Answers

Tutorial note: *the financial ratios given in the following analysis have been calculated using definitions specified in* Accounting and Finance *by Peter Atrill and Eddie McLaney. Correct, acceptable alternative ratio calculations will be given credit.*

1 (a) The following financial analysis focuses on the profitability and gearing of Hammond Shoes manufacturing division.

Profitability: The effect of cheap imports appears to be reflected in the profitability of the company. Revenues and gross profit have both fallen significantly in the four years of data given in Figure 1. In 2007 the company reported a gross profit margin of 23·5% and a net profit margin of 8·2%. This has declined steadily over the period under consideration. The figures for 2009 were 20·0% and 4·7% and for 2011, 17·9% and 2·9% respectively. There has been a general failure to keep costs under control over this period. Sales have fallen by $150m in four years – almost an 18% decrease. In contrast the cost of sales has decreased by only $75m, a decrease of about 11·5%. This probably reflects the problem of reducing labour to react to lower demand, particularly in a country where generous redundancy payments are enforced by law and in an organisation which sees the employment of local labour as one of its objectives. The Return on Capital Employed (ROCE) has dropped substantially, from 24·14% in 2007 to 6·45% in 2011.

Gearing: The capital structure of the company has changed significantly in the last four years and this is probably of great concern to the family who are averse to risk and borrowing. Long-term borrowings have increased dramatically and retained earnings are falling, reflecting higher dividends being taken by the family. Traditionally, the company has been very low geared, reflecting the social values of the family. The gearing ratio was only 6·9% in 2007, but has risen to over 22·5% in 2011. During this period, retained profit has fallen and an increasing number of long-term loans have been taken out to finance activities. Overall, gearing may still appear quite low and indeed this is probably the view of the senior management of the company. However, the speed of these funding changes is a concern, particularly when trade receivables and trade payables are considered.

One of the values held by the family is the importance of paying suppliers on time. In Arnland, goods are normally supplied on 30 days credit. In 2007, Hammond Shoes, on average, exceeded this target, paying on 28 days. However by 2009 this value had risen to 43 days and by 2011 to 63 days. During the same period, trade receivables, from the selected data provided, appear to have come down slightly (from 38·65 days in 2007 to 36·50 days in 2011). It is difficult to escape the conclusion that Hammond Shoes is increasingly using suppliers as a source of free credit on top of the loans they have taken from the banks. Financing costs have risen significantly over the last four years, affecting profits and also causing the interest cover ratio to fall dramatically from 14 to 1·33.

The financial analysis essentially supports the descriptive analysis provided by the business analysts. Profits are falling, with the firm unable to cut costs sufficiently quickly. The company is increasingly dependent on external finance which is likely to cause disquiet amongst the owning family (on ethical grounds) and may concern suppliers.

Investment analysis:
The two scenarios developed by the senior managers also reflect the pessimism of the company. There seems to be universal acceptance that in the next three years the company will still experience low sales even after the company invests in the new production facilities. Beyond that, managers only see a 30% chance of higher sales resulting and this depends upon favourable changes in the business environment.

For both scenarios, the net benefits of the first three years are $5m per year, giving a total of $15m.

For the next three years, managers suggest that there is a 0·7 chance of continuing low demand, leading to net benefits staying at $5m per year, giving a further benefit of $15m total, with an expected value of $10·5 ($15m x 0·7). Higher demand would lead to net benefits of $10m per year, providing a total of $30m, but with an expected value of only $9m ($30m x 0·3).

Thus the expected benefits of the project are only $34·5 ($15m + $10·5m + $9m), which is below the proposed investment of $37·5m. Only if the second scenario materialises after three years will the investment (in broad terms) have been justified. This scenario would return $45m.

However, it has to be recognised that the projection only covers the first six years of the new production facilities. The factory was last updated twenty years ago and so it seems reasonable to expect net profits to continue for many years after the six years explicitly considered in the scenario, but it must be recognised that predicting net benefits beyond that horizon becomes increasingly unreliable and subjective.

(b) This question does not require the candidate to use a specific framework for generating strategic options. A number of possibilities exist. The TOWS matrix, the strategy clock and the Ansoff matrix all come to mind. Each of these frameworks has sufficient facets to generate the number of options or directions required to gain the marks on offer. For the purpose of this answer, the TOWS matrix is used, because it fits so well with the SWOT analysis produced by the consultants. However, the focus is on the options generated, not the framework itself and so other frameworks may be as appropriate.

The TOWS matrix is a way of generating directions from an understanding of the organisation's strategic position. It builds directly on the work of the SWOT with each quadrant identifying options that address a different combination of the internal factors (strengths and weaknesses) and external factors (opportunities and threats).

		Internal factors	
		Strengths	**Weaknesses**
External factors	Opportunities	SO – options that use strengths to take advantage of opportunities	WO – options that take advantage of opportunities by overcoming weaknesses
	Threats	ST – options that use strengths to avoid threats	WT – options that minimise weaknesses and avoid threats

Taking each quadrant in turn:

SO – using strengths to take advantage of opportunities. A number of possible options might be considered here. Hammond Shoes' retail expertise is an acknowledged strength of the company, and it may be possible to use it to take advantage of the opportunities provided by increased consumer spending and consumerism in Arnland. Two possible options come to mind. Firstly, the company could consider selling competing products or complementary goods in its retail shops. This would give consumers a greater choice of products and allow Hammond Shoes to reap some of the profit margins enjoyed by its competitors. Given the company's acknowledged retail expertise, this option should help preserve the long-term future of the shops.

Secondly, the increasing appetite of the public for safe, car-free shopping from a variety of shops might suggest the development of retail 'villages' on the land that Hammond Shoes have, both in Petatown and in the, now disused, factory in the north of the country. This option would combine the twin strengths of retail experience and the availability of land owned by the company, to provide consumers with an experience they increasingly seek and value. The fact that only two sites are available in towns where there are currently no Hammond Shoes retail shops means that there is no apparent reason why the creation of the retail villages should not be combined with the diversification of the products offered in the retail stores.

The software expertise of the company's information systems department can also be used to fulfil consumer's desire for increased purchases over the Internet. Up to now this software expertise has been mainly used to develop in-house production and retail systems which are acknowledged as being amongst the best in the industry. This expertise might be used to develop an innovative e-commerce site. This, of course, also opens up the possibility of sales outside Arnland, something that is unlikely at the moment, given that all the retail shops are within the country.

WO – options that take advantage of opportunities by overcoming weaknesses. To some extent this option contains the approach suggested by the Board, upgrading production machinery. This is addressing a known weakness (out-dated production facilities), simultaneously tackling another weakness, the cost of production. Here the approach is to reduce unit cost by improving productivity and reducing energy costs through the use of modern production equipment. The Board perceives that overcoming these weaknesses will allow the company to continue to compete in the market they are familiar with.

Reducing energy costs might also be used to appeal to the increasing number of green consumers of Arnland who take into account ethical issues when making purchasing decisions. The business analysts have identified these savings as an opportunity in their SWOT analysis. They should be attracted to a product that has been produced using an energy efficient process, and has not travelled thousands of kilometres (using energy consuming boats, road transport and trains). At the time of writing, there is an increased interest in measuring product miles or kilometres, a term used to assess the environmental impact of delivering a product from its point of production to its point of sale. Although the measures are controversial, this need not necessarily concern the messages put out by Hammond Shoes' marketing department.

Hammond Shoes might also use the negative impact of television programmes showing the use of cheap and exploited labour in the production of goods in Orietaria as part of their marketing message. Although the consultants have suggested that the production of shoes in Arnland is a weakness (because of high costs) it could be turned into a strength if the country of origin becomes an important part of the buying decision for people who are willing to pay a premium for ethically sourced products. This might be supported by political initiatives, for example, the support of one of the political parties in Arnland for environmentally responsible purchasing. Their manifesto suggests that 'shorter shipping distances reduce energy use and pollution. Purchasing locally supports communities and local jobs'.

ST – options that use strengths to avoid threats. The company is an acknowledged leader in shoe design and distribution software. It also has significant retail competencies. The company might consider reviewing these to see whether innovative production and retail systems could not be combined and extended to provide economies of supply that partly compensate for the relative high cost of production. So, although production costs cannot easily be reduced, supply and storage costs might be.

The extensive property ownership of the organisation is also perceived as a significant strength. In the short term there may be an opportunity to buy time whilst the cost of producing overseas increases due to rising fuel costs and demands for better pay in the producing countries. Thus, cheaper competition might be seen as a short-term threat, which will eventually disappear. The property portfolio could be used to help finance Hammond Shoes through this period. It might do this by disposing of property, or perhaps more innovatively, by selling all of its property and leasing it back. This would provide liquidity which could be used to ease the company through the next few years.

WT – options that minimise weaknesses and avoid threats. The high cost of labour (weakness) and the continued provision of cheap imports (threat) may mean that Hammond Shoes should consider diversifying into areas of the footwear market where there is either less demand for raw materials or where a premium can be charged, either due to the quality of the product or due to appropriate branding. For example, focusing on shoes for children, which requires greater precision and less raw material, might be a possibility. The attraction of this is that it is a product which needs regular renewal (as feet grow) and because parents are conscious of getting exactly the right fit to avoid permanent damage to their children's feet. The acknowledged strengths of the retail experience, where employees have extensive product knowledge and excellent customer care, might also be harnessed to support this approach. Branding can reinforce the message, focusing on Hammond Shoes as primarily a supplier of children's shoes. Adult shoes may be given a lower marketing profile, but are available for cross-selling when parents are visiting for measuring and fitting shoes for their children.

Other niche areas might include high quality fashion shoes and boots, where customers are willing to pay a premium for the product. This might demand a certain amount of exclusivity, reinforced through appropriate marketing. Again, one of the attractions of the fashion market is the relatively short shelf-life of the product. Many consumers wish to renew their shoes each season as a fashion statement, not due to any desire to keep their feet dry and clean.

(c) A mission statement defines the overriding direction and purpose of an organisation. Some organisations also have *vision* statements stating what the company aspires to. However, for the purpose of this answer, vision and mission are perceived as largely the same thing. Mission statements have their critics, with many believing that they are bland and too wide-ranging. There may be some truth in this view; after all there are only a limited number of ways that the words customer, quality and leader can be re-arranged. However, most organisations appear to have settled into an approach where a short snappy slogan or strap line is supported by a much deeper description of what the organisation is about, its stakeholders and how it wishes to interact with those stakeholders. It defines how the organisation wants to do business. At the time of writing Virgin Atlantic has three elements to its mission statement, all expanded into specific objectives on its website. *To grow a profitable airline, where people love to fly and where people love to work*. Part of ACCA's mission is to *provide opportunity and access to people of ability around the world and to support our members throughout their careers in accounting, business and finance*.

If there is substantial disagreement within the organisation about its overall mission then there may be significant problems in determining the strategic direction of the organisation. Defining a mission statement also provides an opportunity for the organisation to communicate its core corporate values. These may be explicitly defined within the mission itself or they may be in subsidiary statements, corporate reports or web resources. These values tell customers and suppliers how the organisation wishes to operate. They represent the core values and principles that guide the organisations' actions. These could, for example, concern aspects of corporate social responsibility. The ACCA has core values of *opportunity, diversity, innovation, accountability and integrity*.

One of the problems at Hammond Shoes appears to be that the core values of the organisation are implied, but not explicitly stated. Originally, these were provided by the beliefs of the founding brothers – provision of education and housing for employees, secure jobs and good working conditions. Privately, the family still have these principles but they have largely failed to communicate and promote them. Commercial organisations with important core social values are increasingly rare. The extent of this communication failure at Hammond Shoes even extends to the senior management of the company. Their promotion of the potential benefits of outsourcing of production indicated a failure to understand that this would effectively remove a significant part of the company's reason for existence. Its core values include the provision of fair employment opportunities for the people of Petatown and the reaction of the family to removing this central mission illustrates that this value remains core to the continued existence of the company.

Thus the Hammond family should explicitly state their core values, perhaps as a detailed expansion of a short, clear mission statement. This would allow the family to articulate its beliefs and communicate these to customers, suppliers and employees.

A number of writers on organisations use a MOST analysis to help understand the internal environment of an organisation. MOST stands for Mission, Objectives, Strategy and Tactics. The aim of this analysis is to see whether the four facets actually exist (checking for omission) and, if they do, whether they align. Objectives are statements of specific outcomes that the organisation wishes to achieve. They are often expressed in financial terms, such as profit levels, turnover or dividend distribution to shareholders. Marketing objectives are also very common; such as a target market share and customer service provision. Johnson, Scholes and Whittington also believe that general, unquantifiable objectives are acceptable. They recognise that objectives such as 'being a leader in technology' is important to state, but could be difficult to quantify and may indeed encourage spurious quantification. In the context of Hammond Shoes, the company does appear to have certain objectives, such as keeping production in Petatown and providing educational opportunities for employees. As Johnson, Scholes and Whittington point out, 'there are times when specific objectives are required'. This is when urgent action is necessary, as at Hammond Shoes, when it becomes important for the management to focus on a limited number of quantified, priority requirements and not waste their energies pursuing vaguely stated ones.

Furthermore, the existence of such objectives provides an opportunity for managers and employees throughout the organisation to align their own work with stated objectives and so see how what they do contributes to objectives that, in turn, serve the corporate mission. The company clearly fails to cascade objectives down through the organisation and, again, at a period of crisis, this may be a significant weakness. For example, the core value of treating suppliers fairly could have been enshrined within an objective of paying all suppliers within 30 days. The absence of this specific objective and hence the impossibility of cascading it down to those responsible for cash flow management and payment has meant that this section has imposed its own objective of extending payment terms as much as possible. Evidence suggests that they now stand at over 60 days, so the company is failing to meet one of its core values – fairness to suppliers.

Hence, Hammond Shoes does not have a clearly defined mission or explicitly stated values. Its objectives are restricted and rarely quantified. Its strategy is now under review, although it has made certain tactical decisions such as resisting outsourcing and commissioning updated production facilities in Petatown. Thus in the MOST analysis, there are some elements omitted and hence alignment is impossible. This needs to be addressed.

2 **(a)** A critical evaluation of using the software package approach at Flexipipe could be structured around three factors. The first concerns the wisdom of using a package solution for a process where the company enjoys a competitive edge over its competitors. The second factor focuses on the difficulties of selecting an appropriate package in an environment where requirements are difficult to define and are still subject to change. The final factor revolves around the problem of successfully procuring a software package in an organisation which lacks both experience and a process for selecting and procuring a non-standard software application. Each of these factors is now considered in turn. Other appropriate factors and relevant approaches will be given credit.

Competitive edge

It is generally accepted that software package solutions cannot provide organisations with a competitive edge. By definition such packages are available to all companies in a sector or market and so any commercial advantages offered by the package are available to all organisations competing in that market.

It is recognised that the control of the production process at Flexipipe was very innovative. It provided the company with significant competitive edge over their competitors. For this reason, it seemed unlikely from the start that Flexipipe would find a package that fulfilled its exact requirements and that any selected package would constrain the production process. Indeed, this is what happened, with the new system unable to replicate the flexibility and efficiency of the existing one.

Initially, the company would have been advised to consider the location of the process on the Harmon process/strategy grid. The process is strategically important and relatively complex. Software package solutions should primarily be considered for reasonably straightforward commodity processes which have low strategic importance to the company, such as payroll and accounts. Thus, in the context of Flexipipe, a bespoke software solution would, from the outset, appear to have been more appropriate.

Complexity and nature of requirements

It was recognised from the start that it was relatively difficult to specify all the requirements of the production process in advance because many decisions were intuitively taken by experienced managers and supervisors on the factory floor. It was often difficult for them to explain why they had taken certain effective decisions. It is very risky to select a software package against incomplete or unarticulated requirements. If significant requirements are missed or misunderstood then it is difficult to address the problems this might cause.

There are at least three potential approaches to addressing the problem of the software failing to fulfil requirements, but each of these has disadvantages. The first approach is to ask the software vendor to integrate these requirements into the next release of the package. However, even if the software vendor agrees, it may be a costly solution as well as allowing such innovations to become available to all users of the package. The second approach is to ask the software vendor to build a tailored version of the application to fulfil specific requirements. This is likely to be expensive (so reducing the cost advantages of buying a package) and cause long-term maintenance problems and costs as the tailored version has to be integrated with new releases of the standard software package. The final approach is to seek a manual work-around for the missing requirements. However, this may also be costly as well as reducing the business benefits which should have been obtained. Whichever approach is taken, it is likely to either reduce the benefits or increase the costs of adopting a software package solution.

It was also recognised that requirements are likely to change in the long term. There is no guarantee that the software vendor will develop the package to fit newly emerging requirements and so the issues of tailoring and work-around will again have to be considered. Most package selection takes place against **current requirements** and so this approach is well-suited to circumstances where requirements rarely change and, if they do, they are specified by legislative bodies and the software vendors must make the changes to keep their product compliant. Payroll and integrated accounts applications are typical of this. Applications that are subject to long-term changes (such as the production process at Flexipipe) and do not require legislative compliance, are less appropriate to this approach.

Absence of mature procurement process and management expertise

It was recognised from the outset that Flexipipe did not have an established process for software package selection and implementation. This was a very risky project in which to try and establish a process and select an appropriate package. Lack of procurement expertise in general has been a problem in the past for the company when a key supplier of raw materials for the pipes went out of business. This caused short-term production problems, although an alternative supplier had eventually been found. However, procurement still only employs two people full-time and they are relatively junior and over-worked. The company appears to have a very immature procurement process.

The long-term commitment to an external supplier is very problematic in software supply, where moving formerly in-house applications to a new supplier can be technically difficult, expensive and disruptive. In general, there are significant risks associated with the long-term viability of software suppliers and the maintenance of software applications that are critical to the company. Companies go out of business, as in the case study scenario, and companies are sold. It is feasible that a software supplier might be bought by a competitor of Flexipipe, threatening long-term supply. These problems are largely absent in bespoke development, particularly if this development is undertaken in-house. The software program code belongs to the company (not the supplier) and its long-term development is under its control.

(b) In the context of the Flexipipe project, here are some of the issues that could have been addressed by a formal software package evaluation process. It is important that candidates identify elements of the process relevant to the Flexipipe scenario. A generic evaluation process is insufficient.

The business case for all software procurement projects should be assessed to see if a package is an appropriate solution. In some instances a bespoke IT development may be better suited. As mentioned in the answer to the first part of this question, the Harmon grid considers process complexity and strategic importance and it could have been used as a guide to assessing the appropriateness of the software package solution approach. If it had been used at Flexipipe then it seems likely that the software package approach would have been abandoned at an early stage of the project.

The requirements must be carefully and comprehensively specified before embarking on a procurement exercise. Difficulties with specifying requirements may again lead to a re-consideration of the bespoke approach. In the case study scenario, mention is made of the system failing to fulfil a number of functional requirements, such as monitoring process variance. The inference is that these requirements were either not specified or were incorrectly specified in advance and so were not part of the package assessment. Similarly, problems with 'usability' may be due to the failure of defining specific usability requirements in advance and so these were not considered when the package was evaluated.

The tendering method has to be made more formal and competitive. A post-project review has shown that there were at least three other packages which should have been considered in the evaluation process. A more formal process would have had a mechanism for finding these potential suppliers. The openness of the tendering process would also have been assisted by advertising in trade magazines and internet tendering sites, which may have also brought forward other potential suppliers. This is an important step because it allows a transparency in the process, and avoids selecting a supplier purely on the recommendation of one internal employee: as in the case of Flexipipe. It would have avoided the situation of a package being selected solely on the basis of a visit to an exhibition.

Suppliers who submit tenders must be evaluated against criteria agreed in advance. Buying a software package leads to a long-term relationship between the supplier and the customer, so the latter must be comfortable with the supplier's credentials. In the context of Flexipipe this would involve setting standard measures and minimum values for liquidity, gearing and profitability. There also has to be some way of off-setting the supplier's suitability with the suitability of the product. That is, how a package with limited functionality from a well-established, financially sound supplier is evaluated against a more functional, usable package from a newly established company with high financial gearing and low turnover. The balance between such factors has to be established in advance, often using a high-level weighted matrix. In the context of the scenario, appropriate financial checks should have identified the high gearing and poor liquidity of the supplier that eventually led to its collapse.

A proper process also needs to be in place to evaluate the potential solution against the specified requirements. It is important to establish the 'fit' between the requirements and the potential solution and to use this 'fit' in the final selection. It has been stated elsewhere that it is unlikely that a package solution will exactly fulfil all requirements. However, if the 'fit' is known and understood in advance then negotiation with users may lead to them dropping, modifying or finding work-around for these gaps. Perhaps some of the functional shortcomings identified by users might have been tolerated, if they had been known and understood in advance.

Finally, a planned implementation is an important part of the process. Perhaps the lack of usability of the software was down to the absence of training and the belief that users could 'to pick up the software as they go along'. This is a risky approach, even in circumstances even with experienced users and in a situation where the software product is a good fit with their requirements.

3 (a) Meetings were held throughout the design and construction of the centre. These meetings focused on the building of the centre, monitoring progress and resolving minor issues that arose during construction. The successful completion of the centre on budget and ahead of schedule suggests that these meetings were effective. However, the absence of a wider **project initiation document** or **terms of reference** created problems that could have been resolved or better understood. An analysis of how a standard document could have helped address some of the issues that affected the construction and subsequent evaluation of the centre is given below.

There was confusion about the **objectives** of the project. The local authority is unable to recognise the distinction between *project objectives* and *business objectives*. The business objective of the project was to deliver payback in four years as required by the Private/Public investment policy. In contrast, the project objective was to build the centre by June 2011 for $600,000. By their very nature, the business objectives are not within the control of the project manager from the construction company responsible for building the centre. The achievement of the business objectives will involve much more than just delivering a building. They will concern marketing, sales and the successful operation of the centre. Evidence seems to suggest that the project manager was not (as the second project sponsor claimed) a failure. He delivered the building within budget and ahead of schedule. The problem was the failure of the local authority to distinguish between the project objectives (constructing the building) and the wider business objectives which the building was to help satisfy. It appears that nobody was either aware of, or willing to take responsibility for these wider objectives. It is recommended that future projects should clearly distinguish between project and business objectives and assign responsibilities to each.

The **scope** of the project was well-defined by the standard architectural drawings agreed between the construction company and the project sponsor. The only significant problem concerned the quality of the internal painting. There is no way (post project) of reconciling this misunderstanding. The construction company felt that it had come to an arrangement about this with the initial sponsor, but no documentation could be found to irrevocably support this. The letter confirming the intended finish produced by the construction company was not counter-signed by the project sponsor. This is an important lesson for the construction company in future projects. Changes or clarifications to the specification must be counter-signed by both parties. This is also appropriate to the local authority's project management methods, continuing to demand that all changes must be counter-signed by both parties.

The **constraints** of the project were relatively well-defined in terms of time and cost, as these were defined in the original business case. However, tension was caused within the project when it became clear that certain labour and sourcing requirements of the Private/Public policy were not being adhered to. Specifically, these concerned the use of sub-contracted labour (not to be used without the commissioning agency's permission) and sourcing at least 80% of timber on the project from sustainable forests. The generic terms of the Private/Public investment policy were not made available to the construction company. It is suggested that the local authority should, in future, integrate such objectives explicitly into the project terms of reference.

The **authority** of the project is the sponsor responsible for making decisions about the project, providing resources, considering and agreeing changes. They should also promote the project within the local authority and accept the project once it has been completed. The original sponsor on the local authority was very supportive of the centre's design but their successor seemed unsure of her responsibilities and focused on obtaining concessions from the suppliers under the pretext of 'value for money' rather than considering the wider issues, such as defining who had responsibility for delivering the business objectives. She also failed to promote the project to her fellow employees and tried to blame the builders for the failure. The role of the project sponsor should be formally defined within the local authority. Their responsibilities should be clear and failure to adhere to those responsibilities should be addressed.

The **resources** available to the project were relatively well defined, although the lack of local authority staff able and willing to discuss disability access meant that the contractors had to use their own initiative in this area. Fortunately for them, they interpreted legal requirements correctly and the delivered centre was deemed to be compliant with legislation. However, this is a risky approach and is not recommended for the future. Local authority resources and support required by projects should be specifically defined in advance. If they are unavailable during the project then substitutes must be provided.

(b) This part of the question evaluates the four sets of benefits identified in the payback calculation. It requires the categorisation and critical evaluation of each benefit.

Ward and Daniel use the term **'observable benefits'** to describe the least explicit benefits such as *increased staff morale* in the case of the community centre. They suggest that such benefits should be assessed against clear criteria by someone who is qualified to make such an assessment. So, for example, current staff morale and motivation might be assessed in an independent survey and compared to results from a similar survey conducted once the centre has been built and occupied.

In the context of the centre it might seem reasonable to assume that improved staff morale and motivation will have a positive effect on the success of the centre. For example, it may lead to better customer service, which may, in turn, lead to customers returning more often or using more facilities whilst they are there. It may also lead to reduced staff turnover, so decreasing costs associated with recruitment, induction and training.

However, from a benefits perspective, two issues have to be specifically addressed.

Firstly, the relatively significant estimated benefits attributed to improved staff morale in the original payback calculation must be questioned. In terms of increased benefits it is difficult to disentangle benefits due to this from other factors which might lead to increased customer use. In terms of reduced recruitment costs, there is little to suggest that staff turnover is high at the moment. 80% of the staff has been with the centre for over five years and there is an economic recession in the country, with unprecedented unemployment.

Secondly, and perhaps more fundamentally, the whole basis of the benefit needs further consideration. It is unclear why moving to the new centre would necessarily improve staff morale and motivation in the first place. There may be some intellectual support for the view that a pleasant working environment contributes towards motivation, but, in the initial stages the centre is likely to have temporary teething problems leading to (at least in the short term) a more stressful work environment. Similarly, even if a survey found that morale and motivation had increased it would be hazardous to attribute this to the investment in the centre as it may be largely due to external factors affecting each individual.

A **measurable benefit** is one where an aspect of performance is currently being measured or could be measured. However, it is not possible to estimate with any certainty, in advance, how much performance will improve when the changes are completed. In the context of the centre, *increased income* seems a reasonable measurable benefit. It seems reasonable to expect that current income is measured and that similar measures may be collected in the future.

The estimates on the payback calculation need further scrutiny, particularly the large increases predicted for years three and four. It should be acknowledged that few benefits are instantaneous and that use will only increase as the reputation of the centre grows. However, this growth in customer use is not associated with any increased costs which would seem unlikely. Hence, the basis of these benefits requires further investigation.

A **quantifiable benefit** is one where there is sufficient evidence to forecast how much improvement or benefit should result from the proposed changes. In such circumstances the level of performance prior to the change is known and the improvement can be specifically attributed to the investment, rather than to other changes. *Energy savings* appears to fit into this category. Energy use could be established for the current building. The Private/Public investment policy requires buildings constructed under this arrangement to meet specified target energy levels. The construction methods and design of the building should reflect the need to meet this target. Thus there is a good basis for predicting energy savings, although, of course, the actual savings will not be known until after implementation.

Finally, a **financial benefit** is one where a financial value can be obtained by applying a cost, price or any other valid financial formula to a quantifiable benefit. Thus we might re-classify the quantifiable benefit of *energy savings* as a financial benefit, assuming that the new building meets the minimum level required by the initiative. There are still important assumptions here, and the real performance can only be assessed after the building has been used for a while. There is still an element of estimation, and indeed the new building may surpass the minimum levels assumed in the cost/benefit analysis. In contrast *rental savings* on the current properties are both definite and immediate and are correctly recorded in the payback calculation.

In summary, the benefits in the payback calculation should probably have been initially restricted to financial and quantifiable benefits. The other benefits are important and should have been documented in the business case, but it seems inappropriate to artificially quantify these benefits to satisfy the need to achieve a payback target. However, if the measurable benefits are included in the business case, their underlying assumptions and probability should be communicated to the decision-maker. Furthermore, efforts might also be made to better estimate the likely benefits, perhaps through looking at performance in similar centres, and using this as a benchmark to elevate the benefits to being, at least, quantifiable.

4 **(a)** The value chain was introduced by Michael Porter as a way of examining all the activities a firm performs and how these activities interact. By understanding the value chain the analyst can understand costs and identify existing and potential sources of differentiation. The value chain of the organisation is concerned with creating value for customers. A firm is profitable if the value it commands from the customer exceeds the costs involved in creating the product or service that delivers that value.

The primary activities of the value chain are the activities required to physically produce the product, get it to the customer and provide that customer with after-sales service and assistance. Support activities provide organisation-wide functions (such as procurement and technology) to support the primary activities. In general, they support the whole value chain.

In the context of Jayne Cox Direct, the primary activities and their problems are:

Inbound logistics – activities associated with receiving, storing and distributing inputs to the product. This includes warehousing, inventory control and raw materials. At Jayne Cox Direct this concerns wood, upholstery, textiles and other raw materials. It concerns the storage of these raw materials before they are used in production. At Jayne Cox Direct there are documented problems with the e-mail purchase ordering system, which has led to the non-delivery of an expected order. High inventory levels are also commented on in the scenario and these need further investigation.

Operations – activities concerned with transforming the inputs into their final form; machining, packaging, assembly and testing. At Jayne Cox Direct this is the production process of furniture manufacture. Despite high inventory levels and a relatively slow production process, almost half of the promised delivery dates are not achieved. The reasons for this again need further investigation. Perhaps the method for estimating the delivery date is too optimistic. Alternatively, there may be inefficiencies in the production process which need addressing. As well as disappointing customers, failure to meet the proposed delivery date causes increased administrative costs, as a member of the sales team has to contact the customer and rearrange the delivery date.

Outbound logistics – activities associated with storing finished goods and physically distributing these to the customer. At Jayne Cox Direct this is the storage of completed furniture and the delivery of furniture, using their vans, to customers. The cost of storing of finished goods is exacerbated by the need to store them longer than is necessary. There are two reasons for this. The first is concerned with customers not being able to meet revised delivery dates and so deferring delivery. The second reason is the return and storage of goods where delivery cannot be made because the customer is not at home to sign for them. Storage of finished goods increases inventory holding costs. Failed deliveries increase administrative costs (a member of the sales team has to telephone customers to re-arrange the delivery) and distribution costs (the delivery has to be made again).

Marketing and sales – activities that allow a buyer to become aware of a product, induces them to purchase this product and supports the actual purchase of the product. At Jayne Cox Direct this is achieved largely by display advertising in quality magazines and through a web-based ordering system. The sequence of the web-based ordering system may repay investigation and amendment. The estimated delivery time is given after the order has been placed and this causes some customers to immediately cancel their orders. It is perhaps unlikely that such customers will return to place orders with Jayne Cox Direct.

Servicing – activities that enhance or maintain the value of the product, including repair, parts supply and product adjustment. At Jayne Cox Direct this would concern replacement of faulty or spoilt goods, complaints handling and product care information. Customers are critical of after-sales service at Jayne Cox Direct and the managing director believes that this contributes to low customer retention.

The value chain also considers a number of secondary or support activities. Only one of these is specifically relevant in the context of the Jayne Cox Direct scenario.

Procurement refers to the function of purchasing inputs used in the organisation's value chain. It does not refer to the purchase inputs themselves. The cost of the procurement function may be relatively small, but their practices greatly affect the quality and cost of the final product. At Jayne Cox Direct, the cost of wood, upholstery and textiles will be an important determinant of the product cost. The long-term arrangement with suppliers needs investigating. Three timber suppliers provide 95% of the wood. Such arrangements may lead to suppliers becoming comfortable and progressively uncompetitive.

(b) This question is primarily concerned with re-examining the upstream and downstream supply chains to explore opportunities for reducing cost, improving order-to-delivery time, improving delivery practices and enhancing customer service. Clearly there are many possibilities. Candidates, however, will only be given credit for suggestions that use technology (rather than organisational changes) and that are clearly relevant to the case study scenario and the products it concerns.

Upstream supply chain solutions
The upstream activities concern selecting suppliers (procurement), placing orders (procurement) and storing raw material inventory (inbound logistics). Dave Chaffey identifies six main challenges in the supply chain. Three of these six are relevant to Jayne Cox Direct.

– Reduce order-to-delivery time
– Manage inventory more effectively
– Improve demand forecasting

Suggestions for improvement might include:

As mentioned in the answer to the first part of this question, procurement continually uses the same long-established suppliers (for example, 95% of timber comes from three established suppliers). These suppliers may have become complacent and uncompetitive. The company might consider using e-procurement websites to identify a wider range of suppliers and then select between these suppliers on the basis of cost and quality when placing individual orders. Such an approach should help drive down raw material costs and re-focus the costs and service offered by the established suppliers.

Although the purchase orders are placed through email, the ordering process is relatively cumbersome with suppliers occasionally failing to respond to emails or, when an expected delivery is not received, claiming they did not receive them in the first place. The payment system (operated by accounts) sometimes fails to match purchase orders with supplier invoices, leading to delayed supplier payment and discontent. The company might consider a new system to administer purchasing and payment, linked electronically (through EDI) to the suppliers, so that orders are automatically entered into the supplier's system and all invoice reconciliation and payment is performed electronically. This may require the company to continue to trade with a selected number of small suppliers, but it should help avoid non-delivery, reduce administrative costs and improve supplier relationships.

To avoid delays through inventory shortages, linkage with supplier systems might be increased by allowing suppliers to see the demand for certain products so that suppliers can, to some extent, anticipate demand and so should be able to supply more quickly. This would require further investigation and it seems likely that it would work better for certain raw materials than others. For example, the textile suppliers would be able to see the relative demand for different patterns and adjust their production accordingly. This should lead to Jayne Cox Direct achieving a higher percentage of planned customer order dates, as well as reducing delivery lead time.

Increased integration also brings the promise of better inventory management, with the opportunity of suppliers effectively producing to order rather than to stock, which is, in effect, an extension of what Jayne Cox Direct is doing. Closer integration of customer and supplier systems also provides the opportunity for 'just in time' manufacture where raw materials arrive just before they are needed in the production process. Although this transfers inventory costs to suppliers, more understanding of demand should mean that suppliers' inventory management is also more effective. Reduced inventory costs for the supplier might also be passed on to Jayne Cox Direct, resulting in lower input costs. An understanding of demand and the relative costs of storage and ordering should also allow Jayne Cox Direct to implement systems that optimise order quantities (the EOQ model).

Downstream supply chain solutions
Downstream supply to customers is relatively simple as there are no intermediaries, as the company supplies directly to the consumer. However, evidence suggests that some consumers are relatively disaffected. A further challenge cited by Dave Chaffey is relevant here, the need to improve aftersales/post-sales operations (service on the value chain). The company also needs to consider the costs of finished goods storage (outbound logistics), distribution to customers (outbound logistics). Furthermore, although processing orders is relatively effective, customers feel uninformed in the period between order placement and order fulfilment.

Some technological solutions here might include:

To introduce technology to support the planning and co-ordinating of deliveries so that delivery vans are used more efficiently and effectively. This might simultaneously increase the likelihood of customers being at home to receive deliveries. The products being delivered are bulky and valuable and so it is vital that someone is available at the delivery address to receive them. Failed deliveries are running at 30%, and this leads to increased inventory holding costs associated with storing the returned item at the warehouse, higher administrative costs of arranging a re-delivery and extra costs of actually making that re-delivery. Technology could be used to improve van utilisation (route planning software) as well as increasing the chance of a customer being at home (automated emails to the customer, automated text messages confirming delivery that day, perhaps confirming likely delivery time).

Part of the delivery problem is caused by the failure to continually inform customers about the progress of their order. The processing and payment for the goods appears to go quite smoothly and an estimated delivery date is given to the customer at the time of order. However, the customer receives no further information until an actual delivery date is confirmed by telephone less than one week before the planned delivery. Many actual delivery dates are not the same as the original estimated delivery date because of procurement issues. Some customers cannot make this new date (often after keeping the original date free) and so a new date has to be negotiated (an administration cost) and this often leads to the finished product being stored for longer (increasing inventory cost). An IT system that allows the customer to track their orders; updates likely delivery dates as they become available and gives the customer some feeling of progress and involvement would increase customer satisfaction and, by increasing the chance of achieving target delivery dates, reduce inventory cost and other expenses.

Customers have also complained about the absence of after-sales service. Using technology to provide answers to frequently asked questions (how do I get stains out of the upholstery), make and handle complaints and order replacement materials (particularly textiles) would appear to be beneficial. Service should help retain customers. Newsletters, special offers for established customers and targeted emails should also boost customer retention.

1 **(a)** 1 mark for each appropriate point up to a maximum of 14 marks.

(b) 1 mark for each appropriate point up to a maximum of 20 marks.
Up to 4 further marks are available for the style, structure and clarity of the answer.

(c) 1 mark for each appropriate point up to a maximum of 12 marks.

2 **(a)** 1 mark for each appropriate point up to a maximum of 12 marks.

(b) 1 mark for each appropriate point up to a maximum of 13 marks.

3 **(a)** 1 mark for each appropriate point up to a maximum of 13 marks.

(b) 1 mark for each appropriate point up to a maximum of 12 marks.

4 **(a)** 1 mark for each appropriate point up to a maximum of 12 marks.

(b) 1 mark for each appropriate point up to a maximum of 13 marks.