
Answers

1 (a) (i) Introduction

The Roam Group currently consists of three operating companies: Stuart Roam Road Transport, Stuart Roam Warehousing and Stuart Roam Rail. Roam Group Co (The Roam Group) is a corporate holding company which facilitates the acquisition of operating companies in the Group. This first part of the report evaluates the performance and contribution of each of the three current operating companies and assesses their relative significance in The Roam Group's future business strategy. The portfolio analysis references two significant models: the Boston Box (or BCG matrix), suggested by the Boston Consulting Group, which uses a classification based upon a company's market growth and market share, and the *parenting matrix* of the Ashridge Portfolio Display which focuses on the fit between the company and its parent.

Stuart Roam Road Transport

Stuart Roam Road Transport (SRRT) is a central part of The Roam Group. Not only does it reflect the original business purpose of the Group, but it is also a fundamental part of its current business strategy, linking customers to rail, warehouse and, potentially, airports. It is also the largest revenue generating part of the Group, contributing 57.39% of the Group's revenues in 2013 and 54.83% of its operating profit. The company has extensive experience in road freight and it is now the dominant company in this business sector. There is also a clear emotional attachment to the industry, with the managing director taking time out once a month to return to everyday trucking. It has an outstanding brand image, promoted partly through significant non-corporate initiatives (the New-Roamantics), which give it free high-profile promotion. The brand image is supported by a clever catch phrase painted on every truck and by the ownership of a modern, reliable, efficient fleet of trucks. In terms of the Ashridge portfolio model, partly because of the historical development of the group, SRRT is definitely a heartland business.

The road freight market has experienced relatively little growth over the last four years (2.50% growth). SRRT has increased its market share over this time (from 25.00% to 28.05%), with a 15% increase in revenues. In Boston Box terms it is a cash cow, although fairly low margins reduce the amount of money it can produce for investment in itself or in other companies in the Group. These relatively low operating profits appear to be typical for the industry sector, with SRRT consistently performing slightly better than industry averages.

Stuart Roam Warehousing

Stuart Roam Warehousing operates a number of efficient, automated warehouses around the country. The physical size of these warehouses provides another opportunity for promoting the brand image and colours of The Roam Group. There is clear synergy with the road transport operation. Indeed, the Group probably had little hesitation in entering this sector of the market. Powerful external forces (including the growth of outsourcing, the growth of internet shopping and retailers requiring an integrated logistics solution) meant that the business case would have been overwhelming.

As a whole, the sector is expanding. The market has grown from revenues of \$2,850m to \$3,200m dollars in four years – a growth of 12.28%. Stuart Roam Warehousing has experienced a 26.00% growth in this time period, although their market share is still less than 10% (9.84%). Operating margins are slightly higher than the road transport sector and the ROCE is also higher. Stuart Roam Warehousing contributes over 40% (40.47%) of the operating profit of the whole Group. In the Boston Box analysis, there is a practical problem in defining what is meant by 'high', so the company is either a question mark or a star depending on the assessment of its market share. However it is classified, it needs further nurturing and investment. In the context of the Ashridge portfolio model, the company appears to be a heartland business. The Group has a good feel for the business and there seems to be a good fit between the business opportunities and the characteristics and capabilities of the Group as a whole. Overall, its financial performance is largely in line with industry averages.

Stuart Roam Rail

The rail freight market appears to be expanding rapidly. There is a 26.00% rise in industry revenue between 2009 and 2013. Perhaps this reflects the increasing cost of road transport, increasing road congestion and fears about the environmental impact of road transport. However, Stuart Roam Rail is a very small player in this market. It has failed to match growth (only 6.6% growth over this period) and its market share has fallen (from 4.20% to 3.56%). Its financial performance is relatively poor, reporting lower operating margins and ROCE than the industry averages. Importantly, the acquisition of FDRC by the Group does not seem to have made a positive impact. In fact, despite an increase in revenues, overall financial performance appears to be worse. In 2010 (the last year the company traded as FDRC), the company reported an operating profit of 4.95% (4.75% in 2013) and a ROCE of 3.85% (3.50% in 2013). This decline in performance is important to bear in mind when considering the possible acquisition of Godiva airport.

In Boston Box terms, Stuart Roam Rail is definitely a question mark (problem child, wildcat). The Group needs to investigate why the company is failing to grab an increasing market share of a rapidly expanding industry. There are at least three possibilities contained within the scenario. Firstly, the company is small and will find it difficult to match the economies of scale enjoyed by the two large rail freight companies. This probably contributes to high operating costs. Secondly, the company has no expertise in the bulk freight contracts (coal, iron ore, oil) which dominate the Meeland economy. This will make it difficult to take these contracts from the current incumbents. Finally, it is unclear whether the transport of consumer food and drink is really suitable for rail transport. The company is distributing to supermarkets, many of which are unlikely to be directly accessible to the rail network. Road transport is a much more flexible alternative.

There are also cultural problems within The Roam Group. The company is used to dealing with a transport method where the medium (roads) is free and drivers are relatively unskilled. In the rail network the transport medium (rails) is charged on a usage basis by a monopoly supplier. Train drivers have to undergo extensive training and are constrained in their route selection. Road and rail are both methods of transport, but they have quite different characteristics. In the context of the Ashridge portfolio model, this cultural problem might suggest that the company is a value trap business. It is typical of a company which initially appears attractive because there appears to be opportunities for the parent to add value. Value trap businesses should only be included in the strategy if they can be moved into the heartland. This will probably only be possible if new skills, competencies or resources are gained by The Roam Group.

However, on the upside, the company has developed an innovative mini-container system for transferring goods from road to rail and for storage in the warehouse. Also, the supermarkets, aware of the demands of the green consumer, are attracted to rail alternatives and perhaps see this as the primary way of distributing in the future, particularly if loads can be quickly transferred onto road vehicles for the last part of the journey from the railhead to supermarket.

Conclusion

In summary, SRRT and Stuart Roam Warehousing are both heartland businesses. However, the similarities between rail transport and distribution and road transport and distribution may have been misjudged. The rail company is potentially a value trap business and the Group will have to reconsider how to move it into the heartland. In Boston Box terms, it is also a problem child (question mark, wildcat) and so their strategy for moving it into the heartland must also address the underlying reasons why market share is falling in a rapidly expanding business sector.

(ii) Introduction

This section of the report considers the proposed acquisition of Godiva airport in the context of its suitability, acceptability and feasibility.

Suitability

The suitability of a strategy addresses the circumstances in which the organisation is operating – its strategic position. Here we have to ask the question, does the acquisition of Godiva airport by The Roam Group make sense? It does appear to be appropriate at a very superficial level – provided by Sir John Watt in his press release. Road, rail and air are all means of transport with different strengths and weaknesses. However, analysis has already revealed (part (i)) that the similarities between road and rail are much less than might be expected. This is particularly true from a customer perspective. Supermarkets tend to have many individual sites, convenient for road transport but not for rail. There are still doubts whether rail can be used as a significant way of distributing consumer food and drink from the warehouse to the supermarket. The integrated mini-containers represent a possible solution, but the cost of unloading and loading at the rail terminal might make their extensive use unlikely on cost grounds. Even if the mini-container system can be extended to aircraft, airports are relatively few and far between, making distance to supermarket sites even more of an issue. Furthermore, air freighting consumer goods is unlikely to deliver the economies of scale associated with rail freight, or to appeal to the eco-sensibilities of the supermarkets.

However, this broad consideration of the complementary nature of transport alternatives hides another, more fundamental issue. The Roam Group is considering buying an airport, not an airline. This is roughly analogous to buying a station (or set of stations) for Stuart Roam Rail or a portfolio of toll roads for Stuart Roam Road Transport. Sir John Watt's statement does appear to imply the purchase, use or formation of an airline sometime in the future, but that is all. The Roam Group has no experience in running airports and although they intend to offer the opportunity to 'no-frills' airlines to offer scheduled passenger services from the airport, there is no evidence that any airline is currently interested in this option. Indeed, the relatively sparsely populated hinterland of the airport makes it difficult to imagine that there would be much demand for such services. If 'no-frills' airlines were to fly out of Godiva, it seems likely that they would have done so by now.

Acceptability

The acceptability of the strategy is concerned with expected outcomes in terms of return, risk and shareholder reaction. Returns are the benefits which stakeholders would expect to get from the strategy, both in financial and non-financial terms.

The financial performance of the airport can only be assessed from the snapshot of its 2013 performance. It would have been useful to have been given access to data for previous years. However, the industry average performance figures given by the aviation industry consultant can give some measure of the airport's relative performance. Unsurprisingly, the primary asset of the company is the airport site itself which is valued at \$6m.

Trading profitability appears quite reasonable. The gross profit margin is 28.21% and an operating profit margin 15.38% (compared to a 17.50% industry average). Indeed, the operating profit compares favourably with the companies currently in The Roam Group. It is much better than, for example, Stuart Roam Rail. However, it has taken significant investment to generate these returns and the Return on Capital Employed (ROCE) is much lower than the industry average. Even if the ROCE calculation excludes interest costs in its calculation (as in Atrill and McLaney), it is still only 2.19%, a very low return. In contrast, liquidity is relatively good (a current ratio of 2.50 – average 2.25), although there appears to be a disproportionately high inventory value. When this is excluded, the acid test ratio is only 1.125, compared to an industry average of 1.50. Gearing is higher than the industry average (59.12% compared to 40%). Finally, in a country where the normal payment period is 30 days, the airport is achieving this for receivables, but is paying in over

60 days (62-57 days). This needs to be investigated further. It might be due to administrative incompetence or to cash flow constraints, with suppliers providing free credit.

Overall, the financial situation is mixed. The airport is trading quite reasonably, but its performance is affected by long-term debts which contribute to a high gearing and a low ROCE. The acid test ratio is of some concern, particularly as customers are paying on time, but payments to suppliers are over twice the accepted payment norm in Meeland.

Risk concerns the probability and consequences of the failure of the acquisition. From the perspective of the resources of the Group, the cost of the acquisition is relatively small and any operating losses could easily be absorbed. A failed acquisition would not be catastrophic for the Group. However, the case has already been made for further investment in Stuart Roam Rail and Stuart Roam Warehousing (two potential problem children) and these may be partially starved of funds due to money being invested in the airport. Managers and employees in other companies may become demotivated by investment in, what might appear to them, an ego-driven vanity project.

The shareholders might also be ambivalent towards the purchase. The Roam family still own the majority of the shares. Their hearts appear to be in road freight, and an investment in an airport might be a step too far.

Feasibility

Finally, feasibility is concerned with whether an organisation has the resources and competencies to deliver a strategy. The issue of financial resources has been considered in the previous section. However, a consideration of competencies is particularly relevant here.

There seems little doubt that the company has significant competencies in road transport and it has been able to adapt these to warehousing. However, these competencies have not proved useful in the rail transport industry. Indeed, since the acquisition of FDRC, the performance of the company has deteriorated. This makes it doubtful that The Roam Group will be able to turn round the performance of an airport – an organisation which is not directly involved in transport. The appropriate competencies are just not in place.

Conclusion

It is the final point about competencies which reinforces the view that the purchase of Godiva airport is an inappropriate strategy and a poor investment for the Group. The company can clearly afford the purchase price of the airport, and absorb any subsequent operating losses, but this will be at the cost of reducing shareholder value and reduced investment and performance in other companies in the Group. Money and management focus would be much better spent on improving the market share of Stuart Roam Warehousing and the overall performance of Stuart Roam Rail. From a suitability perspective, the acquisition does not make sense because it does not appear to address the requirements of customers. It is surprising that someone as experienced as Sir John Watt is advocating this acquisition.

However, one final point must be raised. Perhaps the acquisition is not about airport and 'no-frills' airlines; or indeed, about air freight at all. In a country where land for warehousing is getting scarcer and more expensive, Godiva airport offers 450 hectares of land. At commercial warehousing costs, this would cost \$9m to buy. At the offer price of \$7m, The Roam Group is getting a discount of about 22% on normal land values. Perhaps land is at the heart of the purchase, particularly as the airport site is next to a motorway and a town where SRRT has three depots and warehouses. The declared strategy might not be the real motive. Getting cheaper land for warehouse development might be the real reason for this acquisition, and from that perspective, it makes a lot more sense, particularly if it frees up existing Roam sites within the town which can be sold for housing or office development.

- (b) Johnson, Scholes and Whittington identify four ways of sustaining a price-based strategy: to accept reduced margins, to win a price war, to reduce costs or to focus on specific segments of the market. Elements of all of these might be discerned from the case study scenario. Indeed, the company's focus on consumer food and drink for supermarkets is a continuing example of the last of these strategies. However, this model answer focuses on possibilities offered by reduced margins and a price war.

An organisation pursuing elements of a low price strategy may be prepared to accept a reduced margin, either because it can sell more volume than its competitors or because it can cross-subsidise that business from other business units in the portfolio. The Roam Group can pursue both these options within the context of Stuart Roam Road Transport. It is a dominant player in the road transport market place (generating high volume and revenue) and it is generating good returns in the warehousing business which could be used to cross-subsidise the transport section. It is generally accepted that margins are relatively low in road transport, so reducing operational margins still further might force rivals to exit the business. Market growth is relatively static (2-5% over the last five years), so continued growth requires SRRT to take market share from its rivals. A price war might also achieve this aim. The company is financially sound and evidence suggests that it has greater financial resources than many of its competitors. If it chose to, SRRT should be able to initiate, sustain and win a price war with short or medium-term losses in contribution driving competitors out of the market.

With respect to differentiation, Johnson, Scholes and Whittington offer three ways of sustaining differentiation: creating difficulty of imitation, pursuing imperfect mobility and the re-investment of margin. Two of these are considered here. Imperfect mobility of resources or competencies can be achieved in a number of ways. Two approaches might be applicable at SRRT. It can attempt to increase the difficulty and cost to the customer of switching its supplier. The integration of road transport, warehousing and rail transport using the mini-containers developed by the company might be a key feature here. Nobody can match this flexibility at present (particularly with the eco-friendliness of rail travel which is especially attractive

to supermarkets). It may be possible to imitate it, but it will require considerable investment. However, what is virtually impossible to imitate is the contribution of the New-Roamantics. This is not a carefully crafted management initiative but a group which has spontaneously developed through a shared interest in the Stuart Roam trucks. It is a unique way of promoting the brand. It is unlikely that customers will buy solely because of it, but it does ensure that Stuart Roam is always in their consciousness and there is a certain aspect of fame by association. Subtly encouraging and rewarding this club will maintain an important differentiator between the Stuart Roam Road Transport company and its rivals.

2 (a) Issues with the current process

- There are too many handoffs in the current process, particularly given the need to connect to each section by telephone. It seems likely that bottlenecks will form around these handoffs.
- The role of the supervisor is particularly redundant from the perspective of Stella Electronics (SE). Enquiries for other companies should not be part of their process and, from their perspective, the supervisor adds no value.
- The payment or service contract reference number and the password are requested relatively late in the process. The need to have these available could have been flagged earlier in the process, perhaps at first contact with the supervisor.
- On average, 153 people per day ($600 \text{ calls} \times 0.85 \times 30\%$) do not know their reference number. This means that SE is billed \$153.00 per day for calls which are not resolved. It also wastes the end customer's time and money and is a potential source of complaint and dissatisfaction.
- On average, 18 people (17.85) per day ($(600 - 90 - 153) \times 5\%$) do not know their password. This means that SE is billed \$18 per day for calls which are not resolved. It also wastes the end customer's time and money and is, again, a potential source of dissatisfaction and complaint.
- Although the split of staff across the sections seems reasonable at first sight (six people in technical support for 60% of queries, three people in Stella support for 25% refunds, and one person in the contracts section for 15% of queries), this masks two problems. Firstly, the contracts section is disproportionately understaffed (it should have 1.5 staff) and, secondly, and, more importantly, 100% of the calls have to pass through the three people in Stella support. This must be a bottleneck, and is likely to be the main reason for the poor service experienced by the end customer.

Potential solutions

Tutorial note: *There are a range of potential solutions. Some ideas are presented below, but other legitimate answers will be given credit.*

- A dedicated phone number could be given to SE customers to eradicate the need for a TCG supervisor.
 - Different phone numbers could be given to SE customers for the three different types of query. Thus there will be a dedicated refund line, a dedicated contracts line and a dedicated technical support line.
 - Staffing levels could be changed to reflect the frequency of calls. For example, an extra person could be provided in the contracts section, although this does not address the support bottleneck.
 - The role of routing calls could be performed by an automated telephone system. For example, option 1 could be refunds, option 2 for technical queries and option 3 for service contracts. This would also provide a mechanism for handling other types of queries (option 4), which could be the responsibility of the supervisor if his or her role is retained.
 - Customers requesting refunds or requiring technical support could be informed earlier in the process of the need to have their contract reference number and password ready. This could be given in the automated reply (see point above) to the initial phone call or menu choice selected or it could be requested by the supervisor, if this role is retained. The need for this could also be prominently displayed on their company's website.
 - Multi-skilling staff so that they could effectively handle any part of the process would reduce handoffs. It may be difficult to include technical support in a multi-skilled role, but it certainly seems feasible to merge the refund and service contract roles. Reducing the number of swim lanes is an effective way of improving a business process.
- (b)** The financial case for outsourcing still remains very strong. At present, the cost to SE is \$600 per day for a service provided by 10 people, giving a 24 hour service. SE has calculated that it will cost \$50 to employ a person with similar competencies in Arborium for an eight hour shift. This produces a 24 hour cost of \$150. If SE continues to employ 10 staff, then the total cost will be \$1,500 per day. There would also be capital costs of re-establishing the infrastructure to provide the support service, including telephones, office furniture and training costs. There will also be operational costs, such as electricity and office rent and property charges.

So a like-to-like switch back to an in-house support unit seems impossible to justify on cost grounds. However, SE could consider alternative ways of dealing with calls. Technical queries could be addressed by improving support documentation (reducing the demand for queries) and by publishing frequently asked questions (FAQs) on its website. Email support could also be offered. The processing of refunds and the handling of service contracts could be provided by an online process. This seems particularly suited to refund processing. Contracts, which appears to require a dialogue between the customer and SE, seems less of a candidate for this. Improvements in query handling might also allow SE to reduce the number of people working in the centre to a level where the cost of the service would be roughly the same as the outsourced equivalent.

The cultural context of outsourcing needs consideration. Outsourcing, and particularly offshoring, appears to have a negative impact on customers who, as well as having difficulty in understanding the call centre staff based in different countries, increasingly view offshoring as a way of exporting employment. As the number of people out of work in Arborium continues to grow, so the pressure increases on companies to bring work back in-house. SE might be able to make some marketing or public relations capital out of bringing support back in-house and into the country.

Service is a primary activity on the value chain. It is a key point where customers interact with an organisation and form their opinions about it. At present, many customers have a negative view of SE informed by their contact with the TCG call centre. Queries take too long to process and there are problems in understanding the call centre staff. SE needs to consider whether it is wise to outsource such a customer-focused activity. Perhaps the support activities (information technology, procurement) of the value chain are better candidates for outsourcing.

However, it also has to be recognised that support is not a core activity of SE. It is primarily an electronics retailer. It might be reasonable to conclude that a company such as TCG, dedicated to providing call centre support, should give a better service, leaving SE time to focus on its core competencies and activity.

In the short term, it would seem sensible to introduce improvements at the TCG call centre. The service is already relatively cheap and could be made cheaper by reducing the number of calls (through improved documentation and website support) and by reducing the number of calls which are not resolved. In the longer term, SE might wish to re-consider the wisdom of outsourcing a customer-facing service and they may, on ethical grounds, wish to invest in jobs in the country where most of their customers are. Publicising this socially responsible decision might also boost sales.

- 3 (a)** The first stages of risk management are the identification, descriptions and assessment of the risk. This assessment is primarily concerned with the *likelihood* of them occurring and the *severity of impact* on the organisation or project should they occur. Sometimes the likelihood is a subjective probability, the opinions of experienced managers or experts in the field. On other occasions, there is some statistical evidence on which to base the assessment. For example, in project 1, TKP identified that 20 IT software companies with annual revenues between \$3m and \$10m went out of business last year. This represented 10% of the total number of software companies reporting such revenues. Its report to the client suggested that there was a 10% chance of the current preferred supplier (who had a turnover of \$5m) ceasing business and this would have a significant short-term support implication. This compared to a business failure rate of 1% for software companies with an annual revenue exceeding \$100m. The client felt that the probability of supplier failure was too high, so eventually bought a software solution from a much larger, well-known, software supplier. In this case, the likelihood of the risk led the client to changing its procurement decision. The risk itself does not go away, large companies also fail, but the probability of the risk occurring is reduced.

The *avoidance (or prevention) of a risk* is a legitimate risk response. In project 1, the client could avoid the risk 'failure of the supplier' by commissioning an in-house bespoke solution. Similarly, TKP itself avoids the risks associated with trading in different cultures, by restricting its projects to clients based in Zeeland.

There are three further responses to risks.

Risk mitigation (or risk contingency) actions are what the organisation will do to counter the risk, should the risk take place. Mitigation actions are designed to lessen the impact on the organisation of the risk occurring. In project 2, TKP recommends that the producers of the iProjector should establish an escrow agreement with the company which produces the chip which enhances the quality of the projected image. It was agreed that design details of this chip should be lodged with a third party who would make them available to the producers of the iProjector should the company which owned the enhanced image technology cease trading. This is a mitigation approach to the risk 'failure of the supplier'. The supplier is relatively high risk (less than three years of trading, inexperienced management team), and the product (the iProjector) is completely dependent upon the supply of the image enhancing chip. The failure of the business supplying the chips would have significant impact on iProjector production. If the escrow agreement had to be enacted, then it would take the producers of the iProjector some time to establish alternative production. Consequently (and TKP have suggested this), it might be prudent to hold significant stocks of the chips to ensure continued production. In such circumstances, the need to mitigate risk is more important than implementing contemporary just-in-time supply practices. In some instances a mitigation action can be put in place immediately. In other instances risk mitigation actions are only enacted should the risk occur. The risk has been recognised and the organisation has a rehearsed or planned response. For example, in project 1, TKP has identified 'poor quality of current data' as a risk associated with the migration of data from the current systems to the proposed software package solution. It has established a strategy for data cleansing if that risk actually materialises. Importantly, the client knows in advance how to respond to a risk. It avoids making a hasty, ill-thought out response to an unforeseen event.

Risk transfer actions are concerned with transferring the risk and the assessment and consequences of that risk to another party. This can be done in a number of ways. TKP itself has liability insurance which potentially protects the company from the financial consequences of being sued by clients for giving poor advice. TKP has identified this as a risk, but is unlikely to be able to assess either the probability of that risk occurring or establishing meaningful mitigation measures to minimise the effect of that risk. Consequently, the responsibility for both of these is transferred to an insurance company. They establish the risk, through a series of questions, and compute a premium which reflects the risk and the compensation maximum which will have to be paid if that risk occurs. TKP pays the insurance premiums. TKP itself also transfers risks in project 2. It is unsure about how to establish patents and so it refers the client to another company. Transferring avoids the risk associated with 'establishing the patent incorrectly' and the financial consequences of this.

Finally, risk may be identified but just accepted as part of doing business. *Risk acceptance* is particularly appropriate when the probability of the risk is low or the impact of that risk is relatively insignificant. Risks may also be accepted when there are no realistic mitigation or transfer actions. In project 2, the producers of the iProjector are concerned that there is 'a risk that a major telephone producer will launch a product with features and functionality similar to ours'. This is a risk, but there is little that can be done about it. Risks of competition are often best accepted.

The discussion above is primarily concerned with deciding what action to take for each risk. Once these actions are agreed, then a plan may be required to put them into place. For example, establishing an escrow agreement will require certain activities to be done.

Risks must also be monitored. For example, in project 2, the risk of supplier failure can be monitored through a company checking agency. Many of these companies offer a continuous monitoring service which evaluates financial results, share prices and other significant business movements. Reports are produced, highlighting factors which may be of particular concern. Risks will also disappear once certain stages of the project have been completed and, similarly, new ones will appear, often due to changes in the business environment. Many organisations use a risk register or risk log to document and monitor risks and such logs often specify a risk owner, a person responsible for adequate management of the risk.

- (b) Every project is constrained in some way by its scope, time and cost. These limitations are often called the **triple constraint**. The scope concerns what has to be delivered by the project, time is when the project should deliver by, and cost is concerned with how much can be spent on achieving the deliverable (the budget). Quality is also an important feature of projects. Some authors include quality in their triple constraint (instead of scope), others add it as a further constraint (quadruple constraint), whilst others believe that quality considerations are inherent in setting the scope, time and cost goals of a project. How a particular project is managed depends greatly on the pressures in the triple constraint.

In project 1, the reluctance of the company to re-visit the business case means that the budget (or cost) of the solution is fixed. The implementation date might be desirable, but it does not seem to be business critical. It is an internal system and so any delays in implementation will not affect customers. It will also be a relatively seamless transition for most employees in the company. They already record the time record details which the new system will collect and so all they will see is a changed user interface. Only the direct users of the output (account managers and the project office) will be affected by any delay. The scope of the software package is also pre-defined. If it fails to meet requirements, then the users will have to adjust their expectations or business methods. There is no money to finance customisation or add-on systems, so in this sense the scope of the solution is also fixed. The quality of the software, in terms of its reliability and robustness, should also be good, as it is a popular software solution used in many large companies.

In project 2, the launch date is fixed. It has been heavily publicised, the venue is booked and over 400 attendees are expected, including newspaper journalists. Thus the time of the project is fixed. However, although orders will be taken at the launch, the product is not expected to ship until a month after launch. Thus the scope of the product shown at the launch date might be restricted and inherent quality problems might not yet be solved. Any defects can be explained away (this is a pre-production model) or, more effectively, they may be avoided by ensuring that the product is demonstrated to attendees, not used by them. The project manager must ensure that key functionality of the product is available on launch date (such as producing an image of a certain quality), but other functionality, not central to the presentation (for example, promised support for all image file formats) could be delayed until after the presentation. The company should make extra funds available to ensure that the launch date is successful.

- 4 (a) There are five primary activities in the value chain: inbound logistics, operations, outbound logistics, sales and marketing and service. Each of these is now considered in turn.

Inbound logistics are activities associated with receiving and storing the inputs to the production process. In terms of the costs identified in the scenario, inbound logistics are concerned with raw foodstuff costs, the costs of cans and the transport costs (goods inward). In two of these areas (raw foodstuff costs and can costs) Noble Pets appears to be competitive. However, goods inward costs are higher than any of its competitors. The fact that raw foodstuff costs and can costs are competitive makes it seem unlikely that the high goods inward costs are due to procurement failings. What seems more likely is that the location of the factory makes transport costs higher. Travelling on relatively minor rural roads and negotiating the congested town centre and the growing suburbs of Milton will affect the fuel economy of the trucks which make deliveries to the plant. This will place Noble Pets at a disadvantage compared with competitors who may be located adjacent to major motorways. There is also some reputational damage caused by complaints from local residents kept awake by the trucks.

Operations are concerned with the production activities associated with turning inputs into their final form, outputs. Production at Noble Pets involves the processing of the raw materials, canning and labelling. In the context of the scenario, these are represented by production costs and direct labour costs. Direct labour costs are roughly in line with its competitors. However, production costs are higher. This is probably associated with the ageing technology of the plant itself. Although it was innovative when it was installed 40 years ago, technology changes have meant that there are more reliable and efficient alternatives available. The physical site is also constrained by housing developments which were built subsequent to the plant. Thus the original plant could not be expanded to obtain any further economies of scale.

Outbound logistics are the activities involved with distributing the product to the customer, in this instance the wholesalers and supermarkets. This area is represented by transport costs (goods outward) included in the table given in the scenario. Like inward logistics, these transport costs are higher than Noble Pets' competitors. This is again partly due to the nature of the roads which lead to the factory and to the congestion in Milton. It also seems very likely that most of the company's

customers have relocated to locations which have good road links. Wholesaler and supermarket distribution centres are relatively flexible and footloose and most locate to easily accessible locations. A further problem with outbound logistics is the size of the trucks which can be used to carry the final product. The larger 44 tonne vehicles are banned from Milton town centre, so the company has to continue using the less cost-effective 36 tonne trucks. Again, it is likely that its competitors will be benefiting from the lower unit transport costs offered by the larger trucks.

Sales and marketing is concerned with the activities which make the buyer aware of the product (marketing) and also provide a means by which the buyer can purchase the product (sales). No details of the costs of sales and marketing are provided in the table. However, marketing is an acknowledged strength of the firm and has allowed the company to command a premium price for its products. The term 'noble' itself has positive connotations and appeals to the buyers' sense of duty to feed their pets with what appears to be a superior product. This is significant, because the firm is targeting the buyers of a product who are, in this case, not the consumers of that product. In fact, the consumers' feedback is probably restricted to the pet's reluctance to eat the food. So advertising campaigns which stress the need for people to give their pets the best and that the best is provided by Noble Pets are very effective. Interestingly, the trend to move from moist foods to dry foods (discussed in part (b)) has been driven by buyers wanting more convenient foods rather than the preferences of the pets themselves.

Service activities are designed to support or enhance the product. Normally, these include services such as installation, repair, training and part supply. In the context of Noble Pets, this can be perceived as the factual information sheets and website designed to promote responsible and appropriate pet ownership. Although the advice is product neutral, its association with Noble Pets enhances the reputation of the company and makes it more likely that consumers will buy its products. The apparently unbiased advice which Noble Pets gives to the community is again an acknowledged strength of the company.

Summary

Noble Pets is a company trapped by its location and its technology. These have led to high transport costs and uncompetitive production costs. It may be possible to address the latter by installing new equipment which is more efficient and reliable, but the business case for replacing all the moist food production facilities depends on future trends in the relative popularity of dry and moist foods. However, it is difficult to see how the company can reduce its transport costs if it remains at the current site. Perhaps it has to continue relying on strong branding and praiseworthy service to allow it to charge a premium price for a product to buyers who are unaware that its content is really very much the same as its competitors' cheaper alternatives.

- (b) (i) It is immediately clear from Table Two that the sales of moist pet foods are decreasing and the sales of dry pet foods are increasing. The decline in moist foods was particularly severe in the period 2007–2010. Since then, the downward curve has flattened out. The rate of increase for dry food sales has decreased in the last few years, but it is still showing healthy year-on-year growth. This change in pattern is due to the buyers of product requiring something which does not smell and can be left for longer in the pet's bowl.

The total sales of pet foods are worth closer examination.

Year	Moist food		Dry food		Total Production (000s tonnes)
	Production (000s tonnes)	Percentage	Production (000s tonnes)	Percentage	
2007	370	55.89%	292	44.11%	662
2008	350	53.27%	307	46.73%	657
2009	331	50.77%	321	49.23%	652
2010	325	49.69%	329	50.31%	654
2011	315	48.02%	341	51.98%	656
2012	310	46.90%	351	53.10%	661
2013	310	46.34%	359	53.66%	669

This shows that, overall, pet food sales declined from 2007 to 2011 and only in 2013 rose above the 2007 level (and even then, by only just over 1%). Thus Noble Pets has been competing in, at best, a stagnant market dominated by four companies. The only way that any of these companies can grow is to take market share from each other and hence (in Porter's terms) competitive rivalry is high, compounded by low switching costs from one brand to another. It is probably these strains within the industry which has prompted Noble Pets management to ask the Milton plant to review its value chain.

The Milton plant has also suffered from a change in buying tastes. In 2007, moist pet foods accounted for 55.89%. In 2013, this figure had reduced to 46.34%. Although Noble Pets' share of this market remains the same (30%), this is a reduction in real terms of 18,000 tonnes of production (from 111,000 to 93,000 tonnes).

- (ii) The regression analysis for moist food sales suggests the following line of best fit.

$$Y = a + bx$$

$$Y = 369.5714 - 9.86x$$

The negative value of b shows that the slope of the curve is downwards. Substituting values for 2014 (8), 2015 (9) and 2016 (10) into this equation gives the following (rounded) forecasts.

2014: 291 2015: 281 2016: 271

These values do appear to be too low, given the flattening out of demand in 2011, 2012 and 2013. The line of best fit is influenced by the rapid decline in the first four years of the analysis. Thus these forecasts appear too pessimistic when extrapolating the linear line of best fit.

The correlation coefficient r is negative (-0.94432), which is what would be expected given the production decline. The coefficient of determination of 0.89174 (r^2), suggests that 89% of the variation can be explained by the passage of time or, more sensibly, by some factor or factors which have changed over this time – such as buyer behaviour. However, the correlation coefficient measures the strength of the linear relationship, and there does appear to be some obvious curve in the original data values.

Although the market for moist food has declined rapidly in the last few years, this decline appears to have been arrested. However, the steepness of this decline, in the early years of the analysis, has meant that the line of best fit produces estimates which appear too pessimistic. A free-hand extension of the curve joining the actual data points is likely to give estimates of over 300,000 tonnes for the next three years. This will have to be taken into account when deciding any further investment in the Milton plant. If Noble Pets retains its 30% share of the market, it still has a demand for 90,000 tonnes of moist pet foods. The other two factories producing moist pet food are relatively small, producing 40,000 tonnes between them. Thus a detailed financial analysis can reasonably be based on a demand of at least 50,000 tonnes in the period 2014–2016, even if the other plants work at full capacity.

- 1 (a) (i)** 1 mark for each relevant point up to a maximum of 7 marks for each company in the Group, up to a maximum of 21 marks for the answer. Within the analysis, marks may be given for the correct calculation of market share change (1 mark), market size change (1 mark) and appropriate classification using a portfolio analysis model (1 mark).
- (ii)** 1 mark for each relevant point up to a maximum of 15 marks. Within the analysis, it is possible for the candidate to calculate and interpret a number of financial ratios. Marks will be allocated for the correct calculation and interpretation of gross profit margin, net profit margin, ROCE, liquidity, gearing, payables and receivables, up to a maximum of 6 marks.
- Professional marks: Up to 1 mark each for the clarity, structure, logical flow and appropriate tone of the answer.
- (b)** 1 mark for each relevant point up to a maximum of 10 marks.
- 2 (a)** 1 mark for each relevant point up to a maximum of 8 marks for evaluation of the problem. 1 mark for each relevant point up to a maximum of 8 marks for suggested improvements. A maximum of 15 marks for this part question.
- (b)** 1 mark for each relevant point up to a maximum of 10 marks. 1 mark will be allocated for the correct calculation of the daily cost of delivering the service in-house.
- 3 (a)** 1 mark for each relevant point up to 15 marks.
- (b)** 1 mark for each relevant point up to 2 marks for principles. 1 mark for each relevant point up to a maximum of 4 marks for each project. Maximum of 10 marks in total.
- 4 (a)** 1 mark for each relevant point up to a maximum of 15 marks.
- (b) (i)** 1 mark for each relevant point up to a maximum of 5 marks.
- (ii)** 1 mark for each relevant point up to a maximum of 5 marks. This may include 1 mark for arithmetically correct forecasts and 1 mark for explaining the coefficient of determination.