
Answers

- 1 To: The CEO of Arkaig Manufacturing (Arkaig)**
From: An Accountant
Date: September 20X5
Subject: Performance reporting and management issues at Arkaig

This report evaluates the current performance report used by the board for strategic review. Next, the use of economic value added (EVA™) at Arkaig is illustrated and its use compared to return on capital employed (ROCE). Then, the differences between performance measurement and management at the different levels of the management hierarchy are discussed with reference to Arkaig. Finally, the implications of a value chain analysis for performance management are assessed.

(i) Strategic performance reporting

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

- addresses the overall aims of the business;
- contains appropriate information for decision-making; and
- is well-presented.

The primary aim of Arkaig is to maximise shareholder wealth by providing suitable products for its customers. These products should have a number of qualities: be world-class; tailored; use technology innovatively; show improved machine downtime; and reduce energy consumption for customers.

This should be supported by an entrepreneurial culture among the employees.

Overall, the report contains a number of common financial measures but they are only loosely connected to the stated mission. The following problems are noted about how the report measures the achievement of the mission:

1. There is no direct measure of shareholder wealth in the report. The overall measure of performance for shareholders is provided through the absolute profit after tax and ROCE. It usefully benchmarks the net profit margin and ROCE with industry averages. However, these measures are only indirectly linked to value. The suggestion to use EVA™ is, therefore, appropriate for Arkaig.
2. The supporting pillars of the mission are all qualities of the products produced by Arkaig. The report does not measure any of 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. For each in turn:
 - (a) The ‘world class’ nature of the offering could be measured by market share or customer survey responses.
 - (b) The tailored nature of the products could be measured by the cost of individual design for each installation or customer survey responses.
 - (c) Technological innovation could be measured through comparison of features with the competition or alternatively, by number of industry awards won.
 - (d) Machine downtime and energy consumption requires specific testing of each product line.
3. There is no measure of the employee culture although there is a comment that it is being achieved but this lacks evidence.

The report shows the financial performance by sector as well as in total for the business and the provision of some industry averages is useful in benchmarking performance.

For planning purposes, the lack of external information about customers and competitors makes some of the numbers difficult to interpret. For example, there is no indication whether the fall in revenue is due to general economic conditions or specific faults with Arkaig.

For control purposes, there is previous year information given but not sufficient to establish a trend (which requires at least three years of information). 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 it avoids overloading the reader with data. It uses terms which would be easily recognisable to those used to reading accounts. It is helpful that a narrative commentary is provided. However, often the commentary does not go beyond restating the figures in the table. It should provide the significant explanations for each of the major changes commented upon. For example, by stating why the ROCE has exceeded the industry average.

The commentary is an appropriate place to handle the less quantitative aspects of performance such as innovation and employee culture but it does not offer anything substantive. For example, it would be helpful to state what mechanisms are in place to emphasise the entrepreneurial culture (such as percentage of employees who own shares and the total proportion of equity owned by staff).

(ii) Economic value added (EVA™)

Workings:

	Year ended 30 June 20X5 \$m
Economic value added	
Operating profit	3,175
<i>Add back:</i>	
Amortisation	95
Marketing capitalised	90
Research and development capitalised	705
Depreciation	1,780
<i>Less:</i>	
Tax paid	694
Lost tax relief on interest	53
Economic depreciation	1,907
NOPAT	<u>3,191</u>
Capital employed	
At 20X5 year start	19,404
Research and development asset	3,528
Marketing spend capitalised	900
Marketing written-off	(100)
Adjusted capital employed	<u>23,732</u>
WACC = (55% x 12%) + (45% x 3.8% x (1 – 25%))	
= 7.88%	
EVA™ = NOPAT – (WACC x capital employed)	
= 1,321	

The business has created \$1.32bn of value in the last year. The net operating profit after tax more than covers the cost of the capital used by the business.

The main benefit to EVA™ is its link to the overall corporate objective of maximising shareholder wealth. ROCE gives a much less direct link to shareholder wealth as it is less cash-like and more tied to the accounting assumptions around producing a profit figure.

The basic test of performance is simple since for EVA™ if it is positive, then the business is generating a return above that required by the providers of finance. ROCE requires a target level to be set usually based on benchmarking to the industry sector and the setting of this target return can be somewhat subjective.

EVA™ encourages investment for the future (for example, in advertising and development) by removing such costs from the performance period and treating them like capital expenditure. This will reduce the dysfunctional temptation for management to engage in some short-term decision-making, which can be a problem with the unadjusted capital employed figure from the financial statements which is used in ROCE. This is particularly relevant to Arkaig, where research and development is a significant activity.

EVA™ is consistent with net present value (NPV) as businesses with an increasing present value will increase EVA™. This will aid communication as NPV is a widely used appraisal measure for businesses.

Overall, however, the better link to shareholder wealth creation and the use of EVA™ in a value-based management framework may make this extra complexity worthwhile for a large entity such as Arkaig.

(iii) Performance hierarchy

According to Anthony, there are three tiers to decision-making in an organisation and each one has different needs which impact on the performance information which is required.

The strategic level is the one associated with the higher levels of management (such as the board). Strategic performance is measured over longer periods (3–10 years) since this depends on the achievement of the strategies which will enable the achievement of the overall mission of the business. The information will be externally focused requiring information on competitors and markets against which the company's performance can be benchmarked. This information will be used mainly for planning rather than controlling. At this level of the hierarchy, forecasts will be prepared and broad targets will be set for the lower levels of management and their performance measured against these targets. Therefore, information will often be heavily aggregated and qualitative in nature (such as customer attitudes). The board report evaluated above is an illustration of this type of information.

At the tactical level, the middle layer of management will be concerned with shorter term and more detailed objectives (possibly over a quarter or year) than the strategic level. The information will be collected on the deployment of the company's resources

and activities on a functional department or business unit level. This information will be used to see that the strategic objectives are being supported by the company's activities. It will contain information to aid some short-term planning but will focus more on assisting this layer of management to control the operations of the business. Much of the information at this level will be internally generated and will be combined with the targets supplied by the strategic level in order to make decisions. For example, generally, the achievement of budget targets or more specifically, the sales and marketing department might be required to report quarterly on changes in the order book in order that the strategic level can forecast future revenue levels.

The operational level focuses on the day-to-day activities of the business ensuring that specific tasks set by the tactical level are achieved. Therefore, information at this level is detailed and task-specific. It will be prepared on a regular basis (often daily or weekly). It will be aimed to assist management at this level in controlling the business in order to achieve its short-term plans (weekly sales or monthly profit targets). There will be little external information needed at this level as there is very little planning activity being carried out.

(iv) Value chain

The value chain is a model of business integration showing the way that business activities are organised and linked. This model uses activities rather than traditional functional departments (such as finance) to describe the business, emphasising that it is activities which create value and incur costs. The activities are split into two groups: primary ones which the customer interacts with directly and can 'see' the value being created and secondary ones which support the primary activities. The business can then identify how value is created and so focus on improving this through its performance measurement system (for example, the board report).

Another important feature of the value chain is the idea of value creation through a chain linking activities to each other. Therefore, there must be a flow of information between the different activities and across departmental boundaries. In performance management terms, this will affect the information systems which will have to ensure good communication across functional boundaries and also, the job descriptions and reporting hierarchies, as these will have to reflect activities rather than being purely contained within functional areas.

This chain will not stop at the organisation's boundaries as can be seen at Arkaig, where the relationship with suppliers (inbound logistics and procurement) is identified as an area of concern.

A specific area of concern at Arkaig is inbound and outbound logistics where there is an old warehousing and distribution information system. For a business such as Arkaig which aims to use technology innovatively, this could lead to inefficiencies. A state-of-the-art system would be integrated with the production and sales systems and would allow better stock control with fewer errors in picking inventory and reduced obsolescence while improved distribution could lead to faster delivery to customers with reduced costs of transportation.

The concern regarding after-sales service may be due to an inconsistency in having an area which generates a significant amount of revenue but which relates in reality to the failure of reliability of the business' products. It would be important to identify that customers' attitude to product reliability is not affected and that they see this service as necessary (maybe by benchmarking failure rates/machine downtime against competitors).

Although the chain shows human resources as a secondary activity, it is recognised as important to achieving the entrepreneurial culture at Arkaig. This culture can be realised through the reward system where employees are rewarded by share ownership or a share option scheme. Its effect can be measured through improved profitability and increased innovation.

2 (a) Subjectivity

Customers' own assessments of satisfaction are subjective. Different customers could buy the same goods in the same store and at the same time, but still score their satisfaction differently. Different customers may have different expectations of their visit to the store and will attach different levels of importance to different aspects of their visit. Some may place a high importance on being able to move around the store and access goods easily, whereas to others this may be unimportant and would not affect their satisfaction.

Another reason why the data may be misleading is that, when rating their satisfaction, customers may tend to use the middle scores and be reluctant to use the highest and lowest scores. This appears to be the case in the data given where in most quarters customers do not give the scores of 1 or 5.

Aggregated and mean data

The collection of data of a single measure of customer satisfaction does not indicate what aspect of their visit to the store customers are satisfied, or dissatisfied, with. Customers may consider the price, design and quality of the goods, the comfort and layout of the store or the friendliness and product knowledge of the staff when scoring their satisfaction. Without knowing which aspects of their visit customers are satisfied with, it will be hard to know what to do to improve customer satisfaction.

Using the mean score may also make the data hard to interpret. For example, in Quarter 1 20X4, 50% of the customers are completely satisfied (a score of 5) and 50% of the customer are completely dissatisfied (a score of 1). This may be due to an error in collecting or compiling the data, but the mean score of 3 indicates that, overall, customers are satisfied, whereas 50% of them are completely dissatisfied. The calculation of the median or modal score may be preferable because this reduces the distortion to mean scores caused by very high or low scores.

Incomplete data

The data may not represent the views of a wide range of customers. The scores are collected when customers are buying goods at the till. This does not reflect the views of the customers who were so dissatisfied that they did not buy anything.

The prizes offered in the draw to encourage customers to leave the satisfaction score may appeal differently to male and female customers and to customers of different ages. For example, tickets to amusement parks may appeal more to younger customers than to older ones. Using this data as if it represents a wide range of customers' views may be misleading and lead to incorrect decisions being taken.

Identifying trends

Identifying trends is one way of overcoming some of the problems of interpreting the customer data, but it may be difficult to identify trends. In a fashion retailer such as Veyatie, there may be seasonal and short-term or cyclical trends, which make it hard to interpret what the long-term trend is.

In the limited data given, there appears to be a seasonal trend where customer satisfaction is worse in Quarter 4 than in any other quarter in each year. Overall there seems to be a downward trend, with every quarter being worse than the same quarter in the previous year.

(b) Problems of implementing and using the balanced scorecard

Selecting measures

Veyatie's strategic objectives are to maximise shareholder wealth by increasing the number of retail stores, making customers completely satisfied, ensuring its stores are attractive and offering the widest range of fashion clothing in the market. Measures must be selected which are congruent with Veyatie's critical success factors (CSFs) and strategic objectives. Though it is unclear what the CSFs are, at least one of the strategic objectives, to increase the number of stores, is not reflected at all in the measures selected. The lack of a suitable measure for this objective could be the reason why Veyatie is unlikely to open new stores in the near future.

Measures must not be selected just because they are easy to measure. The human resources department already records the total number of employee training days, so this measure could have been selected just because the data is readily available.

The number of days spent on the different types of training is unclear. Though clearly important, staff health and safety training does not directly help Veyatie achieve its strategic objectives. It may simply reflect Veyatie's legal obligations and so would not help gain competitive advantage. It would be better to measure the days spent training staff to understand the range of products available and how to display them attractively in the store, as this directly relates to Veyatie's strategic objectives.

One of the benefits of the balanced scorecard approach is that it presents a holistic view of a business, covering financial and non-financial and internal and external factors. The measures selected do cover all four perspectives of the balanced scorecard, but do not seem to be well balanced as there are more measures in the financial perspective than in each of the other perspectives. Also, most of the measures are internally focused.

The bias towards financial measures may reflect the fact that the board has so far seen little need for non-financial indicators. Financial measures, however, are backwards looking and measure the results of actions taken in the past. It is non-financial factors, such as customer satisfaction, which drive future performance and which will enable Veyatie to achieve its strategic objectives.

Conflicting measures

When selecting measures to use in the balanced scorecard, care must be taken to select measures which do not conflict with each other. Otherwise, without further guidance, managers will not know which measure to focus on, or may simply ignore one measure and focus on another.

Several of the measures selected by the consultant may potentially conflict with one another. For example, in order to achieve a low stock out percentage, Veyatie may have to hold higher levels of inventory which may worsen inventory turnover. This could apply at the overall company level or at individual stores.

The financial measure of operating profit margins conflicts with some of the measures in the other perspectives. The total number of employee training days has been selected to measure the learning and innovation perspective. The cost of this training, at least in the short term, will reduce operating profit margins. Similarly, having a high market share may imply that Veyatie will have to be competitive on price, which will also lower operating profit margins.

Board commitment

If the introduction of the balanced scorecard approach is to be successful, the commitment of the board is essential. Without this, other managers in the business are unlikely to work hard to implement and use the approach.

The board is already sceptical about the benefits of the balanced scorecard. There is the danger that it may simply be abandoned if it is found difficult to use, as was proposed for the collection of customer satisfaction data which was found to be difficult to interpret. The board's apparent disregard of non-financial performance measures is also clearly inconsistent with a successful introduction of the balanced scorecard approach.

Collecting and interpreting data

Interpreting the measures used in the balanced scorecard may be difficult, for example, for qualitative data such as customer satisfaction, which Veyatie has already had difficulties in interpreting. A lack of expertise in interpreting this data, may lead to wrong decisions being made.

The collection and interpretation of the data for the balanced scorecard will take time and resources. There may be staff resistance to the change, though this may be overcome by training in the benefits and use of the balanced scorecard.

Veyatie's information systems are basic for a business of its size and focus just on the use of financial information. They will need to be replaced or upgraded in order to collect and process non-financial and external data required for the balanced scorecard. The cost of implementing and using the balanced scorecard should be compared to the benefits of doing so.

3 (a) Board

The board members are key players who have a high level of power and interest. It is important that they understand and approve of Daldorn's strategy. It is vital that they are kept motivated in order to drive Daldorn's performance. The VC has recently implemented a new reward system, where the board will receive a very large annual performance-related bonus for the achievement of targets on return on capital employed (ROCE).

ROCE may be an appropriate measure as it will be familiar to the board. It does have some drawbacks as a performance measure, for example, by discouraging investment in new assets. Alternative measures such as economic value added (EVA™) may overcome some of these drawbacks.

Employees

Employees have a high interest as they depend on the company for their income in an area of high unemployment. Most employees are relatively unskilled, and individually have low power, as they could be easily replaced. As Daldorn operates in a strict regulatory environment, employees' rights are likely to be legally protected which may increase their power.

Employees should be kept informed to prevent them joining forces with more powerful stakeholder groups, such as the regulators or trades unions. Training costs are probably not a suitable measure for the mostly low-skilled workforce, as the manufacturing process does not require a high level of skill. Measures relating to employee productivity may be more useful, because, for example, higher productivity may increase their job security.

Some employees' roles are more highly skilled and, for them, training costs will be a suitable measure of how well their skills are increased or maintained. The cost of training may not, however, indicate whether the training is appropriate or effective. A more precise measure, such as the percentage of employees achieving a particular relevant qualification or skill level, may be more appropriate.

Government and regulators

There are currently no measures relating to the government and regulators. As Daldorn operates in a strict regulatory environment, this seems inappropriate as breaches in regulations could lead to fines or loss of reputation.

The government and regulators have a high level of power but low interest. To prevent them becoming key players, they should be kept satisfied. This could be done by introducing measures relating to environmental performance, such as the level of toxic pollutants in the soil close to Daldorn's factory. This would allow Daldorn to take action to reduce the level of pollutants if these approached levels likely to breach environmental regulations.

- (b) The board now has very large performance-related bonuses. This will mean that they have a risk seeking attitude to risk, in order to maximise their bonuses. The board would use the 'maximax' decision rule, that is, they would choose the price which maximises the maximum contribution. This price is \$95,000 which would give a maximum contribution of \$55,100,000.

The main drawback of using the maximax decision rule is that it may encourage the board to take excessive risks, as opposed to their previous attitude which was too cautious. The maximax rule also does not take into account the probabilities of each outcome and these probabilities are difficult to determine.

- (c) The VC is an almost entirely risk neutral investor. The expected value (EV) approach is appropriate as they will accept the project with the highest expected NPV.

A problem with the EV approach is that it is a long run average which assumes a decision is repeated many times and is inappropriate for one-off decisions. The EV is unlikely to be the actual outcome of the project.

The VC has undertaken many similar projects and, hence, it would be appropriate to use EV. The estimations of the probabilities and the cost of capital are subjective and could be inaccurate. This would limit the effectiveness of the EV approach. The VC is experienced in estimating these probabilities, which would make the results of the calculation more reliable. The EV calculations for the two projects only consider two important exogenous variables. In practice, there are many different internal and external factors which could affect the NPV of the projects.

The calculations indicate that both projects have the same NPV of \$1,347 million (W1). As a risk neutral investor, the VC would be indifferent to which project to undertake.

The outcomes of project A have a slightly lower standard deviation (103) than those of project B (106). The spread of possible outcomes is therefore greater for project B, which means that it is riskier. The VC may therefore choose project A. Given that the NPV of the two projects are the same, further work such as sensitivity analysis, or an analysis of the external environment (PEST), could be done to help the VC make their choice.

W1 – Expected NPV of Project A*

		Tariff			
		High	Med	Low	Total
Demand	Low	48 (1,200 x 0.04)	170 (1,700 x 0.10)	111 (1,850 x 0.06)	329
	Med	100 (1,000 x 0.10)	375 (1,500 x 0.25)	240 (1,600 x 0.15)	715
	High	54 (900 x 0.06)	150 (1,000 x 0.15)	99 (1,100 x 0.09)	303
	Total	<u>202</u>	<u>695</u>	<u>450</u>	<u>1,347</u>

*Assuming the probabilities of the two variables are independent.

- 1 (i) 1 mark per point – must be based on scenario information
- Breaking down mission – up to 2 marks
- e.g. identify priority of objectives, pick out strategies
- Assessment of whether report meets mission – up to 11 marks
- e.g. Clear statement of inadequacy for mission, addressing elements of the mission, information for relevant decision-making, illustrated by relevant examples
- Other points – up to 4 marks
- e.g. Lack of information in the commentary, data overload, general presentation
- Maximum 11 marks
- (ii) Calculations:
- | | |
|---------------------------------------|--|
| Amortisation | 1 |
| Marketing capitalised | 1 |
| Research and development capitalised | 1 |
| Accounting depreciation | 1 (for replacing with economic depreciation) |
| Tax paid | 1 |
| Lost tax relief on interest | 1 |
| Capital employed | 1 (for opening figure) |
| Research and development asset | 1 |
| Marketing spend capitalised and w/off | 1 |
| WACC | 1 |
| EVA™ | 1 |
| Comments on result | 1 |
- Evaluation of EVA™ versus ROCE – up to 5 marks
- Maximum 15 marks
- (iii) Each level of the hierarchy – up to 4 marks
- e.g. explanation of the nature of the information needed, impact of planning and controlling activity and illustrative examples
- Maximum 10 marks
- (iv) General points on value chain implications and use – up to 3 marks
- Specific points relating to the areas of concern – 1 mark per relevant point
- Inbound logistics
 - Outbound logistics
 - After-sales service
 - Human resource management
- Maximum 10 marks
- Professional presentation: up to 4 marks
- Total 50 marks**

- 2 (a)** 1 mark per relevant point covering:
- subjectivity and customer perception
 - mean and aggregated data
 - incomplete data
 - trends and seasonal factors

Maximum 10 marks

- (b)** 1 mark per relevant point covering:
- problems of selecting measures
 - problems of measurement
 - the need for balance
 - problems of conflicting measures
 - need for board and management commitment
 - collecting and interpreting data
 - information system requirements
 - use of illustrative examples from the measures in Appendix 2

Maximum 15 marks

Total 25 marks

- 3 (a)** Each stakeholder – 1 mark for power/interest commentary and up to 3 marks for advice on performance measures
Maximum 9 marks

- (b)** Justification of maximax approach – 1 mark
Identifying the maximum contribution of \$55,100,000 – 1 mark
Stating price chosen – 1 mark
Drawbacks of decision rule – 2 marks

Maximum 5 marks

- (c)** Calculation of expected NPV for Project A – 3 marks
Comment on indifference or OFR result – 1 mark
Comment on standard deviation as indication of risk and influence on decision – up to 2 marks
Evaluation of EV method – up to 5 marks
Comment on further work – up to 2 marks

Maximum 11 marks

Total 25 marks