CPA IRELAND | CERTIFIED PUBLIC ACCOUNTANTS

STRATEGIC PERFORMANCE MANAGEMENT

PROFESSIONAL 2 EXAMINATION - AUGUST 2017

NOTES:
You are required to answer **ALL** Questions.

PRESENT VALUE TABLES ARE PROVIDED

Time Allowed
3.5 hours plus **20 minutes** to read the paper.

Examination Format
This is an open book examination. Hard copy material may be consulted during this examination subject to the limitations advised on the Institute's website.

Reading Time
During the reading time you may write notes on the examination paper, but you may not commence writing in your answer booklet.

Marks
Marks for each question are shown. The pass mark required is 50% in total over the whole paper.

Answers
Start your answer to each question on a new page.

You are reminded to pay particular attention to your communication skills, and care must be taken regarding the format and literacy of your solutions. The marking system will take into account the content of your answers and the extent to which answers are supported with relevant legislation, case law or examples, where appropriate.

Answer Booklets
List on the cover of each answer booklet, in the space provided, the number of each question attempted. Additional instructions are shown on the front cover of each answer booklet.

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

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Time Allowed: 3.5 hours, plus **20 minutes** to read the paper.
You are required to answer **ALL** Questions.

Read the following case study and answer the questions which follow.

Case study: 'Central Group Plc''

Ms. Mary Bailey is chief executive of Central Group Plc, a divisionalised company which is diversified across several lines of business. She attributes her success in her professional life to "a willingness to delegate, and an ability to recruit and motivate talented staff who enthusiastically embrace the authority delegated to them".

The division managers within the Central Group report directly to Mary. She has described them as "*very able and honest people". However, Mary has also said that "the division managers aren't automatically guaranteed to do what's best for the shareholders ... the old mantra of what gets rewarded gets done, still applies ... therefore I need to be careful regarding what behaviour I incentivise*".

Quite apart from formal rewards, Mary has also noticed that many division managers like to centralise decision-making powers for their division into their own hands instead of delegating to their staff colleagues. "*I have a feeling that this centralisation may be occurring to a much greater degree than is desirable from Central Group's perspective*", says Mary. "*It's appropriate for a division manager to accept responsibility for the consequences of all decisions made in the division, but in a lot of cases that requires the division manager to delegate rather than try to decide everything personally."*

Another concern which Mary has expressed relates to what she calls 'some division managers' unwillingness to 'stick to the script' in relation to strategic objectives. For example, if a decision is made to invest in an intangible asset such as a brand name or goodwill, then it's important that division managers subsequently embrace the need to derive returns from that investment rather than treat it as money which has been spent in the past and is then forgotten about.

Against the background of all of these issues, Mary has selected five of the Central Group's divisions and has asked for your input, as specified in the questions on the following pages.

1. The **Chaco Division** provides courier services for consumers and small businesses, using small vans owned and operated by the division. The manager of this division has significant autonomy in investment decision making (for example, in relation to purchasing new vehicles) and is paid an annual bonus linked to the division's Return on Investment (ROI). Each year's ROI is measured as accounting profits (after deducting depreciation calculated on a straight-line basis) divided by net book value of fixed assets at the beginning of the year. The division has a cost of capital of 6% per annum but has consistently achieved an ROI of 11% per annum in recent years.

Mary Bailey is concerned that the manager of the division may be adopting a relatively short term perspective in investment decision making and that this may be detrimental to the maximisation of shareholder value. Specifically, She believes that in assessing any proposed investment in new vehicles the manager attaches much greater significance to the likely impact of the investment on divisional ROI in the early years of the vehicles' lives and much less significance to the impact in later years.

The following data is provided for a proposed new investment in small vans which is now being considered by the manager of the division:

Cost of purchasing new vans (payable immediately)	€150,000
Cash inflow in Year 1	€45,000
Cash inflow in Year 2	€58,000
Cash inflow in Year 3	€70,180
Residual value of vans after three years	Nil

An analysis of this cash flow data indicates that the proposed new investment in small vans has an Internal Rate of Return (IRR) of 7% per annum.

REQUIREMENT:

(a) Prepare a report for Mary in which you critically assess whether the manager of the Chaco Division is likely to make the proposed new investment in small vans and whether that such a decision is consistent with the aim of maximising shareholder value.

Provide a detailed justification of your reasoning, supported by appropriate calculations. (12 Marks)

(b) Mary Bailey is considering a possible change in the way in which ROI is calculated in the Chaco Division. Specifically, ROI would in future be calculated using an alternative method of depreciation which would have the effect of ensuring that the ROI of any investment project would be the same in all years of its life and would be equal to the project's IRR. She believes that this would increase the likelihood that the manager of the division would make investment decisions which are consistent with maximising shareholder value.

Critically evaluate this possible change. Calculations are not required in your answer to this part, but you should use the example of the proposed new investment in small vans to support your answer.

(6 Marks)

(c) Mary is also considering a more radical solution to the problem of exercising control over the Chaco Division. Under the new arrangement, Mary would reserve to herself the sole right to accept or reject investment proposals. The manager of the division would be assessed on the basis of net profit rather than ROI.

Discuss the limitations of this proposed control arrangement. (6 Marks)

[Total: 24 Marks]

2. In the **Mendoza Division**, two product managers, Greg and Tom, are each responsible for the profitability of one product. There is often conflict between Greg and Tom because they both need access to the same production facilities in order to manufacture their products. The following information is available about each product:

	Greg's product	**Tom's product**
Selling price per unit	€90	€129
Raw material cost per unit	€36	€66
Maximum demand per month	810 units	700 units
Machine 1: Hours per unit of product	3	10
Machine 2: Hours per unit of product	6	9

Raw material is the only variable cost. Fixed cost, which includes labour, amounts to €38,925 per month and does not depend on the quantity or mix of products manufactured. Production of a unit of either product requires some hours on Machine 1, which has a maximum capacity of 7,650 hours per month, followed by some hours on Machine 2, which has a maximum capacity of 7,785 hours per month.

After reviewing this information the division manager announced that in the coming month, Greg's product will be manufactured up to the maximum demand, and that any remaining production capacity will be used for the manufacture of Tom's product. No stocks of work-in-progress or finished goods are held. The division manager states that, in arriving at this decision, he has attempted to act as an "honest broker", sharing the facilities between Greg and Tom in order to achieve the most profitable overall outcome for the division as a whole. However, Tom does not accept that the division manager has acted as an "honest broker" and instead claims that the division manager has demonstrated unwarranted favouritism towards Greg.

REQUIREMENT:

(a) Determine whether the division manager has made a decision which will result in the most profitable overall outcome for the division as a whole. Develop a detailed analysis to support your answer, and calculate the number of units of each product which will be manufactured.

(10 Marks)

(b) The division manager has announced that for purposes of measuring cost of goods sold he will allocate the fixed costs to products in proportion to their use of Machine 2. His justification for this allocation is that he expects it to incentivise Greg and Tom to act in a way which will increase the profits of the division as a whole.

Examine the extent to which this cost allocation will have the intended incentive effect. Prepare comprehensive calculations to support your answer, assuming that Greg could reconfigure the design of his product so that, for each unit of output, one hour of production time would be switched from Machine 2 to Machine 1.

(12 Marks)

(c) Following the implementation of the division manager's production plan and the changes set out in part (b) above, the division manager announced that, in order to avoid machine idle time, all production capacity is to be used to its maximum capacity each month, even if this results in the accumulation of stocks of work-in-progress or finished goods at the end of the month. Determine the quantities of stocks of each type which would be likely to result from the implementation of this policy change, and critically evaluate the costs and benefits of the change.

(4 Marks)

[Total: 26 Marks]

3. The **Atacama Division**, one of the newest divisions of the group, was formed just a year ago when a previously-independent manufacturing company (Atacama Ltd.) became a wholly owned subsidiary of the group. The products manufactured and sold by this division are small kitchen electrical appliances, such as kettles and toasters. A significant motivation for acquiring Atacama was that it had a successful track record over several decades in promoting the Atacama brand name, under which nearly all of its products are sold.

The division has just completed product development work on a new type of fruit juicer which it will begin to manufacture shortly. Estimated manufacturing costs are €25 per unit (variable) and €60,000 per annum (fixed). Following market research, it was decided to distribute the juicer under the Atacama brand name at a price of €60 per unit, and the following probability distribution was developed for the number of units which will be sold in the coming year under this distribution strategy:

Number of units sold:	8,000	10,000	12,000
Probability:	0.25	0.5	0.25

After this market research was conducted, D & E Ltd. (which operates a chain of consumer electrical retail stores) asked the Atacama Division to consider an alternative distribution strategy. With this alternative distribution strategy, Atacama would not sell the juicer using its own brand name but would instead supply the product to D & E Ltd., labelled with the D & E brand name. The Atacama Division would be required to give D & E Ltd. exclusive rights to distribute the juicer i.e. the Atacama Division could not distribute the product through any other outlet. Furthermore, D & E Ltd. would pay the Atacama Division only €48 per unit for the juicer and would not commit to buying any particular quantity. However, based on its own research into projected customer demand for the juicer, D & E Ltd. has estimated the following annual sales of the juicer from its stores:

Number of units sold:	12,000	20,000
Probability:	0.4	0.6

REQUIREMENT:

Prepare a critical evaluation for the manager of the Atacama Division, to assist her in deciding which of the two distribution arrangements for the juicer should be chosen. This evaluation should include an appraisal of other qualitative and strategic issues to be considered.

An evaluation of other relevant qualitative strategic issues in addition to appropriate calculations should support your recommendations as to how risk should be managed in this decision.

[Total: 20 Marks]

4. Budgetary control plays an important role in the management of the **Chubut Division**, which operates a small number of factories manufacturing high-tech personal grooming products which the division sells on a wholesale basis to retail stores and web-based retailers. Product lifecycles are short and there is considerable competition from other manufacturers in relation to orders from retailers. Mary Bailey has stated that the division manager, who was appointed within the last year, deserves credit for his willingness to embrace full personal responsibility for the division's success or failure, but she is surprised by the extent and nature of the changes to budgetary control mechanisms which the division manager has made since his appointment. The following are specific examples of such changes:

(i) Each member of the sales staff was previously given a monthly sales target (in €) and was paid a flat-rate bonus for achieving it. This has now been replaced by a system whereby sales staff are required to follow a sequence of steps in customer negotiation in accordance with a 'negotiation manual' written by the division manager and they are paid flat-rate bonuses so long as they can demonstrate that they have adhered to the prescribed sequence in all of their customer negotiations.

(ii) The division's research and development (R & D) department was previously assigned a fixed annual budget, which was typically based on the actual R & D spend in the previous year, plus a small percentage increment, and the R & D department manager was awarded a bonus provided that a year-end review showed that actual spend had not exceeded the budget. This has now been replaced by a system whereby the current year's budget allocation is made up of two parts: 50% of last year's actual R & D spend, plus an additional amount equal to not more than 60% of last year's actual R & D spend, which is contingent on a rigorous justification of continued or new R & D project expenditure. This rigorous justification typically involves a significant presentation as well as a detailed technical and commercial report to the division manager.

(iii) In each of the division's factories, the manager of the production department is asked at the start of the financial year to estimate the production department's use of support services such as machine maintenance and information technology advice. Based on these estimates, the division manager then estimates the division's total need for the support services and hires (on fixed one-year contracts and leases) the appropriate amount of expert support staff and equipment. Under the previous budgetary mechanism, the amount charged to each production department for its service usage was in proportion to the original estimates of the services which it expected to use. This has now been replaced by a budgetary mechanism which charges each production department in proportion to its actual usage of services, even if the amounts actually used differ from the original estimates.

REQUIREMENT:

(a) For each of the three examples above, critically appraise the suitability of the existing and proposed approaches to budgetary control in this case.

(16 Marks)

(b) After reading your critical evaluation in answer to part (a), Mary Bailey commented "this division manager's instinctive management style seems to be incompatible with the effective use of budgetary control". Do you agree with her conclusion? Justify your answer.

(4 Marks)

[Total: 20 Marks]

5. The **Soriano Division** consists of a number of business units (BUs). Each BU is involved in some aspect of information technology or e-commerce. The division manager proposes to establish a new BU which will operate a website where consumers may obtain information about special offers available from retailers. In addition, the Soriano Division believes that some retailers will be willing to offer promotional codes (available exclusively on this website) which consumers may use to obtain special discounts when purchasing from the retailers.

The manager of the division has stated that the costs of establishing and operating the website will be modest, and he believes that the division can begin to make a profit from the website within a few months of first going online. He has set objectives for these first few months in terms of deriving a healthy revenue stream from the website while also building up the volume of site traffic.

The division manager has also given some thought to developing a mission statement to guide the development of the business in its early years. He has produced the following draft mission statement, which he acknowledges is a "work-in-progress that still needs some fine-tuning":

"Our mission is to be the website most frequently visited by Irish Internet users, by providing a unique web-based experience which will bring together customers looking for excellent value with retailers who are keen to provide it".

REQUIREMENT:

(a) Recommend ways in which the division could derive a revenue stream from its website. Justify each of your recommendations, including an assessment of the likely impact on the objective of building up the volume of website traffic.

(6 Marks)

(b) Critically appraise the draft mission statement. (4 Marks)

[Total: 10 Marks]

[Total: 100 Marks]

END OF PAPER

SUGGESTED SOLUTIONS

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SOLUTION 1

(a) **TABLE 1**

	Year 1	Year 2	Year 3
Cash inflow	€45,000	€58,000	€70,180
Depreciation = €150,000 / 3	€50,000	€50,000	€50,000
Net profit (loss)	(€5,000)	€8,000	€20,180

	Year 1	Year 2	Year 3
Net book value at beginning of year	€150,000	€150K - €50K = €100,000	€100K - €50K = €50,000

	Year 1	Year 2	Year 3
ROI	Minus €5K / €150K = Minus 3.3%	€8K / €100K = 8%	€20,180 / €50K = 40.36%

Given that the manager's main priority is the short-term, the returns in Year 1 (negative) and Year 2 (positive, but lower than the division's existing average ROI), see Table 1, are likely to deter him from accepting the investment. The division's existing ROI is 11%, so acceptance of this proposed investment would reduce the division average ROI in both of those years.

The high ROI in Year 3 is attractive because it would increase the average division ROI in that year significantly but (given the manager's preference for immediate returns) it seems unlikely he would attach much significance to it in making his choice.

The manager's rejection of the proposed investment is not consistent with the maximisation of shareholder wealth. We know that the proposed investment would be likely to add to shareholder wealth because its IRR (7%) exceeds the cost of capital (6%).

(b) This method would remove the "unevenness" from the ROI, giving an ROI of 7% in each year of the proposed investment's life. This is an improvement on the existing depreciation method which (because of the shrinking asset base and equal annual depreciation) results in the highest rate of ROI being achieved in the year to which the division manager attaches the least significance.

However it still does not ensure that the division manager would take a decision consistent with the maximisation of shareholder value. In relation to any new investment proposal the "benchmark" for the manager is likely to be the effect on ROI of adding the new investment to the division's existing investments. In the case of the Chaco Division, an ROI of 7% for the proposed new investment would dilute the division's existing ROI (which is 11%) and the division manager would therefore be likely to reject the investment, which is a decision not consistent with the maximisation of shareholder value for the reason explained in the answer to part (a) above.

Another objection to the proposed depreciation method is the likely pattern of depreciation charges from year to year. This method is likely to result in depreciation charges being "back-loaded" (i.e., lowest in the early years and highest in the later years). The reason for this is that (since the net book value of an asset is always lower in later years) any method of achieving an equal annual ROI necessarily involves having a lower profit (and therefore larger depreciation charge) in later years also. Given the nature of the asset (vehicles, which have a tendency to lose value quickly in the early years of their lives) a low depreciation charge in the early years would not be consistent with how the asset changes in economic value over time.

(c) This would increase the volume of work which Mary would have to take personally, rather than delegating it to the division manager who is "closer to the ground" and should have superior information about the business of his division. There is a strong possibility that the speed and/or quality of decisions would be adversely affected.

Mary is herself a professional manager and (like the division manager) must rationally be expected to behave in a self-interested manner. It is not clear that she (any more or less so than the division manager) will act as an automaton guided by the sole aim of maximising shareholder value.

The new arrangement (in effect treating the Chaco Division as a profit centre) seems to be consistent with the controllability principle. Since the division manager cannot influence investment in the division, neither ROI nor any other investment centre performance measure is appropriate. The problem is, however, that even a manager with no authority to make capital investments can (in practice, through normal operating decisions) influence the level of investment in current assets such as inventories and receivables. By assessing the manager as a profit centre, Mary is allowing him to make these investments in current assets without holding him specifically accountable for earning a return to justify the additional investment.

Tutorial notes

- *Purpose of question:* To require candidates to identify the likely consequences of certain divisional performance arrangements (Syllabus Area 3).

- *Options:* There is scope for variation within the detailed points made in answer to parts (b), (c), and to some extent part (a).

- *Essential components:* In part (a), candidates need to be able to identify the type of calculations required and to carry them out. They also need to correctly identify the likely managerial decision and the implications for shareholders. Marks will NOT be awarded in part (a) for calculating project NPV since shareholders' preferences can be identified using the information provided in the question (IRR and cost of capital). In parts (b) and (c) candidates need to be identify and evaluate the principal limitations of the proposed changes.

SOLUTION 2

(a) The optimal solution is the one which will provide the highest return per hour of the bottleneck resource. Hence:

Hours needed to produce maximum demand:

	Greg's product	Tom's product	Total
Machine 1	810 * 3 hours = 2,430 hours	700 * 10 hours = 7,000 hours	9,430 hours
Machine 2	810 * 6 hours = 4,860 hours	700 * 9 hours = 6,300 hours	11,160 hours

Utilisation rates = Hours needed / Capacity:
- o Machine 1: 9,430 / 7,650 = 123%
- o Machine 2: 11,160 / 7,785 = 143% ⇒ Bottleneck

Contributions per unit:
- o Greg's product: €90 - €36 = €54.
- o Tom's product: €129 - €66 = €63.

Return per hour of the bottleneck resource (Machine 2):
- o Greg's product: €54 / 6 hours = €9
- o Tom's product: €63 / 9 hours = €7
- o Clearly €9 > €7 so the division manager is right to prioritise Greg's product.

Production plan:

	Greg's product	Tom's product
Units produced (maximum demand)	810 units	
Bottleneck hours used	810 * 6 = 4,860 hours	
Bottleneck hours remaining	7,785 – 4,860 = 2,925 hours	
Units produced (with remaining bottleneck capacity)		2,925 / 9 = 325 units

(b) Yes it will have this effect. By penalising managers for using the bottleneck Machine 2, while allowing them to use Machine 1 (where there is spare capacity) without any cost allocation, this makes it possible to achieve more throughput from the production system and less idle time. The following calculations show this.

Benefit to the division: Extra production of Tom's product:

- Machine 2 capacity "released" by Greg = 810 units * 1 hour = 810 hours.

- This is sufficient for (810 / 9 = 90) extra units of Tom's product.

- Check that this is less than the previously unfulfilled demand for Tom's product = 700 units demand – 325 units produced = 375 units of unfulfilled demand ⇒ OK; proposed extra production is less than the previous unfulfilled demand.

- Check that there is sufficient Machine 1 capacity for the extra production:

  Machine 1 production hours for this extra production:

Greg "switch"	Tom	Total extra hours
810 hours	90 units * 10 = 900 hours	1,710 hours

  Spare capacity after initial production plan (Part A):

Greg's product	Tom's product	Spare capacity
810 * 3 = 2,430 hours	325 * 10 = 3,250 hours	7,650 – 2,430 – 3,250 = 1,970 hours ⇒ OK; more than the required 1,710 hours

- Benefit to the division = 90 units of Tom's product * €63 = €5,670.

Benefit to Greg: Reduced cost allocation (and higher profit per month):

- Cost allocation rate = €38,925 / 7,785 hours capacity of Machine 2 = €5 per Machine 2 hour.

- Reduced cost allocation = 810 hours * €5 = €4,050.

Benefit to Tom: Profit from extra production:

- Profit per unit of Tom's product:

Contribution	**Cost allocation**	**Profit per unit**
€63	€5 * 9 Machine 2 hours = €45	€18

- Incremental profit = €18 * 90 units = €1,620.

(c) Remaining spare capacity after parts (a) and (b):

- Machine 1: 1,970 – 1,710 = 260 hours.
- Machine 2: None.

So it is not possible to produce any additional finished goods, but it is possible to produce some work-in-progress stocks which have completed Machine 1 only. This could be:

- Either: 260 / 3 = 86.67 units of part-finished units of Greg's product;
- Or: 260 / 10 = 26 units of part-finished units of Tom's product.

There are no benefits from stockpiling work-in-progress. It cannot be completed or sold in the current period and (unless the bottleneck is alleviated) it does not help to increase throughput in the following period either. There are likely to be considerable inventory holding costs (such as storage, financing, and obsolescence) with no apparent benefit.

Tutorial notes

- *Purpose of question:* To require candidates to identify and apply throughput accounting as an appropriate solution technique for the problem raised, to show how a cost allocation can produce desired managerial incentives, and to identify the costs that can arise if avoidance of idle capacity is prioritised over JIT manufacturing (Syllabus Areas 1 and 4).

- *Options:* There is scope for variation within the layout of calculations in all parts of the question and scope for the detailed points made in answer to part (c).

- *Essential components:* Candidates need to be able to identify and implement the appropriate accounting techniques, including throughput accounting and the cost allocation required in part (b). It is also essential that candidates explain how their calculations enable conclusions to be drawn as asked in the question, i.e., that the division manager's production plan is optimal for the division and that the proposed allocation will produce the desired incentive effect.

SOLUTION 3

Risk calculation: Payoff tables

Product distributed under Atacama's brand name:

- Contribution = €60 - €25 = €35 per unit.
- Payoff table (yearly profits):

	Sales = 8,000 units	Sales = 10,000 units	Sales = 12,000 units
Payoff:	(8,000 * €35) - €60K = €220K	(10,000 * €35) - €60K = €290K	(12,000 * €35) - €60K = €360K
Probability:	0.25	0.5	0.25

Product distributed through retail chain:

- Contribution = €48 - €25 = €23 per unit.
- Payoff table (yearly profits):

	Sales = 12,000 units	Sales = 20,000 units
Payoff:	(12,000 * €23) - €60K = €216K	(20,000 * €23) - €60K = €400K
Probability:	0.6	0.4

Management of risk:

Expected values:

- Product distributed under Atacama brand name:
  ⇒ EV = (0.25 * €220K) + (0.5 * €290K) + (0.25 * €360K) = €290,000.

- Product distributed through D & E Ltd:
  ⇒ EV = (0.4 * €216K) + (0.6 * €400K) = €326,400.

- On the EV basis, the D & E Ltd. distribute option is to be preferred. This risk-neutral approach to risk management is appropriate in this case since Atacama Division has a wide product range and presumably brings new products to market quite frequently, so this is a "repeated" rather than a "once-off" decision.

Downside risk:

- A disadvantage of the D & E Ltd. distribution channel is that it exposes Atacama Division to more downside risk:

  - D & E distribution channel → payoff can be as low as €216K, and there is a high (0.6) probability of this outcome.

  - Atacama brand name distribution → payoff cannot be lower than €220K, and the chances of this outcome are only 0.25.

- As outlined earlier this is in the nature of a "repeated" rather than a "once-off" decision, so minimising the risk associated with this individual decision is not likely to be a criterion of major significance.

Upside risk:

- The D & E Ltd. distribution channel is to be preferred in terms of upside risk:

  - D & E distribution channel → maximum payoff = €400K, with probability 0.4.

  - Atacama brand name distribution → maximum payoff = €360K, with probability only 0.25.

Other qualitative and strategic issues:

- A disadvantage of distributing through D & E Ltd. is that Atacama Ltd. must forego the opportunity to label the product with its own brand name, and thus losing brand exposure. The success of the Atacama brand name was a significant motivation for acquiring the brand name so it is not a good strategic fit to distribute a product in a way which makes no use of that brand name and provides no opportunity for consumers' experience with the juicer to increase the value of the brand and carry to other Atacama-branded products. Brand exposure is valuable in building up the reputation of the division and its Atacama-branded products, so the D & E distribution arrangement may be have an opportunity cost which is not captured in the figures here.

- Another limitation of the data provided is that the probability distribution for sales to D & E Ltd. is based on data provided by D & E Ltd. rather than independent market research or estimates made Atacama Division. Given that D & E Ltd. is actively seeking this distribution arrangement with Atacama Division, it is prudent to bear in mind that D & E Ltd. has an incentive to present data which reflects favourably on that distribution channel.

- The exclusivity arrangement would make Atacama Ltd. dependent on D & E Ltd. for all of its distribution of the new product, and D & E Ltd. may exploit this at Atacama's expense. For example, D & E Ltd. may feel that it can force Atacama to accept lower prices in future years, especially since there may be other manufacturers of juicers who would be willing to supply their juicers to D & E Ltd. if Atacama did not agree to the D & E's prices and terms of business.

- The figures analysed are those given for a year. However, since the product is a new product, it is likely to have a product lifecycle of several years, and the market reaction to the juicer and the financial outcomes are unlikely to be the same each year. The decision as to which distribution channel would be most profitable should be made on a whole-lifecycle basis and not just on the analysis of a single year.

Tutorial notes

- *Purpose of question:* To require candidates to identify and apply an approach to managing uncertainty in a decision-making context involving a choice between alternative strategies (Syllabus Areas 1 and 4).

- *Options:* There is scope for variation within the specific points made, especially in relation to how risk should be managed and how qualitative and strategic considerations should impact on the decision.

- *Essential components:* Candidates must perform appropriate calculations, including payoff table and expected values. They must also explain and justify their recommended approach to risk management in this case. Although there is some scope for variation in the points made in relation to the qualitative and strategic issues which should be considered, nevertheless there are a number of salient points which candidates are expected to identify. These include: brand exposure, the reliability of data provided by D & E Ltd. given that company's vested interest in the outcome of the decision, and the dangerous potential for D & E to exploit Atacama Division in a future year.

SOLUTION 4

(a) Sales staff

A strength of the previous budgetary mechanism is that it linked bonuses to the main factor within sales staff control, viz., sales revenue, and therefore should motivate effective controllable performance. However both the performance measure and the nature of the bonus have certain weaknesses.

Rewarding sales staff for generating revenue is not necessarily goal congruent, because the products with the highest revenue do not necessarily have the highest contribution. A solution to this would be use “pseudo-profit” as the performance measure, i.e., sales revenue minus standard cost of goods sold. (It would not be appropriate to use actual cost and sales staff do not control production costs). Also, there may be some selling costs within the sales staff’s control (such as customer discounts) and if so these should be deducted in arriving at the net revenue or pseudo-profit generated.

Another weakness of the existing arrangement is that bonuses are “flat-rate”, i.e., there is apparently no benefit to a sales staff member for exceeding rather than just achieving a monthly target. In this situation, the sales staff member has no incentive to generate additional sales in a month when the target has already been met, and in fact has an active incentive to discourage customers to defer any additional purchases to the next month when they will count towards the sales staff member’s measured performance.

The replacement control mechanism, involving the “negotiation manual”, is completely misplaced. The underlying thinking seems to be that the division manager knows best how sales should be achieved and that experienced sales staff should comply with his prescribed procedures. This type of control is appropriate (for example) for staff responsible for implanting health and safety routines, but not for sales staff. Sales staff can most effectively be incentivised by enabling and requiring them to accept responsibility for the success or failure of their sales efforts. This is what the existing mechanism (despite its limitations) does, and it is likely to motivate effective and results-oriented sales staff to want to be employed by the division. The replacement mechanism might attract “form-fillers”, more interested in documenting the nature of the negotiations process than in actually achieving sales.

R & D staff

A weakness of the previous control arrangement is that R & D funding is provided “automatically” to the R & D department each year, without the R & D department having to show any evidence of technical or market progress in relation to the outputs of its work. It is effective in motivating the R & D department not to overspend its budgetary allocation, but there is equally an incentive not to underspend its budgetary allocation since this would apparently lead to a smaller allocation in the following year.

Given the short product lifecycles in this case, and the intense competition with other manufacturers, it is important that the R & D department is incentivised to develop new products if the division is to be able to retain its market share. The previous budgetary control mechanism did not do that.

The replacement control mechanism offers the potential for improvement in this regard. The system is a partly zero-based budgeting arrangement, with a significant part of the budgetary allocation being dependent on the R & D department rigorously justifying the R & D spend in technical and commercial terms. This is appropriate since the division needs to invest in R & D and to do so in ways which will result in successful new product development.

One feature of the new mechanism is that the division manager is centrally involved in listening to a significant presentation and assessing a detailed technical and commercial report. Therefore the new mechanism will only be effective to the extent that the division manager has the time and competence to do this. It is not clear that the new budgetary process involves any requirement for the R & D department to be accountable ex post for the achievement of the promises made at the time of budget allocation.

Another weakness of the replacement budgetary mechanism is the somewhat arbitrary 60% cap on the second part of the available budgetary allocation. R & D proposals which are subject to zero-based scrutiny should be accepted or rejected based on cost-benefit analysis – this can include capital rationing if necessary, but an arbitrary cap cannot be justified.

Support services

It is appropriate that production department managers should be charged for these. Otherwise the production department managers would treat them as a “free good” and as such would have no incentive to ration consumption.

The difference between the previous and replacement budgetary mechanisms lies in how the allocation is made, and the previous mechanism is superior in terms of the incentives created. Once the production department managers make their estimates of service usage, the division manager hires sufficient staff and equipment to provide the estimated service usage. This creates fixed costs, which the organisation cannot avoid even if the production department managers use far less service than they originally estimated. By making the allocation based on estimated usage, the previous mechanism held production department managers accountable for the full costs which they created for the division (including the costs of any spare support service capacity arising from overestimation of service usage). By contrast the replacement mechanism allows production department managers to overestimate support service usage (which they may wish to do in order to avoid any risk of inadequate capacity being available) without the production department managers accepting responsibility for the costly overcapacity which results.

(b) Based on the three examples above, it seems that the division manager's "instinctive management style" involves him personally concentrating authority and responsibility into his own hands, even in situations where more effective management control would involve using the budgetary control mechanism to delegate authority and responsibility to subordinates.

The division manager needs to motivate his sales staff to achieve outcomes using their professional judgment and skill; requiring them to comply with procedures prescribed by the division manager personally will lead to inferior outcomes. Similarly, the budgetary control mechanism for the R & D department must involve that department accepting ex post responsibility for ex ante self-set targets; the division manager is placing too much faith in his own competences when he implies that he can identify ex ante which R & D projects will produce effective outcomes and which will not.

In the third example (support services) the division manager makes the decision as to how much service should be purchased for the year (and, by implication, what fixed costs the division should be committed to). It is appropriate that he should make this decision for the division. However a good decision in this case requires the production department managers to make accurate estimates of their forthcoming service usage, and the revised control mechanism creates an incentive for production managers to overestimate rather than estimate accurately.

Therefore, on the evidence, I agree with Mary Bailey's view that this manager's instinctive managerial style is incompatible with the effective use of budgetary control. What is required is appropriate delegation of responsibility, with budgetary control used to motivate subordinates to exercise delegated authority in a goal-congruent way. The division manager is actively reducing the level of delegation, but this is no substitute for effective budgetary control.

Tutorial notes

- *Purpose of question:* To assess candidates' ability to evaluate specific budgetary control mechanisms (Syllabus Area 2).

- *Options:* There is scope for variation within the specific points made, subject to the essential components below.

- *Essential components:* It is essential that candidates evaluate both previous and replacement budgetary control mechanisms for the three areas specified. Candidates need to identify the specific weaknesses in all cases, and any strengths. It is essential that candidates identify that the purposes of budgetary control have not been well served by the changes made and in part (b) it must be pointed out that the manager has a strong intuition towards centralisation which is incompatible with effective use of budgetary control.

SOLUTION 5

(a) Charge consumers for use of the website, e.g., via a paywall. However this may not be feasible (many rival voucher sites are free for consumers to access) and will certainly reduce the volume of website traffic. Because of this, retailers will be less keen to avail of the site to promote themselves and (in a further turn of the vicious circle) there will be less reason for consumers to visit the site.

Charge retailers for use of the site, either through a fixed charge per announcement or on a "pay-per-click" basis. Whether this is feasible depends on whether the retailers have strong websites of their own – if they have, then they have little reason to pay to (in effect) divert consumer traffic away from their own website and into a site where the consumers will see information about rival retailers. The effect of this charging strategy on website traffic depends on whether or not a significant volume of retailers with worthwhile offers is willing to pay these charges – if they aren't then the site will have little content and consumers will have little incentive to visit.

Sell advertising space on the face of the website (not just to retailers seeking to promote themselves through the site) without levying charges of the type referred to in the previous two bullet points. To the extent that this advertising is modest in amount and of interest to consumers, it should not "scare away" consumers from visiting the site and may even give them an added reason to visit. However website traffic would be adversely affected if the volume or nature of the advertising is unacceptable to consumers. Also, if this type of advertising provides competition for the retailers using the site, then the retailers have less reason to use the site (which in turn reduces the motivation for consumers to visit the site and therefore the amount that advertisers will pay for the advertising space).

(b) Part of the mission statement is reasonable, actionable, and apparently consistent with the business model which the Soriano Division has in mind for the business unit. This refers to the statement that "... [provide] a unique web-based experience which will bring together customers looking for excellent value with retailers who are keen to provide it".

However the first part of the mission statement ("our mission is to be the website most frequently visited by Irish Internet users") is inappropriate and essentially irrelevant to the division's apparent ambitions for the website. This statement suggests website traffic is an end in itself, and (if taken literally) could lead to the business unit trying to match website traffic volumes set by major websites such as www.rte.ie and Wikipedia with which this site is not in competition. An appropriate refinement would be to limit the ambition to being the most visited website of its type (so that the benchmark is other "voucher" and "promotional" websites, with which this website competes for traffic and revenues).

Tutorial notes

- *Purpose of question:* To require candidate to evaluate an e-commerce business unit, with particular reference to identifying and evaluating its options for revenue generation and evaluation a draft mission statement (Syllabus Areas 5 and 4).
- *Options:* There is scope for variation within the specific points made in answer to both parts.
- *Essential components:* In part (a) it is essential that candidates identify and evaluate options for revenue generation and assess the impact of such options for website traffic. In part (b) candidates need to critically evaluate the website, including the key weakness of the first part of the statement.

MARKING SCHEME

Question 1:

(a)	Calculation of ROI	6
	Division manager's likely decision	4
	Shareholder value vs. manager's likely decision	2
(b)	Unlikely to lead to a decision more consistent with shareholder value	4
	Conflict between this method of depreciation and economic value of the asset	2
(c)	Limitations of proposed control arrangement (approx 3 good points expected @ 2 marks each)	6
	TOTAL:	**24**

Question 2:

(a)	Utilisation rate & identifcation of bottleneck resource	5
	Optimal production plan	5
(b)	Benefit to division	8
	Benefit to managers	4
(c)	Quantification of stock levels	2
	Costs and benefits of this stock holding	2
	TOTAL:	**26**

Question 3:

Payoff tables	4
Risk management: including calculations and recommendation of appropriate risk management approach	5
Qualitative & strategic issues: Brand exposure	3
Qualitative & strategic issues: Reliability of data provided by D & E which has a vested interest	3
Qualitative & strategic issues: Danger of D & E exploiting Atacama in a future year	3
Qualitative & strategic issues: Requirement for whole-lifecycle analysis	2
TOTAL:	**20**

QUESTION 4:

(a)	Budgetary control mechanisms: Sales staff:	
	- “Results control” vs “negotiation manual”	2
	- Weakness of “flate-rate” bonuses in both schemes;	2
	- Limitations of performance measure (“sales”)	2
	Budgetary control mechanisms: R & D department:	
	- Approx 3 good points @ 2 marks each	6
	Budgetary control mechanisms: Support services:	
	- Both mechanisms ensure services are not misperceived as “free”	1
	- Appraisal of change in how the allocation is made	3
(b)	Responses to statement about “instinctive managerial style” of the division manager	4
	TOTAL:	**20**

QUESTION 5:

(a)	Alternative revenue streams: Approx 3 good points @ 2 marks each	6
(b)	Critical evaluation of mission statement: “positive features”	2
	Critical evaluation of mission statement: “negative features”	2
	TOTAL:	**10**