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Strategic Professional – Options

Advanced Performance Management (APM)

March/June 2019 – Sample Questions

APM ACCA

APM

Time allowed: 3 hours 15 minutes

This question paper is divided into two sections:

Section A – This ONE question is compulsory and MUST be attempted

Section B – BOTH questions are compulsory and MUST be attempted

Present Value and Annuity Tables are on pages 8 and 9.

Do NOT open this question paper until instructed by the supervisor.

This question paper must not be removed from the examination hall.

Think Ahead

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Section A – This ONE question is compulsory and MUST be attempted

1 Folt Manufacturing: Company information

Folt Manufacturing (Folt) is a company, which is majority owned by its management team. A number of years ago, it was bought out of a larger multinational business by the management team. The management were supported by a venture capital firm, who provided the remaining equity and now supply all the debt required by the business at market rates. The business manufactures and sells digital imaging devices for use in a variety of industrial situations. A key component in its products is the image processing software which is included. Folt has a small team of software developers who are beginning to gain a reputation for innovative solutions.

Folt has faced increasing pressure in its home market of Beeland from manufacturers in countries with lower cost bases. As a result, it has decided to invest in developing its image processing software rather than compete on the manufacturing of the hardware (the imaging devices). It will continue to sell the imaging devices but the manufacturing will be outsourced.

Folt's overall objective is unchanged and it is 'to provide an adequate return to its capital providers while growing the business into a world-class supplier in its areas of expertise'. The chief executive officer (CEO) has identified three factors which are critical success factors (CSFs) to achieving this objective. These are:

1. Keep capital providers satisfied;
2. Build a world-class software development team; and
3. Ensure that quality of the imaging devices meets market standards.

Performance measurement system

The CEO requires assistance from a performance management expert to create an appropriate performance measurement system for Folt. First, he needs recommendations of suitably justified key performance indicators (KPIs) for each CSF. The CEO has indicated that there should be a maximum of two KPIs per CSF in order to avoid information overload. Then, he wants an assessment of the use of this group of KPIs to measure the strategic performance of Folt.

Outsourced manufacturing: Initial plans

The company has selected a suitable manufacturer for the outsourced work. Xela Manufacturing (Xela) is based in Ceeland, which is a much lower cost environment than Beeland. Folt is preparing to enter into detailed contract negotiations with Xela.

The manufacturing will be done under licence from Folt. This means that Folt supplies the product designs but retains the intellectual rights to them and Xela manufactures to agreed standards of quality. Xela then despatches the devices back to Folt who add the software, package the product and send it to their customers. The quality standards will be set by the service level agreements (SLAs) which will be agreed in the contract.

In preparation for these negotiations, the CEO needs advice on the following three critical areas (target costing, responsibility for quality areas and sources of information) for the negotiation of the agreement.

Target costing

The CEO realises that he needs to understand the cost structure of the products in order to have a firm basis for price negotiation with Xela. He has heard that target costing could be helpful. Therefore, he needs to know how target costing works and how it might be used in this situation. In order to clarify the explanation, he has gathered information (Appendix 1) on one product (Product 123) which requires a redesign before being relaunched into the market. He wants an example calculation of the target cost gap and an explanation of how the result of this would impact on negotiations with Xela.

Responsibility for quality areas

The maintenance of existing quality is a critical concern for Folt, since it will focus on software as the key selling point but this will not be sufficient for market success if the hardware does not meet market standards. The CEO wants to understand, in terms of the four areas of quality costs, how responsibility for each area should be attributed between Folt and Xela.

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Sources of information

Folt has appropriate information systems in place for its existing manufacturing operation. The CEO and board are happy with their operation at present. However, Xela has indicated that its current information systems are purely financial, aiming to collect the required information for its financial reporting duties. The CEO is worried about this and wants an assessment of the impact of this on the management of quality within the contract.

It is now 1 September 20X5.

Required:

Write a report to the CEO of Folt Manufacturing (Folt) to:

(i) Recommend the key performance indicators and evaluate them as required by the chief executive officer (CEO). (16 marks)

(ii) Respond to the CEO's request for work on target costing. (10 marks)

(iii) Explain the four quality cost areas and evaluate how to divide responsibilities for these under the outsourcing contract. (11 marks)

(iv) Assess the impact of the sources of information on the management of quality within the outsourcing contract. (9 marks)

Professional marks will be awarded for the format, style and structure of the discussion of your answer. (4 marks)

(50 marks)

Appendix 1

Information on Product 123

The company aims for a profit margin of 20% on Product 123. Target price is $175 per unit, based on sales and marketing department research.

Cost details:

1. The remaining commercial life of the product is two years.
2. It is estimated that 250,000 units will be sold over the remaining life of the product.
3. Materials cost $37 per unit.
4. Each unit will take 0·5 hours of labour at an average cost of $25 per hour.
5. Each unit will use 1·1 hours of machine time at an average cost (including overheads) of $32 per hour.
6. Packaging and delivery will cost $8 per unit.
7. The design costs of the unit are expected to total $2m.
8. Inspections cost $100,000 per annum – the redesign will not affect this.
9. The rate of failed products, either spotted by customers or by the inspection team, is expected to remain at 2·5%.
10. Failed products will be reworked at an average cost of $20 per unit.
11. The software package supplied by Folt costs $40 per unit.

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Section B – BOTH questions are compulsory and MUST be attempted

2 Vunderg: Company information

Vunderg manufactures windows and related products. The overheads in the business are high and primarily relate to procurement, customer administration and product design. Procurement and customer administration overheads relate to all of Vunderg's product groups. Design overheads currently relate to only two product groups, glasshouses and conservatories. Vunderg's current costing system has been in use for a long time and absorbs overheads into product costs on a direct labour hours basis. The current costing system does not involve identifying the factors which drive the costs of the company's activities and allocating overheads to products based on their usage of those factors.

Current product range

Windows

For many years, Vunderg has manufactured UPVC window frames used for residential house building. Vunderg buys the glass from an external supplier, inserts it into a frame and sells the completed window units to a small number of large construction companies. These window units all have standard designs, specifications and sizes. This market is very competitive, and Vunderg must offer a complete range of windows for sale to the construction companies.

Glasshouses

Five years ago, Vunderg developed a range of small garden glasshouses, for non-commercial use, made of attractive and high quality materials. After initial quality problems due to the use of materials and manufacturing methods new to Vunderg, glasshouse production is now efficient, quality is high and the glasshouses now command premium prices. The glasshouses are sold nationwide through 40 retailers, who vary significantly in the size of orders they place and the level of customer support and trade discounts which they receive from Vunderg. As a result, the profitability of selling to different retailers, or types of retailer, varies significantly.

Conservatories

More recently, Vunderg began manufacturing conservatories* using the same materials as its glasshouse range. These conservatories are expensive and are made to measure for individual customers' houses. There are a wide range of finishes and options available to choose from. Conservatories which match garden glasshouses have become popular with customers who can afford them. Unlike Vunderg's other products, these are sold directly to individual home owners.

* Conservatories are structures made mainly of glass, which are attached to the side of residential houses. They form an additional room in a house and are popular in cool climates.

Future product development

Vunderg is looking to move into another new market soon, as the market for making windows for houses is now saturated. This new market will be the manufacture and design of large windows to be installed in the entrance halls of large, prestigious commercial buildings. These will be bespoke items, designed and manufactured to customers' own specifications.

Recent performance

The CEO is concerned by a recent fall in overall net profit margin despite modest revenue growth and good control of direct costs. In particular, he has said, 'The conservatories part of the business may not be as profitable as its positive contribution (Appendix 1) may suggest. For example, our procurement department spends a lot of time sourcing special materials and finishes requested by customers. Many conservatories have leaked in the rain so we have to rectify these faults and work on a new design to prevent this happening. As we have only basic information systems, it is unclear how much some of these activities are costing. Over 20% of our factory space is dedicated to manufacturing conservatories. We may be better off discontinuing these products.'

The CEO has some experience of activity based costing (ABC) in a previous role and believes that activity based management (ABM) could help to improve Vunderg's strategic performance. He is keen to know what the limitations are of using the ABM method for Vunderg's products and customer types and the problems with its implementation before he makes a decision to implement it.

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It is now 1 September 20X5.

Required:

(a) Advise the CEO how activity based management (ABM) could help improve the strategic performance of Vunderg. (13 marks)

(b) As required by the CEO, assess the limitations of using the ABM method for Vunderg's products and customer types and the problems with its implementation. (12 marks)

(25 marks)

Appendix 1

Contribution by product type for the year ended 30 June 20X5

Product type	No. of units sold	Total contribution ($'000)
Windows	175,000	9,800
Glasshouses	3,800	969
Conservatories	650	910

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3 Cortinas Retail Clothing (CRC): Company information

CRC started as a clothing retailer 20 years ago with one store. The business expanded steadily and had 10 stores after 18 years of trading. Since then, the rate of expansion has increased rapidly with an average of four stores opening per year.

CRC is planning to open its first large out of town store soon and is also considering the acquisition of a food retailing business. Both of these will be supplied with items using CRC's existing central warehouse.

Introduction of RFID system

At the beginning of the 20X5 accounting year, to cope with this rapid growth, CRC acquired a RFID (radio frequency identification device) system at its single central warehouse. This was to help manage inventory more effectively and speed up the processes for receiving items from suppliers and despatching them to stores. Items are still moved manually by staff in the CRC warehouse where there is little automation compared to competitors. There has been some resistance from staff to the RFID system, which they find difficult to use. CRC is currently trying to reduce the number of suppliers it has to help increase efficiency in the warehouse.

Budgeting system

The budget setting process has remained unchanged since CRC was formed. All managers prepare draft budgets using spreadsheets and submit them to the CRC board for approval. Managers use the previous year results as a starting point when drafting the budgets and increase the variable costs in line with any anticipated growth in volumes. For example, when preparing the budget for the year ending 30 June 20X6, the manager of the central warehouse used the actual costs of running the warehouse from the previous year and increased them all by the same percentage. This was to reflect an anticipated increase in volumes in 20X6 over 20X5. Managers are appraised on their performance against the approved budgets.

CRC has needed all its financial resources to fund its expansion and so it has only old and basic IT systems which are not enterprise resource planning systems, unified databases or networked systems.

It has been suggested to the CRC board that the current system of budgeting is no longer suitable and that the business should move to activity-based budgeting (ABB). The CEO has asked you to evaluate the potential introduction of ABB at CRC.

Central warehouse activity in July 20X5

The board has never seen an activity-based budget before and is unsure how it could be used to explain variances between actual and budgeted performance in the central warehouse. As an example, they would like to see how an activity-based budget for the year ending 30 June 20X6 could be used to explain variances from the actual results for the month of July 20X5.

The two key activities which drive costs in the central warehouse are receipts of items into the goods inwards section and despatches of items from the goods outwards section. A receipt into good inwards involves accepting a delivery of items from a supplier, tagging those items and putting them away in the warehouse. Receipts from suppliers contain variable numbers of individual items. Despatches of items from goods outwards are to CRC's own retail stores. Cost driver rates for these two activities will be used to set monthly cost budgets for the warehouse.

The board asked an analyst to prepare an activity-based budget for the central warehouse for the year ending 30 June 20X6. The analyst has collected relevant information on the costs for the year needed to prepare the activity-based budget and has begun the work (Appendix 1).

The total annual cost relating to goods inwards needs to be determined. This should be used to calculate the budgeted cost of each receipt into goods inwards, in order to explain the variance between the budgeted cost and the actual cost of receipts of goods inwards for the month of July 20X5. The analyst has already correctly included the costs of the warehouse manager's salary and the lease of the RFID system into the incomplete activity-based budget in Appendix 1. The board has asked you to complete the analyst's work.

To enable you to complete your calculations, you are told that in July 20X5 there were 650 receipts into goods inwards. These receipts contained 100,000 items, which is the same as the budgeted number of items for the month. The actual total cost of activities driven by receipts into goods inwards for the month was $18,000.

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Required:

(a) Evaluate whether CRC should move from its current budgeting system to ABB. (13 marks)

(b) Complete the analyst's work in Appendix 1 as required by the board and explain the variance between the budgeted cost and the actual cost for each receipt into goods inwards for July 20X5. (12 marks)

(25 marks)

Appendix 1

Analyst's incomplete activity-based budget for the central warehouse for YE 30 June 20X6.

	Total	Goods inwards	Goods outwards	Other
	$	$	$	$
Warehouse manager's salary[1]	55,000	–	–	55,000
Lease of RFID system[2]	75,000	45,000	30,000	–
RFID tagging[3]				
Warehouse staff wages[4]				
Heating and lighting[5]				
Sub-total cost of activities driven by the receipt of goods inwards				

Analyst's notes

Relevant information on costs in the central warehouse for the year ending 30 June 20X6

1. The cost of the warehouse manager's salary relates to all sections of the warehouse and cannot be apportioned directly to goods inwards or goods outwards.
2. The cost for the RFID system is invoiced by a lease company. 60% of this cost is allocated to goods inwards and the remainder relates to goods outwards.
3. The cost of RFID tagging is the wages cost for specially trained staff, known as taggers. Their only job is to attach RFID tags to items when they are received, before the items are put away in the warehouse. All items received are RFID tagged and the costs of tagging are allocated entirely to the cost of goods inwards. Each tagger can attach 35,000 tags per month and is paid an annual salary of $24,000. The cost of each individual RFID tag is negligible.
4. There were 12 full-time warehouse staff throughout the year to 30 June 20X5 who were each paid an annual salary of $22,500. Two more staff will be recruited at the beginning of the new budget year. 50% of the warehouse staff work in goods inwards and 50% in goods outwards.
5. The cost of heating and lighting relates to all sections of the warehouse and cannot be apportioned directly to goods inwards or goods outwards. The actual heating and lighting cost for last year was $10,000 and the warehouse manager has proposed a budget of $10,500 for the coming year. The general cost of inflation though is expected to be zero.
6. The annual number of receipts into goods inwards expected is 9,000, containing a total of 1,200,000 items. These are expected to occur evenly over the year.

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Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

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Annuity Table

Present value of an annuity of 1 i.e. $\frac{1-(1+r)^{-n}}{r}$

Where r = discount rate
n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·368	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·255	10·575	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·134	11·348	10·635	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·004	12·106	11·296	10·563	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·865	12·849	11·938	11·118	10·380	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

End of Question Paper

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