5
- PBT has improved by 86%
- Operating margin has fallen by a small 1.8%

Notes:

- 1 Administrative expenses includes the income from a two year government grant of \$5m p.a. (in 20X5 and 20X4) relating to Zoam.
- 2 Revenue includes revenue from the Zoam (new electrical bicycle) (\$25m in 20X5, \$5m in 20X4).
- 3 Exceptional costs are the costs of developing the new electrical bicycle.

Exhibit 5 - Appendix 2

External business environment at Fiag (August 20X5)

Extract of report by A Consultant

Political environment

- The government of Beeland has recently provided tax allowances to citizens who use a bicycle to commute to work.
- It has also supported cycling by building many new dedicated cycle-paths.

Economic environment

- Beeland has seen steady economic growth for the last 20 years and this wealth has spread through all parts of society.
- The introduction of significant import tariffs has surprised many businesses such as Fiag, who import raw materials or sub-components for final assembly.

Socio-cultural environment

- Having a healthy lifestyle has become an increasingly popular aspiration for the people of Beeland.

- The population of Beeland is ageing with increasing numbers of retired people.

Technological environment

- Cheap, new materials are enabling lighter bicycles to be built without compromising their strength.
- Battery technology has rapidly advanced so that it is feasible to fit lightweight electrical power units to bicycles.

Required:

It is now 1 September 20X5.

Write a report to the chief executive officer (CEO) to respond to his instructions for work on the following areas:

- (a) the performance reporting at Fiag focused on
 - (i) the question of manipulation in the board report (12 marks)
 - (ii) whether the report addresses the company’s objectives and the report’s presentation (14 marks)
- (b) the consultant’s report on the external business environment (12 marks)

Professional marks will be awarded for the demonstration of skill in communication, analysis and evaluation, scepticism and commercial acumen in your answer. (10 marks)

Total 50 marks

Jolt.

2.

Exhibit 1 - Company information

Jolt manufactures high quality swimwear and cycling clothing in its only factory, which employs 1,000 manufacturing staff and 200 support staff. Its

products are used by both amateur and professional sports players in its home country. Jolt is known for its high ethical standards towards its workers, suppliers and the environment, and has voluntarily published a corporate sustainability report for many years.

Jolt is organised into traditional functional departments such as procurement, finance and sales, most of which have their own unreliable spreadsheet-based systems for planning and reporting. As a result, Jolt often fails to produce accurate, timely and consistent data to monitor its own performance, which contributes to failures in achieving the performance targets set by its retail customers.

Jolt's market is seasonal and competitive. Retailers, who are Jolt's customers, for both swimwear and cycling clothing have two key demands: they want lower prices to pass on to consumers and they also require suppliers to meet performance targets relating to lead times and quality.

To help them comply with the retailers' demands, Jolt's competitors have closed down all of their own manufacturing facilities and outsourced all production to overseas suppliers, who have much larger factories and lower costs. To mitigate the cost of shipping goods over long distances, Jolt's competitors have invested in sophisticated software to consolidate orders so that each shipping container is completely full before despatch from their suppliers. Purchase invoice processing is also automated by the integration of information systems into the suppliers' bespoke systems.

Exhibit 2 – BPR proposal

In order to reduce costs, it has been proposed to outsource the manufacture of swimwear, which is 50% of Jolt's total output, to a supplier 17,000 km away. A comparison of the cost of manufacturing and the cost of outsourcing swimwear is given in Appendix 1.

The change to outsourced supply for swimwear will mean that staff from Jolt's functional departments will reorganise into multi-disciplinary teams, each serving major customer accounts. Each team will perform all aspects of account management from taking sales orders and procurement through to arranging shipping and after sales service. Team members dealing with customers will work in Jolt's home country, while those managing quality and supplier audits will work close to the manufacturing site. Teams will be given greater autonomy to set selling prices to reflect market conditions. Many support staff will work in unfamiliar roles or be offered new jobs overseas after the reorganisation.

A consultant has advised Jolt's board of directors that the outsourcing and reorganisation proposal has characteristics of re-engineered processes and could be described as business process re-engineering (BPR). She advised that, as well as evaluating how BPR will improve its business performance in meeting its customers' demands and requirements, Jolt should take into account any ethical aspects of the proposed changes.

In response to the consultant's advice, the board have asked you to help them. The work the board requires in in two parts:

- First, the board would like an evaluation of how the BPR proposal could improve Jolt's performance in relation to its retail customers' two key demands, and
- Second, an assessment of the potential impact of Jolt's high ethical standards on the BPR proposal and consequently on business performance.

Exhibit 3 - Appendix 1

Comparison of the average cost of manufacturing and outsourcing swimwear production

Average cost per unit	Manufacturing Outsourcing	
	\$	\$ ¹
Materials cost	1.85	–
Labour cost	2.20	–
Factory overhead	0.95	–
Purchase cost from supplier ²	–	3.50
	<hr/>	<hr/>
Total	5.00	3.50
	<hr/>	<hr/>

Notes

1. Purchase cost of outsourced products is translated into \$ from the supplier's home currency.
2. In addition to the purchase cost from the supplier, Jolt must pay for shipping costs at the rate of \$5,000 for each large, standard sized shipping container, regardless of the number of units in it. Each container holds 10,000 units when fully loaded.

3. Due to changes in international trade tariffs expected in the near future, swimwear imports into Jolt's home country will be subject to 10% import duty on the cost of imports excluding shipping costs.

Required:

Respond to the board of Jolt's request for work on the following area:

(a) the BPR proposal

(20 marks)

Note: there are 12 marks available for the first part of the work required on this area and there are 8 marks available for second part of the work required on this area.

Professional marks will be awarded for the demonstration of skill in analysis and evaluation, scepticism and commercial acumen in your answer.

(5 marks)

(25 marks)

Harray

3.

Exhibit 1 - Company information

Harray Keyboards (Harray) is a family-owned business which manufactures computer keyboards. It has contracts to supply three large desktop computer manufacturers. Harray won its contracts to supply these manufacturers under severe price competition as the manufacturers themselves have seen the price of their whole desktop package fall in the past 10 years. The contracts are for five years and have at least three years each left to run. At the end of the contract, the desktop manufacturers will retender for suppliers and Harray expects to be in a strong position as the existing supplier to win more work.

The chief executive officer (CEO) and leader of the Harray family is Graham Harray. He and the board believe that the success of the business has been built on an emphasis on strategic focus. He recently declared at a board meeting, 'Cost leadership wins business in our niche market and we should

not over-stretch ourselves into non-core activities – we make cheap keyboards!

Exhibit 2 - Performance pyramid

The CEO has indicated that he wants to use the performance pyramid to analyse the performance indicators used at Harray. He has asked you, as the company's performance management expert, to undertake two pieces of work on this area.

First, the CEO would like you to complete the analysis provided in Appendix 1. Appendix 1 contains the work done so far by a junior accountant on the pyramid headings and their associated indicators for Harray, with additional notes and information about Harray's performance. He would then like you to evaluate only the operational performance indicators at Harray.

Second, there are a number of non-financial indicators used in the performance pyramid and the CEO would like some advice on the reliability of these indicators compared to the financial ones which are usually presented in the board reports. He would like this part of the work to focus on the methods of measuring such indicators including the information sources, and the methods of processing and checking which is normally undertaken. He has told you to use the operational indicators from the first part of the work to illustrate your advice.

Exhibit 3 - Appendix 1

Harray's performance indicator information (for the year ended 30 June 20X5)

Pyramid heading	Indicator	
Value		
1. Vision	Cost leadership in keyboard manufacturing	
2. Financial	Profit in the financial year	
\$600,000		
3. Market	Market share	
12%		
4. Customer satisfaction	Customer complaints	0.4% of
keyboards		
5. Flexibility	Time from order to delivery	28
(average)		
6. Productivity	Operating profit margin	
7.2%		

7. Waste		
8. Quality		
9. Delivery		
10. Cycle time days	Working capital cycle	37

Notes:

1. Vision does not have an indicator. There is a separate project being carried out within the finance department to deal with this.
2. The absolute profit figure is used.
3. Market share is measured by an external marketing expert.
4. Customer complaints are measured by customer returns.
5. Many orders require customisation of the production process. Customers see timely delivery as critical.
6. There are a number of other margins available for use in measuring productivity in specific areas of operations, but operating margin is used as the summary indicator of productivity.
7. There are 16 manufacturing production lines in the factory. These lines are active for nine hours a day for six days a week (52 weeks a year). A keyboard is produced from the production line every 2.2 minutes (including set-up time), while the machines are operating. Last year, the factory produced 1.05 million keyboards.
8. The number of keyboards rejected by quality inspectors in the factory was 15,750 in the year. Of these, 9,450 were able to be reworked at an average cost of \$2 and the rest were scrapped. The standard cost of a keyboard is \$8.
9. Harray uses an external logistics firm (Achall) to handle all deliveries. Harray calls Achall to collect an order and Achall's lorry fleet picks up orders from Harray's factory and delivers to the customer. There are service level agreements governing how long Achall has to deliver the goods to Harray's customers. Achall supplies Harray with data from its own systems on the number of packages delivered and how many were late. Below is the report for last year:

Deliveries made (in total in the period)

5,127

Deliveries made within agreed time after Harray's order received

4,717

Total time taken to deliver Harray's goods (i.e. the total, over all the orders, of the number of days each order spends in transit)

17,423

10. Working capital cycle is calculated as inventories days (22) + trade receivables days (42) – trade payables days (27).

Requirements

It is now 1 September 20X5.

Respond to the CEO of Harray's request for work in the following area:

(a) the use of the performance pyramid

(20
marks)

Note: there are 13 marks available for the first part of the work required on this area and 7 marks available for the second part of the work required on this area

Professional marks will be awarded for the demonstration of skill in analysis and evaluation, scepticism and commercial acumen in your answer.

(5
marks)

(25 marks)

Answers

Fiag

1.

Suggested Solution:

Report

To: CEO of Fiag

From: A. Accountant

Date: September 20X5

Subject: Performance reporting and other management issues at Fiag

Introduction

This report evaluates the current performance report used by the board of Fiag, firstly against the accusations that it misrepresents performance and then, secondly that it fails to measure Fiag's performance against its objectives. Finally, justified recommendations of performance indicators arising from an analysis of the external business environment are offered.

(a)(i)

Manipulation of board report

The non-executive director (NED)'s criticism of the current report seems to have good reason. The problems lie in omitting bad news by using classifications some of which appear to select only a positive view of performance and some that manipulate commonly used performance indicators.

Omitting the bad news

The report gives only one industry average (operating margin) but does not provide a revenue growth comparator. While cost and detailed profit information is often difficult to obtain, the revenue figures are clearly reported for most entities and so it should be straight-forward to see if Fiag's fall of 6% is representative of the market as a whole.

The report does not calculate many of the year on year changes. This may be because important headings such as gross profit show a deteriorating performance. It could be argued that many of these calculations are unnecessary (such as for the detailed cost headings). However, no such case can be made for not showing the percentage fall in operating profit.

The revenue performance fall may be worse than portrayed as the range without the electrical bicycle has seen revenue fall from \$284m to \$248m (13%). This category covers 91% of the current revenue earned by Fiag.

Misclassification of costs

Exceptional costs relate to the development of the new electrical bicycle which appears to be part of the main activities and a central part of the strategy of the business. These costs should be considered normal. Their placement after the operating profit line means that key performance indicators such as return on capital employed are not affected so over-stating performance.

Administrative expenses includes government grant income which probably should be stated separately as it is material, short term and will not match to the full five years of costs associated with developing the electrical bicycle.

Commentary

The commentary appears misleading. It gives a positive impression of revenue growth by only selecting the growth in revenue from new models rather than noting the underperformance of the range as a whole. It quotes the improved profit before tax figure while ignoring the widely used operating profit figure, thereby bypassing the reason for the rise in profit before tax which is the fall in exceptional costs resulting from the completion of development of the new electrical bicycle model.

The description that a fall in operating margin is small ignores a number of facts. The fall is not 1.8% but 1.8 percentage points which is 27% on 20X4. Also, no reference is made to the industry comparator of 11% against which Fiag's 4.8% looks poor.

Thus, the commentary fails to address the falling revenue, gross profit and operating profit and so, is not representing the performance of Fiag accurately.

(a)(ii)

Measuring the achievement of the objectives of Fiag

The critical measure of whether the report is fit for its purpose is that it shows whether the business is achieving its objectives. Fiag's overall objective is 'to give the shareholders sustainable growth in returns' and it intends to do this by:

- developing the best quality bicycles;
- manufacturing the best quality bicycles;
- bringing the joy of cycling to a broad customer base in Beeland.

Overall, the report is in the format of a profit and loss statement, so it contains a number of common financial measures, but these are only loosely

connected to the stated mission. The following problems are noted about how the report measures the achievement of the objectives:

1. There is no direct measure of shareholder returns in the report, not even profit after tax which would allow an earnings calculation. There is no statement of the gains that shareholders would make in income (dividends paid) or capital terms. While it is not possible to give capital growth through share price rise as Fiag is unlisted, shareholder wealth changes could be measured through NPV or economic value added. Growth of the returns would require the change year on year of these indicators, and this is only partially recognised in the existing report where not all growths are provided.
2. The sustainability of the returns are unclear from the report. These require the determinants of future performance to be measured. This should be done by examining the success of the supporting strategies.
3. The first two supporting strategies of the overall objective relate to the qualities of Fiag's products. The report does not measure these individually. There is an indirect measure of customer attitude through the revenue growth figure but without competitor comparison or a market share it is not possible to draw a conclusion about any of the qualities of the products. These elements relating to the products are difficult to measure overall as they are likely to be dependent on each product line individually.
4. The objectives also make clear the need to separately measure development and manufacture.
 - a. There are no separate categories for all new products although there is a note on revenue from the Zoam. The number of development projects, their state of completion and then their market performance all require to be monitored.
 - b. There is little apart from the gross profit to indicate the efficiency of the manufacturing process.
5. The failures in points 3 and 4 reflect the choice to use only data from the financial systems in the report. The measurement of these aspects requires Fiag to move beyond its traditional information systems.
6. There is no measure of the customer base and so the broadening of the customer base cannot be commented upon. This final aspect would appear to be addressed by the Zoam which seems attractive to those

who may previously have not been willing or able (elderly) to make the physical effort. This failure also reflects the lack of external competitor/market information in the report where the only external data given is the industry average operating margin.

Other aspects

From the perspective of a board report, it should provide information to allow the board to perform its tasks of planning for the future of Fiag and controlling its existing activities. For planning purposes, the lack of external information about customers and competitors makes some of the numbers difficult to interpret. For control purposes, there is previous year information given but not sufficient to establish a trend (which requires at least 3 years of information). Also, there is no indication of whether the business is meeting its budgets through the provision of variances.

In terms of presentation, the report is clear and in a traditional profit and loss format, would be easily understood by most readers. It uses terms that would be recognisable to those used to reading accounts. It is helpful that a narrative commentary is provided. However, problems with the quality of the narrative are noted above and often the commentary does not go beyond restating the figures in the table. It should provide the significant explanations for performance as measured by the key indicators which should be linked directly to the objectives of Fiag noted above.

(b)

External business environment at Fiag

The political environment is characterised by government actions which appear aimed to increase the use of bicycles in Beeland. Tax allowances represent a financial incentive while the building of new cycle paths should make cycling safer and so increase participation. These factors are both beneficial to Fiag. Suitable indicators of the impact of these factors on Fiag would be the increased demand for their products (volumes purchased) and also the increased participation rates with total number of kilometres cycled or if this is not available then total market size for bicycles in Beeland. It is not unusual for retailers to ask if customers were buying under a government scheme and if Fiag did this it could measure how well it was exploiting this free sales promotion. The growth of these indicators should be compared with revenue growth at Fiag.

The broad economic environment is characterised by growth and the populace of Beeland has become wealthier. For Fiag, this should mean growing volumes and margins although the cost base (e.g. staff costs) will inflate too. Again, the size and growth of the overall market and Fiag relative performance against these will show if it is developing a competitive

advantage. The introduction of tariffs will increase the costs and can be measured at Fiag by the negative impact on profit margins.

The socio-cultural factors include demographic trends and changes in customers' tastes. The increasing interest in health should again be a factor in driving the consumers' taste towards cycling and so, as above, indicators of the market size/growth and Fiag's relative performance are relevant. The ageing demographic factor should seem to increase the attractiveness of the electrical bicycle over other models and so the market/growth of this particular sector and Fiag's share along with the relative performance of electrical bicycles against the traditional models at Fiag should be monitored. Fiag seems at the forefront of this development and should be seeking to maintain that competitive advantage.

Technology impacts on Fiag in two ways. Firstly, the development of new models, such as the Zoam, where the lightweight aspect will further enhance the model's attractiveness especially to the elderly. In order to continue to monitor competitive advantage, the average weight of Fiag's models (especially the Zoam) should be compared to the average of its competitors. Secondly, new materials could improve further the contribution per unit as material costs are cut. The use of contribution or gross profit to measure this impact is plausible but may be indirect since this change may also influence the selling price. Therefore, a measure of direct material cost per unit would better capture the change.

Marking Guide

(a) (i) Misrepresentation by report

1 mark per point including:

Omitted industry averages

Omitted certain yr on yr changes

Misclassification of costs: exceptional costs and grant income

Commentary misleading

Additional credit given where points are correctly supported by calculation.

Maximum 12 marks

(a) (ii) Measuring the achievement of the objectives of Fiag

Breakdown objectives of Fiag – up to 2 marks

Show hierarchy and break into measurable parts

Measurement of objectives within the report – up to 10 marks
Other points – up to 4 marks

Maximum 14 marks

(b) External business environment

For each of Political, Economic, Socio-cultural, Technological:
Discussion of the relevant issue in the PEST analysis – up to 2 marks
Justification of suggested KPIs on the issue – up to 2 marks
Points must be related to Fiag's business.

Maximum 14 marks

Professional marks

Communication:

Report format and structure – use of headings/sub-headings and introduction
Style, language and clarity – appropriate tone of report response, presentation of calculations, appropriate use of the CBE tools, easy to follow and understand

Adherence to the CEO's request to re-perform the PEST and to offer a justified performance indicator per PEST factor.

Analysis and Evaluation:

Appropriate use of the data to provide relevant calculations to support discussion and draw a conclusion as to whether the report presents a manipulated picture

Appropriate use of the data to support discussion and draw a conclusion as to whether the report supports monitoring of Fiag's objectives

Scepticism:

Recognition that information relating to certain industry comparators can be difficult to obtain

Recognition that failures in measuring the supporting strategies are because of only using financial systems

Commercial Acumen:

Recognition that the NED's criticism seems to be merited with supporting evidence

Provision of suitable performance measures are practical and plausible in relation to the issues identified by the PEST analysis.

Maximum 10 marks

Maximum 50 marks

Jolt

2.

(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 \$0.95c 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) 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. This will be amplified if Jolt decide to ship containers that are not full, increasing the carbon footprint generated per item. 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.

Marking Guide

- (a) 1 mark per point:
Explanation of BPR – 2 marks
Lower prices – up to 6 marks
Performance targets – up to 6 marks

Maximum 12 marks

- (b) 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

Professional marks

Analysis and Evaluation:

Use of the data in Appendix 1 to determine relevant calculations to analyse the outsourcing proposal

Comprehensive evaluation of how the BPR proposal could improve performance of the customers' two key demands is undertaken

Scepticism

Recognition that the BPR proposal will bring additional challenges to Jolt, not just potential improvements

Identification that information related to customer lead times is missing

Commercial Acumen:

Comprehensive assessment of the possible ethical consequences of the BPR proposal

Maximum 5 marks

Total 25 marks

Harray**3. Suggested Solution:**

(a) There are four operational headings in the pyramid which shall be considered in turn.

Waste is about optimal use of resources and minimisation of non-value adding activity. There are 1.05 million keyboards produced but this only represents 86% utilisation of the capacity of the factory (2,695,680 minutes of production line time are available at 2.2 minutes per keyboard meaning that the factory can produce 1,225,309 at full capacity). Therefore, capital invested in the factory is underutilised, although an 80+% utilisation would be considered efficient for many manufacturing operations.

Quality can be measured through four cost types: inspection and prevention costs (which represent the costs of preventing faults in the production process and inspecting to avoid faulty goods leaving the factory) and internal and external failure costs (which are costs resulting from faulty goods being identified before and after delivery to the customer). There are no data given for 20X5 on the costs of inspection and prevention. However, the effectiveness of inspection can be measured in that only 0.4% of orders were returned while inspection stopped the delivery of 1.5% of faulty goods. There was a loss of \$50,400 at standard cost from the scrapping of faulty keyboards although 60% of faulty boards identified were able to be repaired. The effectiveness of prevention can be measured in that there is a roughly 1.9% failure rate in total, which must reflect the good production practice at

the factory. There are data on measures of the costs of internal failure from reworking goods (\$18,900). But there are no data on the costs of external failures from 0.4% of customer returns which may incur further repair or warranty claim costs.

Delivery has been outsourced to Achall and Harray is reliant on Achall to provide the data on the quality of Achall's own service. This represents a risk which Harray can control by monitoring its own customer feedback to identify if Achall is under-reporting the late deliveries. Based on Achall's data, 92% of orders are delivered on time at an average time of 3.4 days.

Cycle time for working capital is being measured but this should be done for all the significant processes in Harray. The processes which have been identified so far are setting up production lines, running the production on an order and delivering the order. Measurement of production cycle times is likely to be particularly important in assessing the efficiency of such a cost-conscious business. There are data on delivery time (3.4 days on average) and on production time (2.2 minutes per production line). These should appear in the pyramid of indicators if they are deemed sufficiently important.

(b) In order to understand the issues surrounding measurement of non-financial indicators, it is necessary first to consider the more commonly used financial ones. Financial indicators will be produced by Harray's financial systems. These systems will generate much of the cost information used, for example, in measuring the costs of quality. They are internally controlled and additionally monitored by the external auditors of the organisation. Such systems are by definition working with easily quantified data (invoice values). For these reasons, they are likely to be the most reliable data available.

However, for the measurement of headings such as cycle time, the data are often going to be nonfinancial. Cycle time requires measuring how long processes take, for example, the length of time it takes a production line to produce a keyboard. These data are within the control of Harray and the data will be obtained by production records and interviewing the key personnel. However, they will not be subject to the checking and controls over financial data and therefore, may be more prone to error.

Other non-financial data used may come from external sources. For example, at Harray, they are using the delivery data of Achall. This data must be treated carefully as there is an incentive for Achall to under-report late deliveries as there may be penalties for such non-performance in their contract with Harray (there is also the threat of losing the contract). Harray will want to ensure that Achall's data is reliable by checking it against its own

customer complaint records. Also, the definition of non-financial data is more subjective, for example, what constitutes a late delivery (though this should be consistent with the service level agreed in the contract).

[Tutorial note: There is a wide variety of possible answers to this question which will be given credit, provided they are consistent with part (a).]

Mark Scheme

(a) Complete the analysis and evaluate the operational performance indicators at Harray, using the headings and data in Appendix 1.

Waste – up to 4 marks

Quality – up to 6 marks

Delivery – up to 4 marks

Cycle time – up to 4 marks

1 mark for correct calculation of each suitable indicator and 1 mark for each point in commentary

Maximum 13 marks

Evaluate the reliability of non-financial indicators as requested by the CEO, using the operational performance indicators - 1 mark per relevant point

Maximum 7 marks

Professional Marks

Analysis and Evaluation

Appropriate use of data to perform suitable calculations to complete the work started by the junior accountant

Comprehensive evaluation is made of the four operational indicators

Scepticism

Recognition that more than just working capital should be assessed under cycle time

Commercial Acumen

Addresses in the three areas of focus requested in the advice on the reliability of the NFPIs

Maximum 5 marks

Total 25 marks