Answers

1 To: J Sum
From: A Accountant
Date: 8 June 2012
Subject: Performance reporting and management at Metis

This report assesses the existing performance reporting at Metis and suggests improvements and new measures of performance in the business. Additionally, it considers the impact that performance measurement has on management activity.

(i) Current performance report

The existing performance report has some good elements and many weaknesses. The current report shows clearly the calculation of profit and the profit margin from the business and shows how this has changed over the past three years along with a forecast of the next year. There is also a breakdown of the performance in the last two quarters which gives a snapshot of more immediate performance. The report breaks revenue and costs into product categories and so might allow a review of selling and procurement activities.

However, there are a number of weaknesses with the existing report. Firstly, the report only clearly answers the question 'what was the profit?' The owners have indicated that their aim is to 'make money' and it is possible that making money and profit may not be entirely compatible in the short term. For example, there are no cash measures of performance on the report. These are likely to assume greater importance given the planned improvements and any long-term expansion of the business. The owners might wish to consider refining their long-term goal in order to make it a more precise statement.

The current report does not present its information clearly. There is too much unnecessary information (e.g. the detail on operating costs). The style of presentation could easily be confusing to a non-accountant as it shows a large table of numbers with few clear highlights. The use of more percentage figures rather than absolute numbers may help (e.g. gross margins, change on comparative period percentages). Also, the numbers are given to the last $ where it would probably be sufficient to work in thousands of dollars

The current report does not break down conveniently according to the functional areas over which each owner-manager has control. It summarises the overall build up of profit but, for example, it cannot be easily used to identify performance of the service staff except indirectly through growth in total revenue. In order to improve this aspect of the report, the critical success factors associated with each functional area will need to be identified and then suitable performance measures chosen. For example, Sheila's area is customer-facing and so a measure of customer satisfaction based on number of complaints received or changes over time in average scores in customer surveys would be helpful. Bert's area is kitchen management and so staff efficiency (measured by number of meals produced per staff hour) and wastage control (measured by gross margin) may be critical factors. In your own financial and legal areas, costs are mostly fixed and so absolute measures such as the cost of capital may be helpful. In the area of procurement, purchasing the appropriate quality of food and drink for the lowest price is critical and so a gross margin for each product category would aid management.

The timescales reported in the current format are possibly not helpful for quarterly meetings. The existing report shows evidence of seasonality in the large change between Q3 and Q4 performance (42% fall in revenue). The figures for two years ago may not be particularly relevant to current market conditions and will not reflect recent management initiatives. It may be useful to consider reporting the last quarter's monthly performance giving comparative figures from the previous year and drop the use of the detailed 2010 and 2011 figures in favour of just supplying net profit figures for those years in order to give an overview of long-term performance.

The current report does not give much benchmark data to allow comparisons in order to better understand the results. It would be helpful to have budget figures for internal comparison and competitor figures for an external comparison of performance. Such external data is often difficult to obtain although membership of the local trade association may give access to a suitably anonymised database provided Metis is willing to share its data on the same basis.

Finally, the current document only reports financial performance. I have already indicted that this may not be sufficient to capture the critical factors that drive the business. A restaurant will be judged on the service and quality of its products as well as its pricing. It would be an improvement to include this style of reporting although gathering reliable data on these non-financial areas is more demanding.

(**Tutor note:** *It would be possible to also base a criticism on a framework such as Fitzgerald et al's 'Results and determinants' or the Balanced Scorecard.*)

(ii) Summary of results:

Net profit after tax (2012)	$163,046
EVA™ (2012)	$108,626
Return on capital employed (2012)	44%
Return on Equity (2012)	65%
NPV over the three years of the business	$(78,987)
MIRR over the three years of the business	6·75%

The business is currently performing well generating healthy after tax profit for the owners and a positive EVA™, which implies the business is adding value for the shareholders.

The NPV and MIRR measures do not look healthy as normally a business would seek only investments that returned positive NPV values or a MIRR above the cost of capital (12·5% for Metis). However, these are measures that take account of the first three years trading and so include the understandably weak opening year's performance when the business was building up. They may provide a long-term view of historic performance but are less helpful in judging the current state of the business. You may want to view the goal of reaching nil NPV as a long-term target for the business so at least meeting its cost of capital (in fact it looks like the business will achieve this in the next year).

(iii) 'What gets measured, gets done'

The idea behind the quote, 'What gets measured, gets done' is that the staff and management will only react to the performance measures chosen by the owners. In other words, poor performance reporting can lead to inefficient management. If an area is not measured then there is a danger that it is not efficiently managed and equally, if an area is measured then there is the danger that it is over-managed. For example, the current report has annual revenue and the previous two quarters' revenues reported, therefore, it might promote the idea that quarterly growth is critical. However, it is likely that the business is seasonal and so it would be more helpful to have a comparison of each quarter with the equivalent quarter in the previous year. Otherwise, the owners may react to a fall in revenue shown when this is not controllable.

Further examples of the quote are given in the areas that the owners are complaining about in their meetings. Sheila has complained that the staff are not smiling enough but there is no measure of customer satisfaction available in the current report and so no way to quantify or substantiate this concern. This has resulted in Bert's dismissive comment.

However, the control of electricity costs can be seen in the slowing growth of the utilities cost on the current report (the annual increase has fallen from 3% to 0·5% pa in the last two years) and so the effectiveness of Sheila's actions can be demonstrated although the use of monetary totals and lack of these trend figures would mean that this is not immediately obvious. Bert's criticism of her work can at least be partially answered and so she can be encouraged to continue with these ideas.

Bert has complained that there is too much wastage of food and that he is devoting considerable staff time on instinct without solid information. The problem is additionally complicated as it may be caused by purchasing lower cost but poor quality produce or it could be caused by how the produce is handled and stored in the kitchen. The first cause is an issue for procurement, which is not Bert's area of responsibility, and so any actions of his are unlikely to address the problem. The report needs to identify changes in gross margin which might indicate changes in procurement policy and it should also have a measure of wastage such as the average actual cost of food per dish served compared to a budgeted cost of food per dish.

The quote may not be entirely applicable as management may still take action out of other motivations such as the results from training or personal motivation to demonstrate their own skills. However, the quote is intended to bring into focus the fact that many people will tend to focus effort on the explicit measures of their performance.

In conclusion, as Metis grows it will need to refine its performance reporting so that management become more efficient in focusing their work on areas which will achieve the business' objectives.

Workings:

	Year to 31 Mar		
	Actual 2010	Actual 2011	Actual 2012
PBIT	31,200	199,579	262,322
Interest	29,400	29,400	29,400
PBT	1,800	170,179	232,922
Tax	540	51,054	69,877
PAT	1,260	119,125	163,046
Cashflows			
PBIT	31,200	199,579	262,322
Tax on operating cashflows	9,360	59,874	78,697
Depreciation	120,000	120,000	120,000
Free cashflows	141,840	259,705	303,626

NPV:
Consider the business as a three-year project to date based on an initial investment of $600,000

		2010	2011	2012	
PV as at 2012	at 12·5%	179,516	292,169	303,626	gives a total of $775,310

PV of initial investment at 2012 600,000 x (1 + 12·5%)^3 = $854,297

Hence NPV at 2012 = $–78,987

MIRR
PV of investment at start of business $600,000

Terminal values of returns from the project to date (2012)

	2010	2011	2012	Total
at 4·5%	154,892	271,392	303,626	729,910

MIRR is discount rate at which the terminal value of the return phase equates to the present value of the investment phase.

So 600,000 = 729,910 x 1/(1 + MIRR)^3

MIRR = 6·75%

		Yr 2012
EVA™	= NOPAT – Capital employed x WACC =	$108,626
where	NOPAT $183,626	
	PBIT x (1 – tax rate)	

(Capital employed is $600,000 at year start and year end as there are no retained profits or changes in funding.)

ROCE	43·72%
PBIT/Capital employed	
ROE	65·22%
PAT/Equity invested	

Notes:
- Accounting depreciation has been assumed to be equal to economic depreciation in the calculation of NOPAT.
- Although marketing expenditure can generate a long-term intangible asset and so could be considered capital rather than revenue expenditure in the EVA™ calculation and adjusted for accordingly. However, a more prudent approach has been taken to treat it as a period cost in these calculations since it is stated to be only for short-term purposes.
- The NPV is taken to be for the present value (2012). It could be taken as at the start of the project (then a previous value is calculated as at the start of the project).

[**Tutor note:**

The NPV calculation if done for the start of project, would read –

NPV:
Consider the business as a three-year project to date based on an initial investment of $600,000

	2010	*2011*	*2012*	
PV as at start of project at 12·5%	*126,080*	*205,199*	*213,246*	*gives a total of $544,525*

Hence NPV at start of project = $–55,475

This yields similar comments as in the model solution.]

2 **(a)** The operating margin shows that overall Amal is being run efficiently. Also, the margin is relatively high which is to be expected as Amal has a strategy of differentiation.

The load factor shows the utilisation of the expensive asset base of the companies and here, Cheapo is performing well ahead of its rivals. This may be due to its pricing policy but it may be possible for Amal to review its own pricing policy along the lines of Cheapo in order to boost the load factor. The danger of such a change to pricing policy is that it undermines the overall strategy of Amal as a differentiator. So, it may be that load factor is a secondary rather than primary measure of performance.

The recent staff problems motivate looking at a measure of staff performance and workload. Amal is performing well ahead of Kayland Air in generating revenue per staff member although it is much lower than Cheapo. This may be due to the power of the staff in the publicly-owned Kayland Air and Cheapo offering a basic service with their use of outsourced staff.

Finally, the fuel costs are causing concern in the industry and it is noticeable that Cheapo is managing its fuel bills more efficiently than either of the others. Amal should investigate possible savings by examining where Cheapo is sourcing its fuel, what quality of fuel it uses and whether its aircraft are more fuel-efficient. (Note that fuel cost per seat kilometre has been used rather than fuel cost per passenger kilometre since this reflects the fuel efficiency of the aircraft and does not confuse this with the ability to fill the aircraft with passengers.)

Working:

Data for the most recent calendar year

		Amal	Kayland Air	Cheapo Air
Passengers ('000s)		23,649	38,272	35,624
Passenger kilometres (millions)		79,618	82,554	40,973
Revenue	$m	5,430	7,350	2,170
Costs				
Fuel	$m	1,480	1,823	535
Staff	$m	1,560	2,998	238
Staff numbers		32,501	56,065	5,372
Operating profit	$m	630	54	127
Number of aircraft		182	361	143
Average aircraft size (seats)		195	163	125
Seat kilometres (millions)		100,654	105,974	46,934
Load factor (seat occupancy)		79·1%	77·9%	87·3%
Operating profit margin		11·6%	0·7%	5·9%
Revenue/staff member	($'000s)	167	131	404
Fuel/seat km	$	0·015	0·017	0·011

(**Note:** *There is no need to represent the question data in the solution, it is given here for clarity. Credit is given for other relevant calculations as it is not feasible to give an exhaustive list.*)

(b) The performance prism has five facets which attempt to unify various methods of performance management into a coherent whole. The facets are stakeholder satisfaction which then depends upon the other four facets of stakeholder contribution, strategies, processes and capabilities. By taking a wider view and focusing on stakeholders, the prism model may help to avoid performance measurement that is driven by internally-derived strategies.

Stakeholder satisfaction involves the identification of the important stakeholder groups and an understanding of their wants and needs. At Amal, the key stakeholders appear to be:

- Finance providers (shareholders and lenders) who will want adequate returns for the risks that they take in allowing management to use their funds;
- Customers who want the delivery of the premium service promised but who may resist the price margins that accompany that product;
- Employees who want higher wages, job security and better working conditions; and
- Suppliers who are also key to delivering the new aircraft and the new website.

The stakeholder contributions identify what the organisation wants from its stakeholders.

- Amal will want shareholders (and lenders) to provide capital (possibly for the new aircraft) at a market price for the risk taken and be committed to this investment for the time it takes to pay off;
- Amal will want customers who are loyal and profitable;
- Amal will want suppliers who are reliable (delivering on time is an issue for the website development) and support their products with on-going technical improvements (for example, the new engine technology);
- Amal will need the commitment and cooperation of the employees if it is to deliver a premium standard service while also, cutting costs.

The strategies are the paths that the organisation will follow in order to deliver stakeholder satisfaction. Amal has set a target of reduction of overall costs by 14%. Two major categories are fuel and staff costs and part (a) has indicated possible routes to improvement in these areas indicated by competitor activity. A gap analysis might yield ideas for further improvement by identifying how much can be expected to be achieved through the existing squeeze on fuel and staff costs. An identification of the cost drivers and an activity-based cost exercise would give a clearer understanding of general overhead costs. It is clear that there may be a limit to the pressure that the staff will take before resorting to further costly strike action. Although it will be important to measure the short term costs of industrial disputes with the long term benefit to profitability of reducing the fixed staff cost base.

The processes are required if the strategies are to be executed. At Amal, it appears that the website project aims to streamline existing processes. Cost per seat booked should fall as a result of this project. The project itself should be monitored against budget as cost overruns are more likely when the project fails to meet its timetable. A larger exercise of business process reengineering may be beneficial as large IT projects often offer the opportunity to remove redundant processes and redesign the remaining ones. This would be a revolutionary programme of change but one that might well suit Amal as the staff appear to have realised that there will be major change.

The capabilities are what are required in order to operate and improve the processes. The capabilities can be identified by an audit of the strengths and weaknesses of the business. This can be achieved by considering the value chain and understanding how value is generated by the linking of processes and skills in the business. It can also be achieved by using

the McKinsey 7s model which identifies the hard elements as the strategy, organisational structure and systems alongside the soft elements of shared values, style, staff and skills. Examples of performance measures in these areas would reflect the new aircraft investment (e.g. return on new capital employed).

3 (a) There are a number of broad ways in which the implementation of Six Sigma improves quality in an organisation. These include:

- an increased focus on customers illustrated at Thebe by the strategic need to improve customer service and the project objective of improving customers' bills;
- management decision-making being driven by data and facts not intuitions such as the use of customer satisfaction scores or numbers of complaints as key performance measures;
- the identification of business processes' improvement as key to success which is exemplified by the mapping of the processes and then their redesign;
- the proactive involvement of management such as the CEO championing the billing improvement project. Six Sigma depends on leadership which is provided by various experts who interact with the various Six Sigma projects which will be improving processes in the organisation;
- the increased profile of quality issues and the increased knowledge of quality management that comes from the use of different layers of trained experts in the project. There are green belts who will often be line managers, who in additional to their normal work will lead Six Sigma projects. There are black belts who will exclusively specialise on Six Sigma and lead specific projects and there are master black belts who are Six Sigma experts in statistical methods who consult across several Six Sigma projects; and
- Six Sigma implementation requires collaboration across functional and divisional boundaries so bringing the focus of the whole organisation to quality issues as illustrated at Thebe by the involvement of all the business units in the billing project.

(b) The DMAIC process is as follows:

1. Define customer requirements/problem
   Here the problem is the complaints on bills that result in customer dissatisfaction and delayed revenue receipt or potential loss of business. Customer requirements can be divided into those that are the minimum that is acceptable (e.g. billing errors are corrected), those that improve the customer's service experience (e.g. billing corrections completed swiftly) and those that go beyond the customer's expectations (e.g. offering additional services as compensation). The customers could be surveyed in order to identify if different customers have different needs (e.g. based on the three business units).
2. Measure existing performance
   The number of customer complaints or scores below a threshold level on customer surveys will have to be measured and targets set (e.g. number of complaints per million bills issued or average time to resolve complaints). Measurement should focus on areas where the customer will value improvement. A key issue at this point is ensuring that the measurement system is reliable and this may require redesign of the existing customer survey forms/procedures.
3. Analyse the existing process
   This step involves data collection in order to identify the root causes of problems and then techniques such as Pareto analysis will improve the focus of action on the issues that give raise to the majority of complaints based on the idea that 20% of the categories of causes will give rise to 80% of the complaints. For example, the analysis at Thebe could look at causes of delays in complaint resolution such as staff motivation or processing time for rebilling.
4. Improve the process
   This is the implementation stage for any changes that are suggested and it is important at this stage to check on the cost and resource consequences of any suggested improvement.
5. Control the process
   The improvement project will be monitored after implementation to ensure that the benefits of reduced complaints are maintained. This can be done through exception reporting if complaint numbers begin to exceed the tolerance set or continued monitoring of the time taken to resolve complaints. The general performance measure of the success of the project will be the retention of customers which is commonly measured through the churn rate of customers (percentage of existing customers lost per year).

4 (a) Benchmarking process

The benchmarking process is often described using seven steps. The following are the steps with the current state of the exercise:

1. Set objectives and decide the areas to benchmark
   GU has set the objective of improving efficiency and is benchmarking all of its administration operations relating to teaching and research.
2. Identify key performance drivers and indicators
   The performance drivers have been provided and the indicators are based on the activity per driver. The drivers might be improved by distinguishing between teaching staff and administrative staff.

3. Select organisations for benchmarking comparison
   The government selected the three largest universities for benchmarking which excludes five other smaller universities. This can be justified if the large universities cover similar teaching and research areas while the smaller ones are narrower in focus (for example science and engineering subjects only). However, it may be that there are examples of good practice in university administration that will be missed as a result of restricting the exercise. It might be sensible to include foreign universities in the exercise. Differences in the mix of subjects researched and taught might also affect the results (e.g. managing teaching facilities in engineering and law will be different).

4. Measure performance of all organisations involved in benchmarking
   The basic data has been gathered as required by government. This step would normally be more complex in a private sector situation as commercial secrecy would hinder the sharing of information.

5. Compare performances
   This is the stage that has been reached. See answer to part (b) for results.

6. Specify improvement projects
   The results of the comparison should lead to identification of areas for improvement. If GU is not demonstrating leading performance then it should send staff to the top performer to identify their best practice processes and devise projects to implement these at GU.

7. Implement and monitor improvements
   Management should perform a post-project review in order to identify if the improvement has achieved or exceeded its goals and consider lessons that have been learned from the project.

(b) The benchmarking has been completed as follows:

	GU $	AU $	BU $
Research			
contract management	78	87	97
laboratory management	226	257	281
Teaching facilities management	951	1,197	920
Student support services	71	89	73
Teachers support services	506	532	544
Accounting	204	204	197
Human resources	156	156	191
IT management	817	803	737
General services	2,153	2,088	2,286

Research categories are considered per $000 of contract value supported.
Teaching facilities and student support are considered per student.
Other categories are considered per staff member.

From the results, it can be seen that GU is best at controlling costs associated with research contracts and it has the highest research funding ($185m). This may indicate that the government monitors such cost control and that GU should ensure its continued good practice in this area. AU spends most per student on its teaching facilities and student support although it has the smallest number of students. It might be expected that this would lead to higher student enrolment which may imply that student enrolment is not significantly dependent on these factors. However, lower drop out rates and higher student pass rates and future success in gaining employment may reflect the more expensive teaching environment at AU. These quality measures are not being reflected in the benchmarking exercise.

In accounting services, all the universities perform broadly in line. BU has achieved a small 3·5% advantage over the others.

In human resources management, BU is 22% more costly which is surprising given the larger staff numbers at BU over which to spread such a central cost.

In IT management, there is some variation of performance with BU costs being 10% lower than GU's. These variations may well be due to the subjects being taught (for example, universities that are more orientated to science and technology will probably demand larger computing resources).

In general services, all the universities perform broadly in line. AU has achieved a small 3% advantage over GU.

It is necessary to give a warning about the difficulty of comparing the performance of the universities due to differences in location and the mix of subjects taught and researched.

(**Tutor note:** *the comments on accounting and general services are not significant and so not necessary in a good answer. They are included for completeness.*)

5 Performance measurement problems at Callisto

In a virtual organisation such as Callisto, performance measurement can cause difficulties due to the fact that key players in the business processes and in the supply chain are not 'on site'. Callisto has the problem of collecting and monitoring data about its employees working from home and the outsourcing partners.

At Callisto, there is a reliance placed on information technology for handling these remote contacts. Collecting and monitoring performance should therefore be done automatically as far as possible. A large database would be required that can be automatically updated from the activities of the remote staff and suppliers. This will require the staff and supplier systems to be compatible.

The employees can be required to use software supplied by Callisto and in fact, at Callisto, they use the internet to log in remotely to Callisto's common systems. Although this solution requires expenditure on hardware and software, it is within the control of Callisto's management. Even with reviews of system logs to identify the hours that staff spend logged in to the systems, there are still the difficulty of measuring staff outputs in order to ensure their productivity. These outputs must be clearly defined by Callisto's managers, otherwise there will be disputes between staff and management. One further outstanding issue is the need to ensure that such communication is over properly secured communication channels, especially if it contains customer or financial data.

The strategic partners, such as RLR, will have their own systems. A problem for Callisto is that there is disagreement over the measurement of the key SLAs. In order to resolve such disputes, lengthy reconciliations between Callisto's and RLR's systems will have to be undertaken otherwise there are no grounds for enforcement of the SLAs and the SLAs represent Callisto's key control over the relationship. The solution would be for the partners to agree a standard reporting format for all data that relates to the SLAs which would remove the need for such reconciliations.

Finally, there is the problem that Callisto and the partner organisation may have differing objectives – the obvious conflict over price between supplier and customer being one. However, at Callisto, this is being addressed by the use of detailed SLAs which both organisations can use to develop performance measures such as inventory levels and delivery times.

Performance management problems at Callisto

The performance management of employees is complicated due to the inability of management to 'look over their shoulder' since they are not present in the same building. However, employees will enjoy the advantages of home-working, such as lower commuting times, more contact with family and greater flexibility in working hours. The disadvantages are the difficulties in measuring outputs mentioned above and ensuring motivation and commitment. The motivation and commitment can be addressed through suitable reward schemes which would have to be tied to agreed outputs and targets for each employee. Work could be divided into projects where the outputs are more easily identified and pay and bonuses related to these.

The performance management issues of handling the strategic partners include:

- confidentiality where the partners will have access to commercially sensitive information about customers' locations and suppliers' names and lead times;
- reliability where the partner is supplying a business critical role (as for RLR with Callisto) such that it would take considerable time to replace such a relationship and affect customer service while this happened;
- relationship management where the interface between the organisations can create wasteful activity if there is not an atmosphere of trust. At Callisto, this is illustrated by the problem of reconciliation of performance data;
- profit sharing where given the collaborative nature of the relationship and the difficulty of breaking it combine to imply that it will be in the interest of both parties to negotiate a contract that is motivating and profitable for both sides. For Callisto, the business aim is to increase volume and this will require customer loyalty so the quality of service is important.

1 **(i)** Strengths of current reporting: 1 mark per point up to 2 marks
Weaknesses of current reporting: 1 mark per point up to a maximum of 12 marks
- Measuring overall objective
- Data overload
- Use of absolute numbers
- Breakdown by functional area
- Timescales used in report
- Use of NFPIs
- Other acceptable points

Maximum of 12 marks

(ii) Calculations:

NPV	
Deriving free cashflows	3
Calculating NPV	2
EVA™	
NOPAT	1
EVA™ answer	1
MIRR	
PV of investment	0·5
TV of returns	1·5
MIRR answer	1
ROCE	1
ROE	
Tax/PAT	1
ROE	1

Credit was also given for residual income and gross margin calculations
Commentary: 1 mark per point up to 4 marks
Maximum of 14 marks

(iii) General comment on the meaning of the quote up to 3 marks
Specific examples appropriate to Metis up to 3 marks per example; total to 10 marks
(Examples can be illustrations of how management responds to measures or the problems that arise from the lack of measures in the performance report.)
Maximum of 10 marks

Professional marks for the format, style and structure of the discussion of the answer. 4 marks

Total 40 marks

2 **(a)** Calculations up to 6 marks. 1 mark for each meaningful indicator, 2 marks for load factor or similar measure of capacity utilisation.
Commentary: 1 mark per point up to max of 8.
Maximum of 12 marks

(b) General description and overall benefits of the model up to 2 marks
Up to 4 marks per section dealing with each of the five facets. 1 mark per point.
Maximum of 14 marks

Total 26 marks

3 **(a)** Up to 3 marks per theme.
Maximum of 8 marks

(b) Up to 3 marks per stage of the process with 1 mark for a general description and 2 marks for application to the scenario.
Maximum of 9 marks

Total 17 marks

4 **(a)** 1 mark per point up to 8 marks. (Note only 2 marks are available for identifying the headings in the process.)

(b) Up to 6 marks for calculations applying the appropriate drivers.
Up to 6 marks for commenting on the results.
Maximum of 9 marks

Total 17 marks

5 Performance measurement
Up to 2 marks per point made.
For example on:
- geographical distance
- reliance on IT
- difference between employees and strategic partners
- technology solutions
- use of SLAs

Maximum of 10 marks

Performance management
1 mark per valid point made
- Employees up to 6 marks
- Strategic partners up to 7 marks

Maximum of 10 marks

Total 17 marks