Answers

1   To: The board of Chiven Stores (Chiven)
From: An Accountant
Date: June 2018
Subject: Performance reporting and management issues

This report evaluates the current performance report used for the annual board review and suggests three additional important performance indicators. The performance measurement aspects of the use of the value chain to help to streamline the supply chain is considered. Finally, the impact, risks and challenges of Big Data for Chiven are discussed.

(i)   **Performance report for annual board review**

The basic role of the performance report is to allow the board to see if the mission is being achieved along with the subsidiary aims and strategically important initiatives set by the senior management.

The mission of Chiven breaks down into two parts:

–   becoming the largest clothing retailer in Beeland which is measured by Chiven's market share, but without an indication of the market leader, it is not possible to see if this is achieved; and

–   delivering exceptional value to its shareholders which is measured through a number of measures (dividends, EPS, economic value added and ROCE). However, it is often the growth of these indicators year-on-year which would be more useful to assess performance rather than the absolute amounts. Additionally, market average information would be important for investors so they can compare their investment in Chiven with others in their portfolios.

The subsidiary aims and initiatives based on the CEO's comments are:

–   maximising opportunities from new technology
–   increasing web presence
–   making use of 'Big Data' in relation to Chiven's web sales
–   simplifying the supply chain

There are no measures of web sales or the impact of technology on the activities of Chiven which would allow measurement of the first three aims. The basic data does not appear to be collected as sales are reported in total and not for stores and for the website separately.

The final aim does appear to be measured by looking at the number of suppliers and also the number of product lines sold (no. of suppliers x average no. of product lines per supplier). Reduction of these numbers would indicate a more streamlined supply chain. This would also indirectly improve the probability of stock obsolescence and so reduce inventory write-downs.

General comments about the current report

The current report is likely to confuse the board as it presents too many indicators and so overloads the board with information. This could be improved by reducing the number of indicators. For example, it should be considered if there is a need for both economic value added and ROCE in the report as they perform similar functions.

The report does not appear to group or appropriately prioritise the indicators presented. Suggested headings for an improved report might be:

–   shareholder value performance
–   market leadership
–   impact of new technology
–   efficiency in the supply chain

For example, the main company aim relating to shareholder value should appear at the top of the report and include dividends, EPS, economic value added and/or ROCE. As already noted, the growth of these indicators year-on-year would be more useful rather than the absolute amounts.

There is a lack of external information (especially competitor information) such as the market leading market share.

There is a lack of forward looking information which given the aim of innovation through new technology would be important. Expected growth of web sales in the market generally would allow measurement of Chiven's performance in this area.

There is a lack of a summary of property costs which could be especially useful for comparison with web operations.

There are a number of indicators which are about the detailed operation of the stores (such as average time between customer entry and employee greeting or average queueing time for customers). These are of a more operational nature and may be distracting and unnecessary in the board report, as it ought to focus on the strategic indicators.

However, the board may take the view that such customer-experience centred indicators are strategically important as they are commonly used in retail. In this case, there ought to be equivalent indicators for the web-based sales, for example, relating to number clicks or pages needed in order to make a web sale.

(ii) Three new performance measures for Chiven

There are three performance measures, which currently do not appear on the report, which would improve presentation of Chiven's results. As noted above, the current report contains many absolute figures and some ratios would simplify the work of interpreting these results.

Key issues in the current report and from the perspectives of running the physical stores are the number of employees and the floor space of the stores. Therefore, it is suggested that the revenue and operating profit per unit for each of these variables would be helpful and are also common indicators used in the retail trade.

	Total 2017	Total 2016
Revenue per employee ($'000)	65·0	66·1
Revenue per sq metre ($)	3,096·5	3,147·3
Operating profit ($m)	434·3	430·0
Operating profit per sq metre ($)	510·9	519·3

Operating profit per employee has not been calculated as the general body of employees are more concerned with sales rather than cost control and hence profits.

(iii) Streamlining the supply chain using the value chain

The value chain divides the value activities of a business into different types and then examines the links between these in order to more efficiently build value within the business.

The supply chain simplification may involve reducing the number of suppliers and making the chain more efficient. It impacts on three types of activity in the value chain: the main activity area is procurement (dealing with suppliers) but it could also include technology development (information systems) and inbound logistics. There may be other types of activity affected if these are outsourced.

The performance measures associated with this simplification are the number of suppliers and number of product lines supplied by each supplier (both areas are part of the existing reporting). They include the time taken to source new products and the revenue and profits obtained from these (new measures).

The information systems which would be involved would be those with contact to the suppliers obtaining product details and prices and also those liaising over delivery of these items. For example, these could be part of a just-in-time delivery system to reduce stock holding at Chiven.

(iv) The potential impact of Big Data for performance management at Chiven

Big Data refers to the very large amounts of data which are now available through the increased use of technology and can be used to develop predictive information about human (customer and supplier) behaviour.

There are three characteristics of Big Data: volume, velocity and variety.

The large volume of data obtained. This is best understood by considering the relevant information gathering systems for Chiven. In stores, loyalty cards being swiped at checkouts allow the details of all products purchased, the time, amount and method of payment used. On the website and on Chiven's social media pages, in addition to the data which could be collected as for stores, every page visited and every product examined or commented upon would be recorded. This information would require system hardware to store and retrieve it.

The velocity of Big Data refers to the short timescales for information developed to affect decisions. The information could be gathered in nearly real time and this might be necessary in order to react quickly to information about customers who are considering a purchase. For example, it would be much less effective to text a customer with price-comparison information after they have left the store.

The software must be present to allow the kind of data mining and predictive analysis required to perform these tasks.

Big Data is 'big' due to the variety of types of information collected. Chiven could be looking at transaction data and browsing activities, as already mentioned, but also more unusual data types such as social media reactions (text and photographs) and geographical information from customer phones.

This data is both structured and unstructured and these require different responses from the information recording and processing systems.

Risks and challenges

Systems which can record and process the volumes of data being produced are expensive, both the hardware and software. The costs are falling but as already noted, the volumes of data available are rising and Chiven's competitors will be active in this area too. It will be a process which requires large spending in order to catch up with and pass those competitors and then, constant ongoing spending to maintain an advantageous position.

The storage of personal information (e.g. about customers) is an active area of new laws and regulation. Breaking these rules can be punished both in the legal sense but also in a reputational sense resulting in lost business. In particular, theft or loss of personal data can lead to civil legal action and bad publicity.

The data obtained from qualitative sources (such as social media) can be imprecise or inaccurate and lead to inaccurate conclusions. Some data collected may be incorrect. This is sometimes referred to as the veracity problem. Also, in large volumes of data, some data may become out-of-date quickly especially about a customer's precise location and so constant monitoring of the database will be required to avoid this.

2 (a) Relevant

For the external information to be useful, it should be relevant to the needs of the users. The information in the quarterly spreadsheet contains both sales data and information on market trends in designs. All of this information may not be relevant for all of the departments to which it is circulated. For example, data on design trends may not be relevant to the production department using it to plan production capacity.

A unified database, integrating data from different sources, would make data more relevant to users by giving users only information and reports which are relevant to them and sharing data from all relevant departments. Users would not waste time interpreting data which is irrelevant to them.

Timely

For external information to be useful, it must be available when needed. This is particularly so in the fashion industry where designs change quickly and where competitors may offer short-term discounts. The external information at Luvij is only sent at the end of each quarter, which is likely to be too infrequent in the fast moving industry in which Luvij operates. Additionally, as the information is prepared by one staff member, there could be delays in producing it if they were on sick leave, for example.

A unified database would ensure that data was available instantly, especially if linked to retailers' own systems' real-time sales data. This should improve the speed of decision making.

Accurate

To be useful, information must be accurate. Entering large volumes of data into a complex spreadsheet is prone to error, as well as being time-consuming. Inaccurate data may lead to poor decision making. A unified database would process all data automatically with minimal human intervention, and would thus be less prone to inaccuracies. All departments would share identical data.

Communication

Though the spreadsheet of external information at least ensures that all departments have access to the same data, the large volume of data may be difficult to understand. Managers may be overloaded with data, much of which they do not need. A unified database would allow users access only to information which they need. This would be in an easy to use format, perhaps with the ability to drill down to more detailed information held in the database.

Emailing data to a large number of staff may mean that confidential or commercially sensitive information, such as on design trends, is shared with staff who do not require it. A unified database would restrict access to information, using passwords, only to staff who are authorised to receive it.

Cost

The cost of producing the external information should not exceed the benefits of doing so. Costs of the current system include not only the costs of employing the team to compile the information but also time spent collecting, processing or interpreting data which may be inaccurate, irrelevant or out of date.

Using a unified database would incur costs of buying, maintaining and developing the system, as well as staff training. An evaluation must be made whether these costs are justified by the benefits. Some adaptation of the existing system, such as increasing the frequency of reporting the information, or sending different sets of information to different departments, may be more cost effective.

Tutorial note: *The use of the characteristics of good information is one way this answer can be structured. There are many other approaches which would be acceptable.*

(b) Problems of performance measurement

Measuring the performance of the joint venture may require Luvij and Shirville to share confidential information, which they may be unwilling to do. Luvij's innovative designs for children's footwear and Shirville's knowledge of advanced production techniques are both likely to be commercially sensitive.

It is unclear exactly what is each of the parties' contributions to the joint venture. Luvij is providing innovative designs, and Shirville is providing advanced manufacturing machinery and production techniques. As each party is providing different things to the joint venture, it may be hard to measure the contribution, to profit for example, from each party.

Luvij and Shirville will have their own information systems. These may be incompatible, or it may be difficult or costly to integrate them. Each party may measure or collect information in a different way, which will mean information used to measure the performance of the joint venture is not prepared on a consistent basis.

Problems of performance management

Luvij's objective for the venture is to become the market leader in high-quality children's footwear. Shirville's objective is to utilise spare production capacity in a factory where the lease is due to expire in three years. As the parties have different

objectives, it may be hard to develop performance metrics for the joint venture. The share of the chosen market may be a key performance metric for Luvij, and return on capital employed may be appropriate for Shirville. The metrics chosen may conflict, and their relative importance may be unclear. This will make it difficult for managers to manage the joint venture according to each party's objectives.

Luvij's objectives for the joint venture are long term, whereas Shirville may choose to end the joint venture upon expiry of the factory lease in just three years. Establishing timescales for performance objectives may be difficult as each party has different time horizons for the venture.

Luvij is entering a new market and has already invested heavily in market research and product design. Shirville seems to have a much lower risk appetite, as it only wants to utilise spare capacity. Managing performance may be difficult because Luvij may wish to make decisions which involve a higher level of risk than Shirville may wish to accept.

The parties have may have different expectations of the level of quality of products arising from the joint venture. Luvij manufactures high-quality footwear and will want its range of children's footwear to be of a quality consistent with its women's footwear range. Shirville supplies supermarkets and high street stores, probably with lower quality products. Disagreement about acceptable levels of quality may reduce the performance of the joint venture.

3 (a)   In the context of VBM, value of a business is measured by discounting cash flows at the business's cost of capital. When investment returns exceed the cost of capital, value will be created for shareholders. When returns are lower than the cost of capital, value will be destroyed.

The VBM approach is to ensure that all activities and decisions in a business are undertaken so as to create value for shareholders. Currently, Bazeele's overall objective is to maintain ROCE at historic levels, but this does not necessarily create value for shareholders.

This is particularly so now that Bazeele has diversified into hiring large items of plant for use in major infrastructure projects. These projects last up to 10 years, so the time value of money is likely to be significant, as is the initial capital expenditure for the plant. Long-term hire agreements may give an acceptable ROCE, but may have a negative net present value, and hence destroy value for shareholders. The prediction of large increases in bank interest rates will increase Bazeele's cost of capital, and further reduce the net present value of long-term agreements.

Similarly, business unit and branch managers are given the objective of maintaining net profit margins. Thus, managers may avoid activities which reduce profits in the short term, but which have future long-term benefits and create value for shareholders, such as investment in staff training.

With VBM, decisions are taken to create value for shareholders by considering value drivers, which are any factors which affect the value of the business. Value drivers may be non-financial, such as the customer satisfaction which may have been improved by the postponed staff training. A VBM approach is, therefore, suitable for Bazeele as it will encourage creation of value for shareholders.

(b)   To adopt a VBM approach, Bazeele would need to use a different set of performance indicators, as ROCE and net profit margin do not necessarily create value for shareholders. Economic value added (EVA™) is a performance measure for shareholder value. Though more complex to calculate and more difficult to understand than the existing measures, EVA™ does encourage managers to make decisions, such as undertaking staff training, which have future long-term benefits. By encouraging managers to make investments which give a positive EVA™, value will be created for shareholders.

With VBM, managers would be given targets according to their areas of responsibility. For example, the board may have objectives to maximise value by making acquisitions which create value. Branch managers' objectives may be focused on non-financial value drivers such as customer satisfaction.

To identify value drivers, Bazeele will need good information which is accurate, reliable and timely, for example. It is unclear whether the current management information system is able to provide good information, but the CEO has said that information on customer satisfaction is not available. Resources, such as financial investment, time and training, may be needed to improve Bazeele's management information. Managers may resist the change in culture which would be required to adopt VBM; not least the CEO would need to set the 'tone at top' for what would be a disruptive and major change to Bazeele. However, the benefits of adopting VBM seem to outweigh the costs of doing so.

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(c) As the economic value added (EVA™) is $(13·1m), Bazeele has destroyed value for shareholders.

Calculation of net operating profit after tax (NOPAT)

	$m	$m
Net profit after tax		10·0
Add: depreciation on non-current assets	6·0	
Deduct: economic depreciation	(14·0)	
		(8·0)
Add: interest (accounted for in the WACC)	15·0	
Less: tax on interest ($15·0m x 20%)	(3·0)	
		12·0
Deduct: reduction in bad debt provision		(4·8)
Add: advertising for long-term benefit		0·6
NOPAT		9·8

Calculation of economic value of assets

	$m
Capital employed at the start of the year	250·0
Deduct: difference in accumulated depreciation	(16·0)
Add back: increase in bad debt provision	4·8
Economic value of assets	238·8

Calculation of EVA™

	$m
NOPAT	9·8
Deduct: capital charge ($238·8 x 9·6%) (W1)	(22·9)
EVA™	(13·1)

W1 – Weighted average cost of capital (WACC)

Cost of equity:	12·0%	
After tax cost of debt:	8·0%	(10% x (1 – 20%))
WACC:	9·6%	((40% x 12%) + (60% x 8·0%))

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4 (a) The extent to which the Argenti A Score indicates corporate failure in LP

The Argenti A Score assigns scores to management defects and accounting defects, which are effectively weaknesses which can lead to failure, mistakes, and symptoms. Symptoms are indications that the business is actually failing. The resulting score indicates whether or not LP is or is not at risk of corporate failure. Between these two extremes, there is a grey area where further analysis is required to reach a conclusion. An A Score of 25 or above indicates a high risk of corporate failure. As LP's A Score is 47, it is at high risk of failure.

Defects

The chief executive appears to be an autocrat, which is a management defect under the Argenti A Score model. LP prepared bids for work in areas it had little track record in, which was the strategy preferred by the chief executive, even though the rest of the board wanted to reduce the workforce to reduce operating gearing after the start of the recession. This suggests that the chief executive has a dominant influence over the rest of the board and that the board of directors is passive, which is another management defect.

The submission of the bid was done when most of the board members were on holiday, so in this respect too, the board was passive as it had no opportunity to discuss or review the bid. Similarly, the bid was made when the finance director was on long-term absence. An ineffective finance director is a management defect which increases the risk of corporate failure.

The fact that the amount of staff resources, and therefore cost, required to perform the work on the housing development was greater than anticipated was an accounting defect which increases the risk of failure.

Mistakes

LP undertook a large project in an area where it has little experience, and at a fixed fee. This was a high-risk venture, particularly as LP failed to set clear milestones for the project or put in place adequate performance management systems. This is a management mistake which, in the absence of suitable insurance cover, may mean LP is unable to meet any legal claims brought against it.

LP has an operational gearing ratio which is 50% higher than its nearest rival. Failing to address this high level of fixed cost, for example, by reducing the workforce for the duration of the recession, is also a management mistake which increases the risk of corporate failure.

Symptoms

Any symptoms of impending problems would indicate a high risk of corporate failure, even if LP's A Score were to be below the maximum acceptable score of 25. The low staff morale, and staff leaving the firm due to working long hours with unclear individual performance targets, is a symptom that the firm is at risk of failure.

(b) Mistakes

The failure of the big project for the design work for the housing development, and the high operational gearing, are management mistakes which increase the risk of corporate failure. To improve performance in these areas, LP needs effective performance management systems.

(1) Failure of the big project for the design work for the housing development

LP should identify critical success factors (CSFs) for improvement in performance. Big projects, especially those which are outside LP's usual activities should be fully scrutinised by the board, and the risks of the project thoroughly assessed. This would help prevent LP taking on projects for a fixed fee, where the costs of performing the work are poorly understood. The use of realistic budgets and clear project milestones would have helped identify that the major project was failing and allowed corrective action to be taken. Clear budgets and project milestones should be key performance measures to identify failure of the major project.

(2) Operational gearing

From the CSFs LP must develop key performance indicators (KPIs). The operating gearing is an obvious KPI to help reduce the firm's high operating gearing. Cash forecasts would also help to identify and correct high operating gearing. Performance targets such as these should be clearly communicated and linked to employee rewards.

Symptoms

Clear milestones and performance targets were not set for the housing development project and the project has fallen behind schedule. This has led to low staff morale and to staff leaving the firm. All of these are symptoms of corporate failure.

Performance against the targets should be regularly monitored, for example, by using staff appraisals and surveys to monitor staff satisfaction. This could indicate where additional training or support is required.

Measuring staff turnover would help measure this symptom of corporate failure so that LP could try to identify why staff were leaving.

(c) Advantages of using qualitative models in predicting corporate failure

The subjectivity of the A Score can be an advantage over quantitative indicators of corporate failure, as it allows the person calculating the A Score to use their own professional judgement in considering individual circumstances.

It also recognises factors which have been observed in failing companies and which often can be seen in organisations before they reach a terminal state.

The A Score model incorporates financial (such as the operating gearing ratio), and non-financial factors, which give a more holistic assessment of whether failure is likely than just looking at financial or non-financial factors alone.

Disadvantages of using qualitative models in predicting corporate failure

Calculating the A Score is subjective and requires experience and professional judgement, for example, in determining whether LP's board is passive. In reality, passive will be on a scale rather than just passive or not, which also makes it difficult to compare the score between organisations.

The A Score focuses on internal factors, which limits its usefulness. The economic recession has had a serious impact on LP, which calculating the A Score alone would not consider. Further analysis of the external environment, such as using a PEST analysis, or calculation of competitors' A Scores, would consider external factors in determining whether LP is at risk of corporate failure.

A limitation of the A Score model is that it is only a snapshot at a particular time and does not indicate when corporate failure may occur. Defects and management mistakes may take a long time before they lead to corporate failure. In LP, corporate failure may occur if it is subject to legal action for the delay of the housing project. Conversely, the recession may end and LP may no longer be at risk.

The fact that the A Score does not give a definitive indication of whether failure will happen may mean inappropriate decisions are taken as a result of the analysis. It must be considered whether the time and cost in calculating the score are justified by the benefit of doing so. The results of the A Score may be inconclusive and indicate that the subject is in the 'grey area'. This will require yet further analysis before a conclusion can be reached. This does not appear to apply to LP which is currently clearly at risk of corporate failure using the A Score model.

1 **(i)** Identifying the aims – up to 4 marks
      Picking out the topics and prioritising these

   Identifying if the aims are measured – up to 10 marks

   General comments – up to 10 marks

      E.g. repetition of measures, grouping, external info, forward looking info, focus on the strategic not operational, need for web measures as well as store based measures. Marks for general points and also specific examples.

   Maximum 20 marks

(ii) KPIs
      Justification in context – 1 mark each
      Calculations – up to 5 marks
      Other relevant points up to 3 marks

   Maximum 8 marks

(iii) Defining the value chain – 1 mark
      Identifying the activity types affected – up to 2 marks
      Measurement systems – up to 3 marks
      Information systems – up to 3 marks

   Maximum 7 marks

(iv) Definition – 1 mark
      Impact on performance management using volume, velocity and variety to discuss examples for Chiven – up to 9 marks
      Risks and challenges – up to 6 marks

   Maximum 11 marks

Professional presentation: up to 4 marks

Total 50 marks

2 **(a)** 1 mark per point:
      Limitations on usefulness of the external data – up to 8 marks
      Evaluation of the use of a unified database – up to 8 marks

   Maximum 15 marks

(b) 1 mark per point:
      Problems of performance measurement – up to 6 marks
      Problems of performance management – up to 6 marks

   Maximum 10 marks

Total 25 marks

3 (a) 1 mark per point:
General explanation/evaluation of VBM – up to 2 marks
Application to Bazeele – up to 4 marks
Recommendation – 1 mark

Maximum 7 marks

(b) 1 mark per point:
Changes required on adoption of VBM – up to 7 marks

Maximum 7 marks

(c) Calculation of EVA™ WACC – 1 mark
NOPAT adjustments:
Depreciation – 1 mark
Economic depreciation – 1 mark
Interest – 1 mark
Tax on interest – 1 mark
Reduction in bad debt provision – 1 mark
Advertising – 1 mark

Capital adjustments:
Difference in accumulated depreciation – 1 mark
Add back: increase in bad debt provision – 1 mark
Calculation of EVA™ – 1 mark
Conclusion on the creation or destruction of value – 1 mark

Maximum 11 marks

Total 25 marks

4 (a) Explaining the model – up to 2 marks
Conclusion based on the score given – 1 mark
1 mark per point, which must be in the correct category:
    Defects – up to 5 marks
    Mistakes – up to 4 marks
    Symptoms – up to 3 marks

Maximum 12 marks

(b) 1 mark per point:
Failure of big project (mistake) – up to 3 marks
Operational gearing (mistake) – up to 3 marks
Symptoms – up to 3 marks

Maximum 7 marks

(c) 1 mark per point:
Advantages of qualitative models in indicating corporate failure – up to 4 marks
Disadvantages of qualitative models in indicating corporate failure – up to 4 marks

Maximum 6 marks

Total 25 marks