STRATEGIC PERFORMANCE MANAGEMENT

PROFESSIONAL 2 EXAMINATION - AUGUST 2020

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 Format
During the reading time you may highlight text and write notes on the examination paper, however, you may not commence writing on the answer field until your Supervisor tells you to do so. Please read each Question carefully.

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

Answers
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.

THE INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS IN IRELAND

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Please read the following case study and answer the questions which follow.

Case study: 'Diversity Group Plc'

Michael Craig is general manager of Diversity Group Plc (hereafter referred to as 'the Group'). He has held this role for nearly four years and in that time has overseen significant improvements in the financial performance of the Group as a whole and most of its individual divisions.

Michael attributes this success to a number of factors. Firstly, he believes that he has made good recruitment decisions when appointing division managers. Secondly, in channelling the Group's capital for investment in divisions, he has given priority to those divisions which have a consistent track record of financial success, effective divisional management, and being a good strategic fit for the Group as a whole. Thirdly, he has not been afraid to divest divisions where he believed this to be the right decision for the Group.

However, Michael expects to be asked some challenging questions by shareholders at the Group's forthcoming Annual General Meeting (AGM). "*Frankly, the shareholders are right to ask serious questions, and even to play devil's advocate at times*", Michael has told you. "*After all, it's the shareholders whose money is funding this Group, and I have to be able to argue convincingly that the division managers and I are using their money wisely and in a way which is likely to generate a decent return. But I believe that I have good answers ready in response to the questions which are most likely to arise at the AGM*".

In particular, Michael anticipates that some shareholders are uneasy about the concept of 'good strategic fit' and believe that the Group (in principle) should invest in any activity or division which will earn an adequate or superior rate of return. He accepts that there is some merit in this argument and points out that the different divisions are engaged in a very diverse range of activities. However, Michael also says: "*There's no question of us limiting ourselves by hanging on to some kind of comfort blanket when it comes to deciding the activities in which our divisions should engage. If an area of activity is new and if I can recruit a division manager with the skill set and experience needed to make a success of it, then I'll make the necessary investment in that division. Our shareholders deserve nothing less*".

Michael also expects to be challenged at the AGM on the issue of divestment of divisions. In this regard, he has told you: "*As far as I'm concerned, there's no room for sentiment where divestment is concerned. We don't divest divisions very often, but when we do, it's for one of two specific reasons. The first possibility is that a division is consistently under-performing and we haven't been able to turn it around; thankfully, we only very rarely find ourselves in that situation. The second possibility is that a division has been performing very successfully and my judgement is that the best way for the Group to derive maximum value from that division is to sell it for a large amount of cash which can then be reinvested in other divisions*".

Following from the above information, the five questions in the remainder of this examination paper address important issues of performance management and decision-making in relation to some of the Group's divisions. You are required to answer these five questions.

1. The **Osaka Division** manufactures a single product. No inventories of raw materials or finished goods are held at the beginning or end of any month. The budget for last month indicated that the selling price would be €100 per unit and that the number of units sold would be 5,000. The standard variable manufacturing cost per unit was as follows:

Labour: 0.9 direct labour hours (DLH) @ €18 per DLH =	€16.20
Direct materials: 10 kg. @ €2.50 per kg. =	€25.00
Variable product overheads: 0.9 DLH @ €4 per DLH =	€3.60
Total	€44.80

The actual contribution earned by the division last month was as follows:

Sales: 4,600 units @ €102 each =	€469,200
Labour: 5,060 DLH @ €18.60 =	€94,116
Direct materials: 43,700 kg. @ €2.60 per kg. =	€113,620
Variable production overheads	€18,722
Contribution for the month	€242,742

When the budget was being prepared it was assumed that the division's sales units would amount to a 25% market share. However, the division's actual sales units amounted to a market share of just 20%.

REQUIREMENT:

(a) Determine the division's total budgeted contribution for last month, and then use variance analysis to reconcile the budgeted and actual contribution in as much detail as possible from the information provided.

(11 marks)

(b) Analyse the direct labour variances into their 'planning' and 'operational' elements using the following additional information:

- Due to an unexpected increase in the rate of staff turnover, the division's production manager argued that 1.15 hours was a realistic standard for direct labour hours per unit of the product.

- In preparing the standards for labour, the division's accountant forgot to allow for a 5% increase in the hourly wage rate which was negotiated some months ago and which the division agreed would come into effect from the first day of last month.

(10 marks)

(c) The division manager has stated: "I'm fairly pleased with our performance last month. We experienced a number of cost increases, mainly through factors which were beyond our control. We had no choice but to pass these on to our customers through a slightly higher selling price per unit. In spite of this, the reduction in the number of sales units was modest and our actual total contribution was fairly close to the budgeted level".

Critically evaluate this statement. Make comprehensive use of your answers to parts (a) and (b) above to support your evaluation.

(7 marks)

[Total: 28 Marks]

2. The **Kyoto Division** manufactures merchandise designed to appeal to supporters of team sports. As an example, the division manager has told you about a Supporters Kit (SK) which the division intends to manufacture in connection with a football tournament for which the national team has recently qualified. The kit contains the national flag plus a headband and will retail for €3.50. Demand for the SK will depend on how much progress the national team makes in the forthcoming tournament, as follows:

	If the team is knocked out in the 1st round	**If the team is knocked out in the 2nd round**	**If the team qualifies for the 3rd (and final) round**
Cumulative demand for the SK	10,000 units	18,000 units	25,000 units

The division manager estimates that there is a 0.7 probability that the team will qualify for the 2nd round and a 0.65 probability that it will qualify for the 3rd (and final) round.

The division manager has asked for your advice in relation to the scheduling of production. She is considering three alternative possibilities:

1. To manufacture 10,000 SKs initially, and then produce additional batches as necessary if and when the team qualifies for each of the two subsequent rounds of the competition. This would avoid any risk of the division being left with unsold SKs.

2. To manufacture 10,000 SKs initially. If the team qualifies for the second round, then the division manager would immediately manufacture one further large batch of 15,000 SKs. This further batch would enable the Kyoto Division to meet demand in full at the second round and (if applicable) the third round.

3. To manufacture 25,000 SKs before the beginning of the tournament so that the division will have sufficient inventory to meet demand should the team progresses to the final of the tournament.

At first, the division manager was inclined towards the first of these three options so as to avoid any risk of being left with unsold inventory if the team makes an early exit from the tournament. However, her production manager has suggested that it may be worth taking the risk of producing in bigger batches because there is a batch cost of €5,100 in manufacturing any batch, irrespective of how many units it consists of. There is also a variable manufacturing cost of €1.50 per unit of SK.

REQUIREMENT:

(a) Prepare a payoff table to show the possible outcomes of the decision facing the manager of the Kyoto Division.

(12 marks)

(b) Advise the division manager as to which of the three options (1, 2, or 3 above) she should choose in this case. Justify your answer in full.

(10 marks)

[Total: 22 Marks]

3. The **Sapporo Division** has the capacity to manufacture up to 40,000 units of a specialised engineering component (the 'SEC') per month. The marginal cost of manufacturing is €50 per SEC. In a typical month, production amounts to 35,000 units of the SEC (of which 19,000 units are sold to external customers and the remaining 16,000 units transferred to the Nara Division of the Group). Transfers to the Nara Division and sales to external customers are each priced at €80 per SEC. Because all units of the SEC produced are sold either to external customers or to the Nara Division, the Sapporo Division does not accumulate any surplus inventory of the SEC.

The Nara Division uses the transferred components in order to manufacture a product known as the 'NX', which it sells to customers for €450 each. To manufacture one unit of the NX, the Nara Division requires four units of the SEC and incurs additional marginal costs of €90. The Sapporo Division is the only possible source of supply of the SEC. The Nara Division has the capacity to manufacture 6,500 units of NX per month, but the division limits its production to 4,000 units of NX per month because this is the level of monthly sales demand.

In the hope of making some use of its spare capacity, the Nara Division recently spoke with a potential new customer (Kate O'Connell) about the possibility of a special once-off order for some units of NX next month. Kate's order (which must be accepted in full or not at all) is for 2,000 units of NX at a special price of €375 each.

REQUIREMENT:

(a) Determine whether it would be in the best interests of Diversity Group Plc for Kate's order to be accepted. Your answer should include detailed workings.

(8 marks)

(b) Is it likely that Kate's order will be accepted by the managers of the Sapporo and Nara Divisions? Justify your answer fully. In answering this part, make the following assumptions:

- The transfer price for the SEC remains at €80 per unit.
- The manager of each division wishes to (and has sufficient divisional autonomy to) maximise the profit of his/her division.

(8 marks)

(c) Michael Craig has asked you to identify a transfer pricing arrangement for the SEC which (in relation to Kate's order) would motivate the two divisions to behave in a goal congruent manner and would ensure that the two divisions benefit equally from the acceptance of Kate's order.

Develop a transfer pricing arrangement in response to this request and demonstrate fully that it fulfils these criteria.

(6 marks)

[Total: 22 Marks]

4. Unlike most divisions in the Group, the **Yokohama Division** is not engaged in manufacturing. Instead, it operates a website which customers use for booking self-catering accommodation (mostly apartments in town centres). The division does not own any properties, but (in return for a small fee to cover the cost of a quality assessment) it allows apartment owners to have their quality-approved properties offered for short-term rent (typically 1 to 4 nights) on the website. Customers book accommodation through Yokohama's website and pay the accommodation charges directly to Yokohama. In turn, Yokohama pays about half of the accommodation charges to the owner of the property in question. Customers deal exclusively with Yokohama staff and not with the apartment owners (e.g., it is Yokohama staff who provide the customer with access to the property on arrival where necessary and who deal with any problems which arise during the customer's stay).

Michael Craig is proud of the success and expansion of the Yokohama Division in recent years. Profits and turnover have both grown significantly from year to year. Furthermore, although (when it was first formed) the division dealt with accommodation only in the Greater Dublin area, the business strategy in subsequent years has involved expanding markets to include accommodation in other towns throughout Ireland. Michael recently decided that the best way for the Group to capitalise on the Yokohama Division's success would be for the Group to sell the division for a large cash sum, which would subsequently be used to fund new equity investment elsewhere in the Group. Before publicly announcing that the division is being offered for sale, Michael commissioned an independent consultant to provide an assessment of the potential cash sale value of the division. For this purpose, he provided the consultant with the division's Balanced Scorecard for its two most recent financial years, as follows:

	2019	**2018**
Financial themes:		
Turnover	€950,000	€820,000
Net profit	€316,000	€300,000
Return on investment (ROI)	21%	23%
Customer themes:		
Number of customers	2,000	2,150
Market share	30%	30%
Internal process themes:		
Percentage of sales which come from new markets and towns	20%	15%
Average time in resolving customer problems (e.g., with water heating, cooking facilities, etc.)	15 minutes	28 minutes
Learning & growth themes:		
Average employee satisfaction level (measured on a 10-point scale, with maximum = 10)	7.4	6.5
Average number of employee suggestions implemented (per employee per annum)	6	4

Subsequently, Michael was disappointed to hear that in the consultant's opinion the potential cash sale value of the division is rather less than he had anticipated. The consultant pointed to what she believes to be a number of relatively negative factors. She is wary of the fact that the division owns relatively few physical assets, and that the division's success is largely attributable to the good performance of its employees. Furthermore, she points out that (although turnover is increasing rapidly) profits are not growing at the same rate, while market share seems to have stagnated and the number of clients has actually declined. "Frankly", she says "I don't think there will be many potential buyers for the Yokohama Division, so the Group may not achieve as good a selling price for the division as Michael expects".

REQUIREMENT:
Critically evaluate the performance of the Yokohama Division and discuss its attractiveness to potential buyers, making reference to each measure reported in the Balanced Scorecard. In your answer, you should indicate and justify whether you share the consultant's relatively pessimistic assessment. You are not required to make an estimate of the potential cash sale value of the division.

[Total: 16 Marks]

5. The **Sakai Division** manufactures and sells a wide range of non-alcoholic drinks. Return on Investment (ROI) has been well in excess of cost of capital since the division was established a decade ago, but the division manager is aware that ROI has been declining slightly over the last three years. He has recently identified a number of processes within the division where he believes there is scope for business process redesign (BPR) to ultimately lead to sustained improvement in ROI. Two particular instances are under active consideration at present:

1. A new approach to advertising. Until now, the division has relied primarily on local newspaper and broadcast advertising. The new approach would involve payments by Sakai to social media platforms (SMPs). The specific proposal is that Sakai might pay (for example) €500 "up front" to a SMP, and the SMP would then make links to Sakai's website visible to users of the SMP platform in a defined geographical area. When a SMP user clicked through on one of these links and visited Sakai's website, the SMP would levy a charge of a few cents on Sakai by means of a deduction from the €500; this would continue until the €500 was spent.

2. The use of throughput accounting, both to avoid the build-up of surplus work-in-progress inventory and to facilitate decisions as to what should be prioritised when making capital investment decisions about expansion of production capacity. As an example, production of a batch of one of the division's products requires 0.5 hours on 'Machine 1' followed by 0.9 hours on 'Machine 2'. Machine 1 has a maximum monthly capacity of 540 hours and Machine 2 has a maximum monthly capacity of 576 hours. Neither machine is used in the manufacture of any other product.

REQUIREMENT:
Write a memo to the divisional manager which critically evaluates each of these two proposals. In your answer make full use of the information provided, provide concise explanations of innovative concepts or techniques, and identify the additional information which would be most helpful to the division in managing business processes in these two areas.

[Total: 12 Marks]

[Total: 100 Marks]

END OF PAPER

SUGGESTED SOLUTIONS

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SOLUTION 1

(a) Budgeted contribution

- Budgeted contribution per unit = €100 - €44.80 = €55.20
- Total budgeted contribution = 5,000 * €55.20 = €276,000.

Sales price variance

- Actual price = €102.
- Budget price = €100
- Actual quantity = 4,600 units
- SPV = (€102 - €100) * 4,600 = €9,200 F

Sales volume variance

- Actual quantity = 4,600 units.
- Budgeted quantity = 5,000 units.
- Budgeted contribution per unit = €55.20.
- SVV = (4,600 – 5,000) * €55.20 = €22,080 U

SVV is NOT required so long as candidates show market share & size variances, as follows:

- Budgeted market size = 5,000 / 25% = 20,000 units.

- Actual market size = 4,600 / 20% = 23,000 units.

Market share variance

- Actual sales = 4,600 units.
- Standard share of actual market = 25% * 23,000 = 5,750.
- Standard contribution per unit, from above = €55.20.
- Market share variance = (5,750 – 4,600 = 1,150 units) * €55.20 = €63,480 U.

Market size variance

- Increase in market size = 23,000 – 20,000 = 3,000 units.
- Standard market share % = 25%.
- Standard contribution per unit, from above = €55.20.
- Market size variance = (3,000 * 25% = 750 units) * €55.20 = €41,400 F.

Labour efficiency variance

- Actual hours = 5,060.
- Standard hours = 4,600 units * 0.9 hours = 4,140 hours.
- Standard wage rate = €18 per hour.
- LEV = (5,060 – 4,140 = 920 hours) * €18 = €16,560 U.

Labour wage rate variance:

- Actual wage rate = €18.60.
- Budget wage rate = €18.
- Actual hours = 5,060.
- LWRV = (€18.60 - €18 = €0.60) * 5,060 = €3,036 U

Materials use variance

- Actual use = 43,700 kg.
- Standard use = 4,600 units * 10 kg = 46,000 kg.
- Standard price = €2.50.
- MUV = (43,700 – 46,000 = 2,300 kg.) * €2.50 = €5,750 F.

Materials Price Variance (MPV)

- Actual price = €2.60.
- Budget price = €2.50.
- Actual quantity purchased = 43,700.
- MPV = €2.60 - €2.50 = €0.10) * 43,700 = €4,370 U

Variable overhead efficiency variance

- Actual hours = 5,060.
- Standard hours (from above) = 4,140 hours.
- Standard Variable overhead rate = €4 per DLH.
- VOEV = (5,060 – 4,140 = 920 hours) * €4 = €3,680 U.

Variable overhead spending variance

- Actual variable overhead = €18,722.
- Standard variable overhead = (5,060 actual DLH * €4) = €20,240.
- VOSV = €18,722 - €20,240 = €1,518 F.

Reconciliation

Budgeted contribution		**€276,000**
Sales price variance		€9,200 F
Market share variance	€63,480 U	
Market size variance	€41,400 F	
	=======	
Sales volume variance		€22,080 U
Labour efficiency variance		€16,560 U
Labour wage rate variance		€3,036 U
Materials use variance		€5,750 F
Materials price variance		€4,370 U
Variable overhead efficiency variance		€3,680 U
Variable overhead spending variance		€1,518 F
Actual contribution		**€242,742**

(b) Standard and actual data:

XASH (see part [a]) = 4,140 hours.
XPSH = 4,600 units * 1.15 hours = 5,290 hours.
AH = 5,060 hours.
XASWR = €18 per hour.
XPSWR = €18 + 5% = €18.90.
AWR = €18.60.

Planning variances:

Price: (XPSWR – XASWR) * XPSH = (€18.90 - €18) * 5,290 = €4,761 U
Use: (XPSH – XASH) * XASWR = (5,290 – 4,140) * €18 = €20,700 U

Operational variances:

Price: (AWR - XPSWR) * AH = (€18.60 - €18.90) * 5,060 = €1,518 F
Use: (AH – XPSH) * XPSWR = (5,060 – 5,290) * €18.90 = €4,347 F

(c) The actual contribution (€242,742) was about 9% less than the budgeted contribution (€276,000). The market share (20%) was five percentage points lower than the standard market share (25%). It is worrying that the division manager is so complacent about these disimprovements.

Where cost increases happen, it is not sufficient to say that the division had "no choice" but to pass them on to customers through higher prices. The question is whether it was economically optimal to increase prices. For example, the increased market size had the potential to yield a favourable variance of €41,400 (before allowing for the effect of the cost increases). The selling price increases were apparently designed to recoup the effect of the cost increases, but this spectacularly backfired because the loss of market share (which may well have been caused by the price increase) led to an unfavourable variance of €63,480. This is far more than the combined net effect of all the cost variances, even after offsetting the benefit of the selling price increase.

It is also important not to naively accept claims that cost increases are "beyond the division's control" without proper reflection and scrutiny. For example, where labour variances are concerned, the "planning" variances are unfavourable and the "operational" variances are favourable, which suggest that there were uncontrollable cost overruns which the division manager to partly offset. But we need to reflect on whether we accept this logic. Is it really "beyond the division's control" that staff turnover was much higher than normal? Surely it is part of the division manager's job to keep staff turnover to a minimum, given the adverse cost affects of staff turnover (in terms of lower productivity of new staff).

Tutorial notes

Purpose of question: To require candidates to conduct an advanced variance analysis of the performance of a division, and to respond critically to an assessment of a division's performance making full use of the variance information (Syllabus Area 2).

Options: In part (b) and (c) there are various alternative points that can validly be made, although some points are essential (see below).

Essential components: In parts (a) and (b) candidates need to be able to demonstrate the ability to conduct advanced variance analysis, including (i) market share & market size variances and (ii) planning & operational variances. In part (c) candidates need to be able to respond critically to the statement made, making full use of the variance information so as to reflect a more rigorous (and less naive) assessment of the division's performance.

SOLUTION 2
Kyoto Division

(a) Payoff table:

	Knocked out in 1st round	**Knocked out in 2nd round**	**Qualifies for the 3rd (and final) round**
Option #1: Produce up to 3 separate batches	Revenue: (10,000 * €3.50 = €35,000). Cost: €5,100 + (10,000 * €1.50) = €20,100. Payoff = €14,900.	Revenue: (18,000 * €3.50 = €63,000). Cost: €20,100 + €5,100 + (8,000 * €1.50) = €37,200. Payoff = €25,800.	Revenue: (25,000 * €3.50 = €87,500). Cost: €37,200 + €5,100 + (7,000 * €1.50) = €52,800. Payoff = €34,700.
Option #2: Produce up to 2 separate batches	Revenue: = €35,000). Cost: = €20,100. Payoff = €14,900.	Revenue: = €63,000. Cost = €20,100 + €5,100 + (15,000 * €1.50) = €47,700. Payoff = €15,300	Revenue: = €87,500. Cost = €47,700. Payoff = €39,800
Option #3: Produce a batch of 25,000 units	Revenue: (10,000 * €3.50 = €35,000). Cost: €5,100 + (25,000 * €1.50) = €42,600. Payoff = LOSS €7,600.	Revenue: (18,000 * €3.50 = €63,000). Cost: = €42,600. Payoff = €20,400.	Revenue: (25,000 * €3.50 = €87,500). Cost: = €42,600. Payoff = €44,900.

(b) The expected value (EV) rule is one way of dealing with uncertainty, and seems to be the most appropriate way in this case. The EV rule is designed to maximise the "long run average" payoff from a decision. This approach is appropriate when (as is apparently the situation in this case) the decision is one which is typical of decisions taken regularly by the decision-maker (we are told that this is "an example" of the merchandising manufacturing which the division engages in, and is specific to one particular competition and even to the degree of progress which the team makes in it). There will almost certainly be other decisions of a similar type and magnitude on other occasions, so that the law of long run averages can be said to apply in this case and the expected value rule is therefore appropriate.

To apply the EV rule, we need to know the probability of each "state". The states in this case represent particular levels of demand, arising from when the team is knocked out of the competition. States are collectively exhaustive so their combined probability must equal 1. Specifically:

	Knocked out in 1st round	Knocked out in 2nd round	Qualifies for the 3rd (and final) round
Probability	1 – 0.7 = **0.3**	0.7 – 0.65 = **0.05** OR: 1 – 0.3 – 0.65 = **0.05**	**0.65**

Expected values:

EV (Option 1) = (0.3 * €14,900) + (0.05 * €25,800) + (0.65 * €34,700) = €28,315.

EV (Option 2) = (0.3 * €14,900) + (0.05 * €15,300) + (0.65 * €39,800) = €31,105.

EV (Option 3) = (0.3 * LOSS €7,600) + (0.05 * €20,400) + (0.65 * €44,900) = €27,925.

Option 2 has the highest Expected Value and should be preferred.

Tutorial notes

Purpose of question: To require candidates to demonstrate an ability to measure and manage uncertainty, including application of the expected value (EV) decision rule, and to justify why the EV rule is specifically appropriate in the circumstances in the case (Syllabus Topic 1).

Options: There is some scope for variation in the format of calculations, although the calculations must be clear and comprehensive. In Requirement (b), there is some scope for variation in the points made to justify why EV is the appropriate criterion for dealing with uncertainty in this case.

Essential components: Candidates must present the detailed payoff table required in part (a). Their answers to part (b) must include the calculations necessary to support their choice (specifically, the probability of each state and Expected Value calculations for each available option). Answers to part (b) must include full narrative justification as to why EV is appropriate in the specific circumstances of this case; it is not sufficient just to write a generic defence of EV.

SOLUTION 3

Sapporo Division & Nara Division

(a) Preliminary: Spare capacity in Sapporo Division:

Units of SEC needed for Kate's order = 2,000 * 4 = 8,000 units.

Spare capacity in Sapporo Division at present = 40,000 – 35,000 = 5,000 units of SEC 3,000 units can be obtained only by sacrificing an alternative use.

Alternative 1: External sale of an SEC Opportunity cost = €80.

Alternative 2: One-quarter of a "full price" NX Opportunity cost = (€450 - €90) / 4 = €90.

Hence: Cheaper to sacrifice Alternative 1 (€80 < €90).

Preliminary: Spare capacity in Nara Division:

Units of NX in Kate's order = 2,000 units.

Spare capacity in Nara Division at present = 6,500 – 4,000 = 2,500 units of NX not necessary to sacrifice any alternative use.

Incremental effect on group contribution of accepting the order:

Sales: 2,000 units @ €375 =	€750,000
Marginal cost in Sapporo Division: 5,000 units @ €50 =	€250,000
Opportunity cost in Sapporo Division: 3,000 units @ €80 =	€240,000
Marginal cost in Nara Division: 2,000 units @ €90 =	€180,000
Incremental effect on contribution	**+ €80,000**

Hence, it would be in the best interests of the group to accept the order.

(b) Sapporo Division:

5,000 components made using spare capacity: (€80 - €50 = €30) * 5,000 = €150,000 additional contribution.

3,000 components transferred to Nara instead of being sold externally: No effect on profits because the transfer price and external market price are the same (€80 each).

Conclusion 1: Likely that Sapporo Division will favour acceptance of Kate's order because of the €150,000 contribution ("must be accepted in full or not at all").

Conclusion 2: The only caveat is that Sapporo Division may be unhappy turning away a regular customer for SEC to make way for the needs of a once-off order from Kate.

Nara Division:

Sales: [from part (a)]: 2,000 units @ €375 =	€750,000
Transfer price paid to Sapporo Division: (2,000 * 4 = 8,000 units) @ €80 =	€640,000
Marginal cost within Nara Division [from part (a)]: 2,000 units @ €90 =	€180,000
Incremental effect on contribution	**Minus €70,000**

Conclusion:

Kate's order is not likely to be accepted. For the order to be accepted, both divisions must be in favour of it (since Sapporo must manufacture the necessary SECs and Nara must buy the SECs from Sapporo and make the NXs). Although Sapporo would be happy to do its part, Nara will not wish to accept the order because of the adverse effect on its profits. Each division is free to act in its own interests.

(c) From Part (a), there is an incremental contribution to the group of €80,000. From the brief in part (c), each division should get half of this, i.e., €40,000.

From Part (b), at the existing transfer price (€80 per SEC), the Sapporo Division receives €150,000 incremental contribution from the order.

To reduce Sapporo's share of the incremental contribution:

- Total reduction desired = €150K - €40K = €110K.
- Number of units of SEC transferred for purposes of Kate's order, from part (a) = 8,000.
- Reduction in transfer price, for these units = €110,000 / 8,000 = €13.75.
- Revised transfer price, for these units = €80 - €13.75 = €66.25.

Evidence that the incremental contribution from Kate's order is now shared equally between the two divisions:

	Sapporo Division	**Nara Division**
Sales	8,000 * €66.25 = €530,000	€750,000
Cost of paying for transferred SECs		€530,000
Marginal costs within divisions	€250,000	€180,000
Opportunity cost	€240,000	
Incremental contribution	**€40,000**	**€40,000**

Tutorial notes

Purpose of question: To require candidates to appraise whether a market-based transfer pricing scheme is likely to motivate goal congruent behaviour in a particular situation. The question is also designed to require candidates to develop and justify a more robust transfer pricing arrangement which is likely both to achieve goal congruence and also to enable two divisions to share equitably in the incremental contribution from a new customer order which both divisions facilitate (Syllabus Topic 3).

Options: In part (c) candidates have scope to recommend a different transfer pricing arrangement than the one which appears in the suggested solution, but they must demonstrate fully that it meets the criteria specified in the question.

Essential components: In parts (a) and (b) it is essential that candidates provide the analysis requested, including clear workings and (in part [b]) making the assumptions specified in the question. In part (c) it is essential that candidates develop a transfer pricing scheme to meet the brief stated in the question and that they demonstrate fully that it meets these specified criteria.

SOLUTION 4

Yokohama Division

The Yokohama Division seems to have performed extremely well, not just in the short term but also in ways which provide lead indication of likely future success. The consultant's pessimistic assessment is not justified, and the division is likely to be a very attractive investment for potential buyers. The following analysis (structured here around the sections of the division's Balanced scorecard, but incorporating additional information and analysis as appropriate) is offered in support of this view.

Financial themes

Turnover: €950K / €820K = 1.16 →1**6%** increase.

Net profit: €316K / €300K = 1.05 → **5%** increase.

ROI has decreased by (23 – 21 = **2**) percentage points.

Assessment (1): The consultant is right to say that both turnover and net profit have grown, but that profit has grown more slowly than turnover. But it is an "excess of caution" to view this in a negative light, as the consultant apparently does. First, 5% (the growth rate in net profit) is well ahead of inflation, so there is real growth in net profit. Second, the impressive growth in turnover may well have been due to a deliberate decision to offer highly competitive selling prices (e.g., in new locations) and thus deliver more overall profits. If this was the chosen business strategy then it was highly effective.

Assessment (2): ROI may not be a measure of much significance in a business like this, where there are few physical assets. The consultant has suggested that the lack of physical assets may be a weakness but the opposite is more likely true. The division has avoided the risks associated with property ownership (e.g., if occupancy rates fall due to macroeconomic factors) while still capitalising on the benefits through renting out properties through its website.

Customer themes

Number of customers: As the consultant has pointed, this has declined (from 2,150 to 2,000). But it is not clear that this is a weakness. A more positive interpretation of the same data is that turnover per customer has increased significantly (from €820,000 / 2,150 = €381 in 2018 to €950,000 / 2,000 = €475 in 2019). For example, it might be that in 2019 the average visitor made a longer stay and/or for a longer number of nights.

Market share: The consultant has (rightly) stated that market share has stagnated, at 30%. It is explained in the question that the division has chosen to grow by expanding into new markets (e.g., new towns) rather than by trying to expand its market share in existing markets. This is a sensible strategy since it may not be realistic (or wise) to try to dominate a market (e.g., Greater Dublin) by trying to increase market share indefinitely. It is impressive that the division has been able to expand its markets and maintain the same market share as before, thus leading to the significantly increased turnover mentioned above.

Internal process themes

Percentage of sales which come from new markets and towns: In the short term, it makes no difference to the financial outcome (e.g., current year profits or turnover) whether €1 is earned in an existing market (e.g., Greater Dublin) or in a new market (e.g., a town which is being included in the website for the first time). But it is evident that the division regards expansion into new markets as particularly beneficial in the long run, and in this sense €1 of turnover in a new market is better than €1 of turnover in an existing market. Turnover in the new market is apparently regarded as a lead indicator of future success because of the long-run potential value of such markets. This is likely to be why the division regards this as an important metric and why the significant increase (from 15 to 20, i.e., 5 percentage points) as an important indicator of success.

Average time in resolving customer problems: This has almost halved (from 28 to 15 minutes) which is an important indicator of improvement in the customer experience. In this sense it may be an important lead indicator of future success, as satisfied customers are likely to come back in future years. This may also be reflected in the increase in turnover per customer as indicated earlier, with customers returning even in the current year. The consultant has observed that the division's success is largely attributable to the good performance of its employees, and this is very likely one example of this.

Learning and growth themes

Although the consultant attributes the success of the division to the good performance of its employees, there is no evidence that she believes that the calibre of the employees will make the division more attractive to potential purchasers. The reason for this surprisingly dismissive attitude is that employees are not "owned" by the company and therefore can leave if they so wish. This attitude is too pessimistic. Given the central role of employees to the success of the business model, it is not surprising that the division regards as important the two employee-related measures included in this section of the balanced scorecard.

Employees cannot be forced to stay but they can be motivated to stay if their satisfaction level is sufficiently high. The significant increase in the average employee satisfaction level (from 6.5 to 7.4 on a scale with a 10-point maximum) is an important lead indicator of a high probability that employees will choose to remain in their jobs and (as the consultant herself has acknowledged) employee performance is the main factor in the good performance of the division.

The improvement in the average number of employee suggestions implemented (from 4 to 6, per employee per annum) is also a positive lead indicator of likely future success, for two reasons. First, these practical suggestions from employees are likely to have the effect of improving the customer experience (e.g., with their customer-facing experience, employees may be able to suggest improvements such as new apartment access systems which use PINs and eliminate the need for customers to collect physical keys). Second, high rates of implementation of employee suggestions are likely to positively influence employee satisfaction and retention.

Tutorial notes

Purpose of question: To require candidates to make use of the financial and nonfinancial measures contained in a Balanced Scorecard so as to critically evaluate the performance of a division and its strategic worth identify the scope for business process reengineering, including consideration of a possible change in approach to advertising expenditure and possible uses of throughput accounting to manage business processes (Syllabus Topic 4).

Options: Although the information available must be used fully and critically (see below) the layout of the evaluation and the precise interpretations can vary from those indicated in the suggested solution.

Essential components: In order to provide the critical evaluation required in the question, it is important to make full use of the data provided (both in the Balanced Scorecard itself and in the consultant's observations as indicated in the question).

SOLUTION 5

Sakai Division

New approach to advertising

Superficially, this has important attractions:

Advertising can be much more specifically targeted (e.g., to a particular geographical area).

Advertising becomes a much more "variable cost" rather than a "discretionary fixed cost", because the division only pays a fee each time someone actively chooses to see the ad. By contrast, with press or broadcast advertising there is no good way of distinguishing between total audience numbers and people who actively pay attention to the ad, so the division is not paying a fee per "watch" of the ad.

The SMP can easily provide an audit trail as to who has clicked through on the ad: not just total numbers but their location and perhaps other demographic profile (subject to GDPR).

But in practice these benefits may be more limited than they first appear:

Evidence of someone "seeing the ad" is not (itself) evidence that their "likelihood of buying the product" has increased; further analysis is required (see below).

When a SMP user clicks through to Sakai's website, what will they see? At present the division's advertising is mostly in the press and broadcast media; the division does not appear to have significant online advertising. Until the division develops an advertising website, it is not clear that there will be any real benefit from having obtained the visitor's attention in the first place.

Additional information:

Statistical evidence of correlation between "clicks" and sales of Sakai's products. The SMPs will (rightly) claim that they can show evidence of web traffic generated, but this in itself is not evidence of the effectiveness of that traffic. Sakai will need to perform this further stage of data analysis.

Throughput accounting

Analysis of the example provided:

Machine 1: 540 / 0.5 = 1,080 batches of product

Machine 2: 576 / 0.9 = 640 batches of product

Throughput accounting involves managing a production system by giving primary attention to whichever production resource is most scarce relative to the demand for it. In this case, this is M**achine 2** (since 640 < 1,080). In this example, the division would limit production on both machines to 640 batches per month. In principle Machine 1 could produce a bigger amount, but any amount in excess of 640 batches would simply become an unwanted WIP surplus since there would be no capacity on Machine 2 to complete production of these units of the product.

Similarly, in any capital expenditure decision analysis, there would be no benefit from expanding the capacity of Machine 1 since an unused surplus capacity already exists. Any expansion should be of Machine 2 since only thus could the monthly output be increased.

Additional information:

Capital expenditure on expanding **Machine 1** can be ruled out without any further analysis, for the reasons indicated above. Investment in expansion of **Machine 2** would enable an increase in the output of the product, but of course the costs and benefits would need to be financially justified in conventional financial terms (e.g., NPV) before any decision to expand capacity is made.

Tutorial notes

Purpose of question: To require candidates to identify the scope for business process reengineering, including consideration of a possible change in approach to advertising expenditure and possible uses of throughput accounting to manage business processes (Syllabus Topics 5 & 1).

Options: There is considerable scope for variations in the points made, and marks will be awarded for valid alternative points (but there are certain essential elements as indicated below).

Essential components: In relation to the proposed new approach to advertising, it is important that candidates identify significant strengths and weaknesses of the proposed approach. In relation to throughput accounting, candidates must make full use of the example provided and must identify how throughput accounting can be used for the types of decision-making and BPR referred to in the question.