
Answers

1 (a) Inbound logistics and procurement

Inbound logistics is concerned with activities associated with receiving, storing and disseminating inputs to the production process. It encompasses materials handling, warehousing, inventory control, vehicle scheduling and returns to suppliers. It is responsible for bringing raw materials into the organisation and storing it ready for use. Standard window and bespoke window production pose different problems for the department.

In standard window production components tend to be bought in bulk and stored on-site waiting production. This incurs storage costs and there may also be costs associated with wastage and obsolescence. These costs are exacerbated by the problem of mixing standard and bespoke window production. The scenario suggests that bespoke production often displaces standard production, for example, in order to accommodate a customer's increasingly urgent request. This means that components bought in to fulfil a planned standard production run can be left in storage for longer than was anticipated. However, standard window production does facilitate the bulk buying of components and so raw materials should be cheaper.

In bespoke production, there should be fewer storage costs, as the components are moved quickly through to production to fulfil a customer's order. However, because component lead times are lengthier, buyers often pay more for the windows to secure quick supply and to reflect the lower order quantities normally associated with a specific bespoke order.

At QTP, raw material costs are significantly higher for bespoke windows than for standard windows and this reflects the premium prices expected to be paid for low-volume urgent supplies. However, storage costs (part of which will be storage of raw materials) are much lower, suggesting that the order quickly moves through the QTP factory. However, the number of complaints raised by bespoke window customers perhaps suggests that for many, the order does not move quickly enough.

For both standard and bespoke production, the supply of timber is a problem. Prices are rising and there is an increasing shortage of specialist timber. However, from the perspective of QTP, inbound transport is not a problem. This is provided by the suppliers.

Production (Operations)

Production is concerned with the activities required to transform inputs into the final product. In this case it is the production line process of QTP, transforming timber, glass and fittings into standard and bespoke windows. As well as assembly, production also considers packaging and equipment maintenance.

In most organisations, production is most effective when producing long runs of standard products to inventory, minimising set up time and set down time (and associated costs). The production of well-understood standard products reduces the need for quality control and also minimises wastage. In contrast, bespoke production is usually associated with relatively short runs (reflecting individual customer order quantities) and higher set up and set down time (and costs). Specialised bespoke set ups have to be carefully quality-controlled and wastage rates (because of the unfamiliarity with the task) tend to be higher.

These general observations appear to be supported by the data at QTP. Set up and set down times for bespoke windows are much longer, meaning that the production line is idle for twice as long. The average production run is also shorter and wastage rates are higher. The number of customer complaints (per thousand units) is also higher. Some of these complaints are likely to be about the quality of the delivered window. Bespoke units have to be exactly to the specification of the customer, whilst standard units are to the specification of QTP. It is the responsibility of the customer to ensure that these standard units are fit for purpose.

The production manager's enthusiasm for standard windows is understandable. It maximises production efficiency, at the same time minimising wastage and complaints.

Outbound logistics

Outbound logistics is concerned with the activities associated with collecting, storing and physically distributing the product to buyers. It encompasses finished goods warehousing, material handling, delivery vehicle operation and order processing. Again, different issues are raised by standard window and bespoke window production.

Standard production leads to higher storage costs as windows are stored waiting to be sold to potential customers. The storage of these finished windows may lead to wastage, as windows are made unsellable due to storage conditions: damp, extremes of temperature, fire, flood. Pilfering from employees and obsolescence, as demand dries up for a standard window, may also affect stored windows.

Once sold, customers expect almost immediate delivery of stored windows, making it difficult to plan the routes of the delivery fleet in advance, particularly as that fleet also has to deal with the urgent delivery of bespoke orders. The effective use and maintenance of its own fleet of vehicles is a clear problem for QTP.

In contrast, delivery for bespoke windows produced to order can be planned well in advance and the customer given a specific delivery date. In general, the windows are delivered as soon as they are manufactured and so storage costs are lower. This is reflected in the QTP data where storage costs of bespoke windows are one third those of standard windows. Transport costs are also lower, reflecting the relative ease of planning the efficient delivery of bespoke orders.

Marketing and sales

These are activities associated with inducing the customers to purchase a product and then facilitating that purchase. It includes advertising, promotion, quotations and pricing.

At QTP, marketing and sales is rewarded on the basis of revenue per window sold. The data suggests that the average revenue per window is higher for a bespoke window than it is for a standard one. Consequently, there is an incentive to steer customers towards bespoke windows rather than standard ones.

Marketing and sales also argues that the bespoke approach means that customers always receive exactly the windows they want, rather than ordering standard windows which do not fit their exact needs. This pre-sales customer design service is perceived as an important strength of QTP and it is what distinguishes the company from its competitors. The marketing and sales director claims that 'we have sales people who really understand the windows and what customers want and need. We are not trying to sell them windows off the shelf, just because we have them' in inventory. Fulfilling exact requirements is an important part of building the customer relationship. It is claimed that some important customers purchase standard windows from QTP even when they could be sourced cheaper elsewhere, because of QTP's past flexibility in developing bespoke windows for them. Thus there are important cross-selling opportunities between standard and bespoke windows.

However, the bespoke approach causes both internal and external tensions. Pressure from customers leads to the marketing and sales department putting pressure (in turn) on inbound logistics and procurement to secure the quick delivery of the required components. As noted already, this leads to high raw material costs. Once the raw material has arrived, pressure is put on production to expedite the order and postpone planned standard production runs. This leads to machine and labour inefficiency. Marketing and sales contend that bespoke orders are still more profitable than orders fulfilled from inventory, but the production manager disputes this.

The bespoke approach probably also demands the active management of customers. It is possible that the customer is constantly enquiring about the status of their order, and delivery on the planned date is essential if the customer is to achieve its own deadlines and profits.

- (b) **Tutorial note:** *The analysis of standard window production might use the current pattern of machine utilisation or it might use a pattern where the production run is uninterrupted. Credit will be given for either and for both.*

Financial analysis

Standard windows:

Machine utilisation (average day)

Set up	Production	Set down	Set up	Production	Set down
10 minutes	4 hours	20 minutes	10 minutes	4 hours	20 minutes

Effective machine time per day: 8 hours

Number of units produced: 8 x 12 (8 hours, 12 units per hour) 96 units

Average window wastage per day (96 x 2%): 1.92

Sellable production per day: 94.08 units

Revenue: 94.08 x \$85 = **\$7,996.80**

Cost of production/window

	\$
Storage cost	15
Raw material	20
Transport cost	15
Labour cost	12
Machine cost	8
Total	70

Production cost: 94.08 x \$70 = **\$6,585.60**

Daily contribution: \$7,996.80 – \$6,585.60 = **\$1,411.20**

Bespoke windows:

Set up	Production	Set down	Set up	Production	Set down	Set up	Production	Set down
15 minutes	2 hours	45 minutes	15 minutes	2 hours	45 minutes	15 minutes	2 hours	45 minutes

Effective machine time per day: 6 hours

Number of units produced: 6 x 10 (6 hours, 10 units per hour) 60 units

Average window wastage per day (60 x 5%): 3

Sellable production per day: 57 units

Revenue: 57 x 110 = **\$6,270**

Cost of production/window

	\$
Storage cost	5
Raw material	40
Transport cost	10
Labour cost	15
Machine cost	10
Total	<u>80</u>

Production cost: $57 \times \$80 = \$4,560\cdot00$

Daily contribution: $\$6,270\cdot00 - \$4,560\cdot00 = \$1,710\cdot00$

So, on this basis, bespoke production produces less revenue per day, but is more profitable.

Given the window mix at the moment, the expected daily contribution would be:

$\$1,411 \times 0\cdot7 + \$1,710 \times 0\cdot3 = 987\cdot70 + 513\cdot00 = \$1,500\cdot70$

The data is based on a mixed standard/bespoke production cycle where planned production runs are often cancelled or interrupted by bespoke production requirements. Thus the pattern of use in a production facility dedicated solely to standard windows should be different. For example, in a fully standard window production environment it should be possible to increase effective machine time to 8 hours 30 minutes (1 set up, production, 1 set down). This would lead to a production run of 102 units (8.5 hours \times 12). Given a 2% wastage rate, this would lead to an average daily production of 99.96 units, producing a revenue of $99\cdot96 \times \$85 = \$8,496\cdot60$. Cost of production would be $99\cdot96 \times \$70 = \$6,997\cdot20$.

Thus contribution would be $\$8,496\cdot60 - \$6,997\cdot20 = \$1,499\cdot40$, still below the daily contribution of the bespoke alternative. However, this assumes that all other costs would remain the same in a fully standard configuration.

The data provided only concerns direct costs. There is no consideration of overheads. It may be possible that a production line dedicated to standard window development may allow for a reduction in marketing and sales staff and service employees as the windows need less negotiation and support. In contrast, a production line dedicated to bespoke windows may lead to fewer warehousing and distribution staff. Revenues will also be less, so there may be an opportunity to lose staff from general administrative functions.

(c) Switching completely to standard windows production

Inbound logistics: It should be possible to reduce the storage costs of components, as they should be stored for shorter periods as production is now based on a planned cycle, uninterrupted by bespoke work. Less time in storage should also reduce wastage and obsolescence.

There may also be opportunities for exploiting just in time (JIT) supply principles, moving storage costs to the supplier and so reducing inbound storage costs at QTP even further. The company might also consider backward integration, looking to acquire timber production facilities so helping secure the supply chain and also, potentially, reducing raw material costs.

Production (Operations): Production efficiencies should be gained from being able to plan production in advance. If set up and set down times remain the same (and this seems a reasonable assumption), then production can be increased to 102 units per day, before wastage. The calculation for this is shown in part (b) of this solution.

Outbound logistics: Planned production should lead to a better utilisation of the distribution fleet. However, this is an area where QTP might consider outsourcing to a specialist logistics company who can exploit economies of scale which are not achievable with a small fleet of vehicles. It can be argued that distribution is not a core competence of the company and would benefit from outsourcing.

Marketing and sales: There are opportunities for head count reduction in marketing and sales as sales switch to standard windows with specifications available in catalogues and on the internet. The focus is now on promotion and order taking, not the negotiation of individual orders. In standard window production, sales forecasting is paramount. This is an acknowledged weakness of the current marketing and sales team and this would have to be addressed.

Overall: In this approach, QTP is an order-obtaining organisation, obtaining orders from customers for goods which it has already produced. Standard window production to inventory should lead to a more efficient window production. However, it may also lead to the loss of customers who value the company's ability to deliver a mixture of standard and bespoke windows. There is evidence to suggest that such customers currently place orders for standard windows even though they could be sourced more cheaply elsewhere. QTP might lose these customers in the future.

Focusing on standard production may also mean that QTP is focusing on a commodity-type market where there will be continual downward pressure on prices.

Switching completely to bespoke production

Inbound logistics: Because orders are definite, component storage costs should be relatively low, but components cannot be ordered in advance and bulk discounts negotiated. Thus in this case there seems an even stronger case for backward integration. Securing supply is even more vital in bespoke production where supplying the customer at the promised time is paramount. It is also acknowledged that raw material costs are currently high for bespoke windows and so owning the means of timber supply should help reduce this cost.

Production (Operations): Production is driven by definite orders from customers, not 'made to inventory' production runs based on forecasts. Freeing up capacity should allow the quicker production and delivery of bespoke orders. Production planning is now primarily concerned with scheduling definite orders to meet the agreed delivery date.

Outbound logistics: Inventory holding costs should be relatively low as deliveries can be planned around customer order dates. Because these are well known in advance, then a delivery schedule can be planned, although this is likely to be sub-optimal, based around the need to deliver to certain locations on certain dates, rather than planning an optimal route around standard delivery locations. Overall, fewer units will be produced and so it might be possible to reduce the size (and hence cost) of the delivery fleet. The certainty of deliveries might also make this a strong candidate for outsourcing. This could deliver significant cost savings.

Marketing and sales: Moving to bespoke production plays to the strengths of the current marketing and sales department. These could be perceived as core competencies which the company needs to exploit. Furthermore, because they are rewarded on average revenue per window, this will also appeal to the department from a reward perspective. The need to acquire new customers may make other elements of the marketing mix, such as promotion, increasingly important.

Overall: In this approach, QTP is an order-receiving organisation, producing windows for orders it has received. This is the preferred approach of the current marketing and sales team. Bespoke production will still allow QTP to fulfil standard windows (they will just be produced as bespoke items) and so customers' needs will be fulfilled, although they may have to pay higher prices than before for such windows. QTP will be positioning itself as a niche provider, able to charge a premium for a specialised service. So, its market positioning will be quite different.

- 2 (a) SRO has recognised the importance of the need for functioning systems at all times, and so have ensured that a backup is available. This is key, as any loss of functionality will affect its ability to operate, given that the entire operations are carried out online. However, there are some problems with its general controls, which could severely disrupt business.

General controls

These are controls which relate to the computer environment and, hence, could affect any or all applications in use. These may be policies with regards to the treatment of hardware or procurement, for example, or could be specific security procedures which are in place. SRO appears to recognise the need for general controls by having a separate computer centre, with secure access, a firewall and a password system to protect against unauthorised access. However, despite this recognition, there are a number of areas where the general controls are inadequate.

The computer centre is not secured despite the capability to do so. The reason given is not sufficient to risk security controls for. Although the 'majority of staff' at headquarters are IT support personnel, there are still some staff who should not have access to the computer centre. Indeed, not all IT staff need access to the main servers. Temporary staff should not fulfil roles which are strategically important and so, to risk the entire operations by providing them with unrestricted access, SRO is not showing adequate control. Similarly, the use of a general user id and simple password means that they have access not just to the hardware, but to the entire system too. The user id and password would be simple to guess should anyone be attempting to hack into the system. SRO must immediately revert to the fingerprint access system, and must ensure that all staff are aware of the importance of preventing unauthorised access. The 'administrator' user should be removed immediately, and only those with administrator rights should be afforded them in conjunction with their unique user id. Temporary staff should be issued with unique user ids so that SRO can ascertain who has carried out any transactions on the system. In addition, users should be reminded of the necessity of changing passwords regularly and not writing them down anywhere. This could be enforced in training and by the provision of a procedures document.

The firewall has been turned off to allow the intelligent software to upload its finding onto SRO's system. Unfortunately, turning off the firewall not only allows this to happen, it also opens the systems to the threat of hackers. The firewall should be immediately re-installed. If it is finding difficulties with the application, it may be that there is a security risk with that. This should be thoroughly investigated and corrected.

SRO has taken precautions to have a backup system in place as contingency against disasters. However, the system should be in a remote location, rather than in the same location as the main servers. If there were a fire, for example, both the main servers and the backup servers would be affected. Similarly, by having a direct link between the servers, any data corruption or unauthorised access would affect both the servers and their backups. There should be a slight time delay in the connection to prevent this from happening, so immediately a problem is detected the link could be terminated, allowing the backup to be unaffected.

The controls mentioned above would affect all systems. There are some controls which affect only specific applications used by the organisation. These are known as application controls and help ensure that transactions are authorised, and are completely and accurately recorded, processed and reported.

Application controls

There are some issues with the application controls on the review system, which form a threat to the accuracy and reliability of the information provided on the system.

The intelligent software itself appears to provide out-of-date information and there is, currently, no way of assessing whether this is the case. A verification check may be necessary to ascertain the date of the initial posting of information and whether this is earlier or later than the date of information already held.

The reviews posted by users may, or may not, be a fair representation of the service offered. SRO does not verify that the information is correct, nor do they verify whether the users are who they claim to be. Indeed, the ability for users to post anonymously means that they could post whatever they like. There is a possibility that the users may be employed by the stores being reviewed, and giving positive reviews in order to benefit from them. Alternatively, they may be posting negative reviews about their competitors, again compromising the reliability and independence of the reviews. If this were happening, and were to be discovered, it could threaten the entire existence of SRO. It may be that a control needs to be included whereby reviewers can only submit a review if there has been an actual transaction with the store. Similarly, the stores should have the opportunity to respond to a review, made simpler if there is a transaction identifier available.

Overall, it appears that, despite having many of the tools in place, SRO is not using them adequately. Procedures should be clearly defined and adhered to in order to protect from such risks.

- (b) There are two areas of concern identified by SRO:

Commercial conflicts of interest

SRO's business objective is to 'provide an unbiased review of online stores to ensure the customer has all available information'. So, to meet this objective they should focus on both the terms 'unbiased' and 'all available information'. The fact that SRO provides some reviews itself, which, although honest, seek to show certain stores in a positive light, goes against this objective.

The dilemma for SRO is that the online stores themselves provide both sets of revenue streams for SRO. It is in SRO's interest that the reviews are accurate, otherwise they will lose its users who rely on SRO for an honest and truthful review. Should they use another comparison site, or shop around themselves, SRO will no longer gain commission or advertising revenue. However, if the reviews are negative, it is also unlikely that the store in question will advertise in future on SRO's site and commission sales will also fall, as users of SRO's site will not follow links towards a store with negative reviews.

SRO either needs to change its business objective to remove the terms 'unbiased' and 'all available information', or they need to consider how to do this whilst maintaining their revenue streams. Ideally, the provision of honest reviews should encourage the stores to provide a good service at all times and then this would no longer be an issue.

Relocating company operations

SRO is considering moving its operations to an overseas country with tax and cost benefits. Whilst this may seem to be an attractive option from a financial perspective, there are other elements which should be considered.

The dilemma is that the benefits obtained financially may be counteracted by operational problems. The country they are considering relocating to is poorly regulated and does not have legislative controls with regards to the quality of information systems or security of data contained within them, even for personal data. This could lead to the risk of loss of personal data of the registered users, which could cause great reputational damage, should it occur. SRO has already recognised some control issues with its systems and it is likely that these would be worsened in a poorly regulated country.

It is mentioned that the country's culture is such that accepting unauthorised payments is considered acceptable, even if it is not publicly acknowledged. SRO would have the dilemma of whether to behave within the culture of the country, even though such business behaviour may be seen as illegal or considered unethical in its home nation, or whether to take a stance against it, and thus put themselves at a competitive disadvantage. The latter would be in line with their current code of conduct, but it may be difficult to convince locally sourced staff of this.

Given that Amy created the company quite recently, in 2010, with the aim of overcoming the unethical behaviour she perceived to exist in the online retail industry, it would appear that both of the dilemmas considered above would risk the entire paradigm of the company, its reason for existence.

- 3 (a) Dilip is justified in his decision to attempt to exploit the principles of electronic marketing, as companies can benefit greatly from this approach. The five principles referred to in the question requirement may be exploited as follows:

(i) **Intelligence**

The internet can be used as a low cost option of gathering intelligence about customers and potential customers. The website could use cookies to track the customers' mouse clicks, and see what has been of interest to them, and at what point they leave an area of the site. For example, do they get as far as looking at availability of a holiday and then leave the site when the price is displayed, or do they move on to another area on reading details about the hotel being offered? This can help to determine new product lines and other elements of the marketing mix.

If customers register on the site, then the company can also track their individual preferences over time, and this can help to exploit individualisation. As Dilip says, the company currently has no idea whether customers even read their brochure. The use of e-marketing will allow analysis of who visited which part of the site, how long they stayed there, whether they went on to get more information and how many times they re-visit the same page.

(ii) **Individualisation**

The current approach of sending the same marketing, covering all holidays, to every client is not appropriate for the luxury, bespoke service which Inspirations wishes to offer.

Inspirations should ensure it makes use of the features of promotion which offer individualisation, given that they are offering a bespoke service, which is, by its nature, individual. This is only possible if the company also exploits the use of intelligence, as previously mentioned. For example, if a customer has shown interest in gourmet food holidays, information relating to these can be shown on the home page. It may then offer a personalised home page when that customer visits again, with specific suggestions for them.

Customers should be able to save information on holidays which they are interested in and return to these. Inspirations could send emails if there is anything similar which may be of interest to those customers. Or, if a customer has booked a specific holiday in the past, such as a river cruise, the company may send them an email in the future with similar holidays.

(iii) Interactivity

This principle works on the idea of a 'pull' marketing approach, whereby the customers are driving the marketing and selling process, rather than the company 'pushing' its holidays at them. Given that the company wishes to sell bespoke holidays, this element is crucial.

The interactivity should begin with the use of search engines, such that when a potential customer types 'luxury holidays' or 'bespoke holidays', for example, Inspirations is one of the first to appear in the search results. Once on the website, the customer should be able to search from easy menus, such as 'destination' or 'holiday type'. The customer should then be shown a range of options, and further action on their part may lead them to further details regarding the holiday being viewed. In this way, the customer will only view holidays and further information which is of interest to them.

Further interactivity may be provided in the form of a two-way dialogue with a holiday adviser, through an online chat function. This could work well with HC's new business unit if the adviser is knowledgeable and able to offer enhanced services, such as managing the overall booking. This could be a valued differentiator for Inspirations: offering a personalised service, as if in-store, without the customer having to be inconvenienced by visiting the store.

(iv) Integration

Holiday companies could make great use of integration, which is about sharing knowledge and marketing activity between different parts of the company. For example, if customers switch to Inspirations holidays, having previously been a customer of HC, this information could be shared such that there is already some knowledge of the customers' preferences.

Inspirations could also integrate the different elements of the holiday experience and the databases of different companies supplying the services. For example, it may be possible for the customer to book hotels, flights, car hire and excursions. Inspirations could integrate the information, such that once a customer has booked a holiday, marketing information could be sent for the elements which have not been included. Once a holiday has been booked, the website may offer suggestions for upgrades and further options. If, for example, a holiday is booked at a particular destination, then trips available at that destination may be marketed. Depending upon the holiday purpose, different add-ons could be offered. For example, the gourmet trips for food lovers could forward details of excursions to food production facilities, with booking offers if combined with an existing holiday.

(v) Independence of location

Independence of location allows the possibility of selling into global markets. Provided Inspirations has access to flights departing from different countries, there is nothing to stop it operating as a global travel provider. It is intending to make more use of online sales, with the internet being the main source of marketing this new business, therefore high street branches are not necessary in this instance.

In order to exploit the global market, Inspirations must ensure that it offers the ability to view holiday prices, and pay, in foreign currencies. It should also ensure that it considers the current trends of holiday destinations for different markets worldwide.

- (b)** There are a number of influences which must be considered when determining a pricing strategy which will deliver the business and corporate objectives of an organisation.

Mission and objectives

Clearly, the objectives which are to be achieved should form a key element when determining the pricing strategy. HC's new business unit has the mission of 'delivering a high quality service for discerning travellers', and aims to 'achieve revenue of \$100m by 2018'. If the business unit is aiming for high quality, then its pricing strategy should be in line with this, in order that customer perception is in line with what the company hopes to deliver. This may lead to a premium pricing strategy for Inspirations to maintain the suggestion of a difference between the standard holidays offered and the new range of holidays. Prices should be higher to reflect the quality offered. HC must also consider the desired revenue, 25% of total company revenue but only 5% of volume; this suggests that the pricing must be set at a higher level than current offerings in order to achieve this. Price is a key element in differentiating its product.

Whilst organisations may use discounting as an aid to getting market share, a clear objective of HC, the use of discounting, in this market segment, would contradict the desired message of premium quality.

Cost

If a price fails to take cost into consideration, then the organisation may not be profitable and difficulties may arise in the long term. Although organisations have been known to sell products as a loss leader in order to attract other purchases, it does not seem as if this would be an appropriate strategy for Inspirations. It must cover its costs when deciding its prices.

The premium holidays offered will make use of the best hotels, with high ratings and quality features, and intend to use premium airlines and seat options only. These will be costly to the company and should be incorporated into the price. Inspirations could choose to price each individual option on a 'cost plus margin' basis, or simply ensure that the overall cost is covered when deciding the final price using some other basis.

Competition

There are a number of competitors already operating in the luxury holiday market, and Inspirations must consider what it is charging for equivalent services. Given the transparency of information available over the internet, customers will easily be able to compare holidays and prices. Inspirations does not own the hotels it intends to use for the holidays offered, and will not have exclusive use of them. Therefore, the price should either match those offered by similar competitors, or they should differentiate in some way and therefore be able to charge a justifiably higher price.

Customers

Customers will have a limit regarding what they are prepared to pay for a particular offering. Inspirations must ensure that its pricing is within that limit for its target customer group. Given that these are luxury holidays, Inspirations are targeting higher income customers. Whilst price competition may not be the main focus for these customers, they will still want perceived value for money. This will determine the upper price they are prepared to pay.

Controls

There are a number of external influences affecting the travel industry. Although it is often the airline or the hotel company which is subjected to these influences, such as local passenger taxes and visa requirements, the holiday company must consider these when determining its pricing strategy. For example, should these be incorporated into the price of the holiday or shown separately? Also, can the airline or hotel companies impose controls on the holiday company, such as a legal requirement not to discount their prices in any way?

Overall, therefore, Inspirations should consider a combination of the above influences to ensure that it sets a price which delivers a profitable product which meets the corporate objectives.

- 4 (a) The head of the authority has not fully learned from the prior mistakes of WHPA's software projects. Had the four-stage process been followed, the authority might not have implemented systems which did not fulfil their needs, and caused operational difficulties.

The content of each of the stages, and their significance to this project and to WHPA, may be summarised as follows:

Stage one – Evaluate whether a COTS solution is an appropriate approach

The business case for the system should be assessed to determine whether a COTS solution is appropriate, or whether a bespoke system would be better suited to the needs of the organisation. The head of the authority seems fairly clear that a COTS would be most appropriate, although the decision appears to be mainly on cost grounds. It is likely that this would be important, given that the majority of funding is from taxation, but it should not be the only deciding factor. Complexity of a process often has an impact on whether a COTS package is appropriate, as does the availability of suitable packages. It does not seem in this scenario that the process to be automated is particularly complex and it also seems relatively routine in nature. This would need to be verified, but if it were true, then the COTS approach is probably the more appropriate.

If this stage were omitted, it is possible that the authority would make the wrong choices on the basis of cost alone. This could make the entire project a waste of time and funding as it may lead to another failure.

Stage two – Define the requirements for the new software

It is quite clear from the scenario that WHPA has suffered in the past from a failure to define requirements correctly. Hence, this is not a good reason for omitting this step entirely. The head of the authority suggests they 'go straight to stage three and look at competing packages to see which provides the best features', but it would be impossible to ascertain which was most suited if the requirements had not been defined. Indeed, if they omit this step, then it is likely that this system will also require workarounds as the previous systems have done.

Requirements defined within this step will encompass various functional and non-functional requirements. Functional requirements should include the operational processes which must be possible using this system, such as the ability to adjust payroll for one-off events. It is important to consider potential future requirements, such that the system will continue to be valuable into the future.

Non-functional requirements may include requirements from the supplier, such as support mechanisms. It would appear that WHPA is limited in its IT support provision, so this may be considered an important requirement.

There may also be technical requirements. It is likely that the authority will not wish to spend more than necessary and therefore it could be essential that the software is able to operate on the existing hardware.

Stage three – Evaluate competing packages

Given the responsibility towards the public in providing a value for money service, it is important that WHPA gets the best package in terms of meeting their needs within budgetary constraints. By evaluating competing packages, rather than simply considering one, the value for money should be greater as the best package will be selected.

The evaluation process could follow a ‘tender’ approach, whereby suppliers bid to supply the software required, giving feedback to them on which requirements are met (or not) and to what extent. The process should certainly be formalised, and this could help to provide accountability to the public that the best system has been selected. The tenders should be evaluated against the requirements given at stage two, in addition to any other criteria, such as implementation deadlines, overall budget, etc. The comparison may use a weighted ranking basis to ensure the decision is not based on a single factor, but gives the best option overall. Without this, a public organisation may be tempted to simply choose the cheapest option, given their budgetary limitations.

Stage four – Implement the selected package

There should be a planned implementation which includes testing, training, installation and data transfer. This is a key part of the process which connects strongly with the overall reliability of the system. A system which is not tested adequately by users (in addition to the software developers) may not meet the needs of the organisation, or may be found to be lacking user-friendliness. A failure to train staff could lead to resistance and problems in data transfer could invalidate the entire output of the software.

- (b) The HR director is concerned that the focus is simply on the information technology rather than the people, processes and organisational structure. The POPIT model recognises the equal importance of each when enhancing a business process. This has been developed to take a more holistic view of process change, considering those elements which could affect the success of the project.

Processes seem to be a key area which should be considered. One process which is particularly important is the level of IT support available within the organisation. Organisations with poor IT support in place are likely to need to address this, as part of process improvement. WHPA has been subjected to system workarounds, having to ‘fiddle’ data to achieve the desired output in the payroll and HRM systems, for example. This is probably due to the very limited IT support available.

Manual processes should be identified to determine whether there is scope to eliminate these. It would appear that this has already been done to an extent by considering the need for an ERPS to assist in organisation-wide reporting, currently a labour-intensive process. WHPA should take the opportunity to see whether there are other such processes which could be eliminated. Given the few processes described, none of which seem to run efficiently, it is likely that there may be others.

The organisation aspect of the POPIT model considers elements of structure, management configuration and support and roles and responsibilities, for example. The board seems to support this change in the organisation, but it is likely to also impact upon the management in the individual hospitals. It needs to be considered whether the management in the separate areas of the organisation will support this change. If not, it could have an impact on the success of the change project. The board may need to convince them that the new system will make life easier for all, rather than be introduced to ‘spy’ on their budgeting and management control systems.

Roles and responsibilities should also be considered, specifically within the change process itself. Who will be involved in the change project and how will it affect their day-to-day roles? They will need to be given clear guidance of what is expected as well as the resources needed. For example, it seems that the head of the authority is keen to keep costs low; those involved would need to be assured that the project would be given sufficient resources to succeed.

People can be a key reason for failure of a project. If there is resistance, then it may impede the progress of the project, impact upon the end result, or even halt a project completely. Staff morale and motivation should be taken into consideration and the authority should ensure that any possible negative impact is mitigated. It may be that reward systems need to be introduced which align with the new process and ultimately the goals of the authority.

The skills also need to be considered. It would appear that the authority does not currently run a high level of information systems. Therefore, personnel may not be in possession of adequate skills for the new system. This in itself can be a cause for resistance. Training should be considered as part of the change process.

Although IT skills may not be fully present, the staff should be skilled in their individual area of work. For this reason, they should be encouraged to participate in the design of the new system. Had this happened in the past, the systems might have been designed to fully meet departmental needs, rather than finding workarounds.

Overall, therefore, the HR director is right to consider the other elements of the POPIT model, as to do so should positively affect the outcome of this project.

- 1 (a)** 1 mark for each appropriate point within each department up to a maximum of 5 marks. Four departments are under consideration giving a total maximum of 20 marks.
- (b)** Up to a maximum of 12 marks.
For both standard and bespoke windows (4 marks each) – as below:
- Effective machine time per day (1 mark)
 - Number of units produced per day (0·5 marks)
 - Wastage per day (1 mark)
 - Revenue (0·5 marks)
 - Production cost (0·5 marks)
 - Daily contribution (0·5 marks)
- Recognition that this is based on current pattern (1 mark)
No consideration of overheads (up to 2 marks)
Sensitivity analysis (up to 2 marks)
- (c)** 1 mark for each aspect of the value chain/department up to a maximum of 4 marks per department up to a maximum of 14 marks.
Professional marks are given for the structure, tone, coherence and clarity of your briefing paper (4 marks).
- 2 (a)** Up to 1 mark for each appropriate point up to a maximum of 15 marks.
- (b)** Up to 1 mark for each appropriate point up to a maximum of 10 marks.
- 3 (a)** Up to 3 marks per heading discussed, up to a maximum of 15 marks.
- (b)** Up to 2 marks per heading discussed, up to a maximum of 10 marks.
- 4 (a)** Up to 4 marks per heading. Up to a maximum of 16 marks overall.
- (b)** Up to 3 marks per heading. Up to a maximum of 9 marks overall.