RTP - November 2021

PAPER 5 : STRATEGIC COST MANAGEMENT AND PERFORMANCE EVALUATION

Question 1 : [Case Study]

Nutty Bites produces many edible snacks .....

It is already covered in RTP of November, 2019.

Question 2 : [Case Study]

Topic : Product Life Cycle

Cellwell Technologies Ltd. is a manufacturer of mobile phones. It has been an established player in the market having launched various cell phones models in the last 10 years. With the preference for usage of cell phones increasing, the company has grown rapidly since inception. During the last two years, sales have been increasing but at a slower rate. Competition has increased and hence sales growth has been slowing down.

Cellwell Technologies plans to introduce a new smart phone model called XXX21. The company's research and development team has come up with an additional feature for this cell phone model. This feature will periodically inform the customer using the cell phone regarding any software update required for the model. By installing these updates many existing bugs in the software model and security issues to the software can be fixed. This process can be executed remotely with the help of the new technology that the research and development team has developed. This improves the cell phone's performance and keeps it running smoothly. It improves compatibility of the software with that used in other applications and devices. It also enhances customer experience as the software update will bring out new software features (like newest emotions / updated dictionary) that can be used by the customer. Consequently, the general utility of the cell phone life will improve by almost a year. There will be less complaints due to performance / compatibility related issues.

The business development team has come up with a proposal for sales promotion. As per this proposal, customers can trade in older model of their cell phone in order to buy the latest XXX21 model. Due to this offer, customers can buy the latest model XXX21 at a substantial discount.

After discussion with the research and development team, they conclude that this would have an additional advantage. Cellwell Technologies can **refurbish** (repair and renovate) these older models and resell them in the market at a substantially lower price. Typically, students or customers in the lower income groups who look for cheaper models may find this offer interesting. This creates a new market space for the company to target.

Those older cell phones traded in, that cannot be refurbished or are beyond repair / use can be **recycled.** Various parts of these phones can be recycled and fitted into the new cell phone models that are being made. Any cell phone model contains various precious metals like gold, copper, platinum as also rare earth elements like neodymium, terbium to name a few. These are difficult to obtain and need to be mined out of the earth causing huge damage to the environment. With the demand for cell phone slated to increase, the need for these materials is going to increase as well. Therefore, if these materials can be extracted from old cell phones that would otherwise have been disposed-off into a landfill, it would benefit the environment while providing an alternate source of material procurement. Since billions of cell phones are used globally, every small measure makes an impact. With increasing awareness about environment hazards, such a proposal is likely to find support among customers. It is also helpful to improve the company's brand image.

Both proposals to introduce software upgrade feature in the cell phone as well as the trade in sales promotional offer are unique as no other competitor has such features in their products or have made such offers yet.

Required :

(i) IDENTIFY the lifecycle phase of Cellwell Technologies Ltd. JUSTIFY your response with reference to the case facts.

(ii) DISCUSS the impact of the decision to allow trade in of the company's older cell phone models on the product lifecycle of such phone models.

Answer 2 :

(i) Cellwell Technologies Ltd. is in the **"Maturity" stage** of product lifecycle. It has been an established player in the cell phone market. The company has seen rapid sales growth. Over the last 2 years sales have been increasing at a slower rate due to increased competition. Therefore, the company has decided to introduce a new product model in the form of XXX21.

Retention of existing customers and trying to win over the competitor's customers is the strategy being used by Cellwell Technologies. The XXX21 model that enables customers to upgrade the software of their smart phone enhances its product features. This differentiates the company's product with that of its competitors. Technology changes at a fast pace. By enabling customers to upgrade their mobiles would definitely improve performance, lower customer complaints due to breakdown or compatibility issues due to older software. Improved performance along with longer product life would definitely enhance customer satisfaction as well as attract newer customers. The add on benefit is that the execution of this update can be managed from remote locations without the need for in person assistance.

The **offer to trade in old cell phones** while buying the latest XXX21 model would appeal to price sensitive customers. It will also evince interest of customers who are looking to dispose their cell phones that would otherwise end up in the landfill. The trade in offers monetary benefit in the form of a discount. This sale promotional offer to trade old phones for a discount in the price of the latest model XXX21 would definitely help Cellwell Technologies to effectively compete with its competitors.

Cellwell Technologies would have the first mover advantage by implementing both the product enhancing / differentiating feature in model XXX21 as well as the trade in options to customers. This shows that the management has a **clear plan on how to effectively beat the competition.** This indicates that the company is now in the "Maturity" stage of product lifecycle.

(ii) Cellwell Technologies has introduced a sales feature to allow trade in of older cell phone models in exchange for model XXX21 at a substantial discount. These phones would then be used in 2 ways (1) by refurbishing (repairing and renovating) or (2) recycling useful product parts and extracting precious metals and earth elements from the phones.

The **refurbished phones** would be sold at a substantially lower price to customers like students or lower income groups. Thus, the older cell phone model gets a **new lease of product life** after the requisite repairs. This extends its product life cycle by a further time frame until there may be no use of the cell phone model at all.

In the case of phones that are of no use / completely dead, usable parts are being **recycled** into existing products. Thus, this becomes an alternate source of material procurement for the company at a much lower cost. Consistent use of this measure would definitely reduce the cost of production by a certain margin. The product lifecycle of such cell phones (dead phones) is **not being extended.** However, they continue to provide value to the company with the help of the recycling process.

The intangible benefit of this measure would be the positive impact that recycling would have on the environment. A move that would definitely enhance the company's brand image.

Question 3 : [Practical Question]

Topic : Standard Costing

Williams Footwear (WF) is a shop that focuses on shoes for various sports and activities like jogging, cricket, tennis, and hockey. Budgeted profit for the WF is calculated considering an average selling price of ₹ 500 per pair of shoes and an average cost of ₹ 350 per pair of shoes. The supervisor of the WF has discretion in staffing and in setting prices. Usually, the WF is staffed for 650 hrs. per month at a budgeted rate of ₹ 125 per hr. In addition to this base wages, sales staff gets a payment equal to 5.5% of takings. Moreover, staffing levels are not expected to change in response to "little" changes in shoe sales. For Sep. 2021, the WF had budgeted sales of 2,250 pairs of shoes and 650 staffing hrs. Actual results for Sep. 2021 were as follows :

Pairs of shoes sold	2,500
Revenue ₹	12,00,000
Less: Cost of shoes	8,25,000
Less: Staff – additional payment	66,000
Less: Staff – base wages @ ₹ 125 per hour	78,125
Profit	₹ 2,30,875

Note – "little" changes in shoe sales is specified as ± 12%.

Required :

(i) PREPARE a reconciliation statement of budgeted profit to actual profit.

(ii) COMMENT on supervisor's performance.

Answer 3 :

Student Note : First check the working notes and then main answer for better understanding.

(i) Reconciliation Statement of Budgeted and Actual Profit (for Sept '2021)

Budgeted profit (see workings below)	1,94,375
Contribution volume variance (F)	30,625
Sales price variance (A)	(50,000)
Shoe cost variance (F)	50,000
Staff cost variance – commission (F)	2,750
Staff cost variance – base wage (F) Fixed cost	3,125
Actual Profit	₹ 2,30,875

(ii) Comments :

The performance seems good. It shows that the supervisor of the WF has passed on a 5.7% decrease in shoe cost to customers (same is also revealed through the entirely offsetting of the shoe cost variance with price variance). Actual shoe costs is decreased by ₹ 20 per pair with a corresponding decrease in selling price by ₹ 20 per pair. In return, the reduction in the selling price has produced a favourable volume variance and a reasonable increase in profit.

Due to reduction in the selling price, staff commission is also lower than budgeted. In nutshell, ₹ 50,000 reduction in revenue led to (5.5% x ₹ 50,000) = ₹ 2,750 reduction in commission cost.

Lastly, staffing requirement is 25 hours lower than budget, leading to savings of (25 hrs. x ₹ 125) = ₹ 3,125. Therefore, the supervisor attained an increase in sales with lesser staff hours.

Overall, it appears that the manager has done a great job of making revenue and controlling costs as well.

Workings :

Statement Showing Budgeted and Actual Profit (Sep '2021) :

Particulars	**Budgeted Data**	**Actual Data**
(a) Units (pairs of shoes)	2,250	2,500
(b) Price per pair of shoes	₹ 500 [Given]	₹ 480 [12,00,000 / 2,500]
(c) Cost per pair of shoes	₹ 350 [Given]	₹ 330 [8,25,000 / 2,500]
(d) Commission rate per pair	₹ 27.50 (5.5% of ₹ 500)	₹ 26.40 (5.5% of ₹ 480)
(e) Contribution per pair [b - c - d]	₹ 122.50	₹ 123.60
Total Revenue [a x b]	₹ 11,25,000	₹ 12,00,000
Less: Cost of shoes [a x c]	7,87,500	8,25,000
Less: Staff – additional payment (i.e. commission) [a x d]	61,875	66,000
Less: Staff – base wages [*Fixed]	81,250 [650 hrs. x 125]	78,125 [625 hrs. x 125]
∴ **Profit**	₹ 1,94,375	₹ 2,30,875

***Note :** There is an increase in sales by 250 pairs. It is 11.11% of budgeted sales volume. (i.e. 250/2250 x 100). It is below 12% and hence it is considered as a little change. This little change will not cause a change staffing level i.e. in base wages. Hence, we may consider the base wages as fixed cost.

Computation of variances :

Total Profit Variance	=	Budgeted Profit – Actual Profit
	=	₹ 2,30,875 – ₹ 1,94,375
	=	₹ 36,500 (F)
Contribution Volume Variance	=	Std. Cont. p. u. x (Budgeted Qty. – Actual Qty.)
	=	₹ 122.50 x (2,250 – 2,500)
	=	₹ 30,625 (F)

Sales Price Variance	=	Actual Qty. sold x (SSP – ASP)
	=	2,500 x (₹ 500 – ₹ 480)
	=	₹ 50,000 (A)
Shoe Cost Variance	=	Standard cost – Actual cost
	=	(₹ 350 x 2,500) – ₹ 8,25,000
	=	₹ 50,000 (F)
Staff Cost Variance-commission	=	Standard cost – Actual cost
	=	(₹ 27.50 x 2,500) – ₹ 66,000
	=	₹ 2,750 F)
Staff Cost Variance (base wage)	=	Budgeted cost – Actual cost (like fixed OH)
	=	₹ 81,250 – ₹ 78,125 = ₹ 3,125 (F)

Question 4 : [Practical Question]

Topic : Relevant Costing

Felicity Ltd. is a chemical manufacturing company. It has received a special project that needs to be completed within 3 months from the time it is accepted. The management has to communicate its decision regarding acceptance or rejection of the project within few days. They have approached you, the management accountant to work out the costing for this project. Following is the information available :

1. Financing :

   The company would require a short-term overdraft of ₹ 5,00,000 immediately in order to execute the project. Bank charges an interest of 10% per annum on this overdraft. This over overdraft facility would be needed for the duration of the project, that is 3 months and would be repaid in full at the end of the period.

2. Materials :

   Felicity Ltd. has a stock of inventory of 5,000 kg on hand that is not of immediate use. It can be sold as scrap in the market at ₹ 250 per kg. The special project requires 3,000 kg. of this inventory which can be replaced at the current market price of ₹ 300 per kg.

3. Labour :

(a) All skilled workers currently work full time in their respective departments, there are no idle hours. For this special project, 5 workers would be needed from other departments. They would totally devote 2,000 hours of labour time to this project. The cost of labour per hour is ₹ 300. Since their working hours have been diverted to this project, the production in the other departments cannot be met. Hence, the company would incur a loss of contribution of ₹ 1,00,000 for these 2,000 hours. Alternatively, the company can outsource the labour for this special project at a total cost of ₹ 6,25,000. The management will opt for the more cost-effective option as the quality of both in-house manufacturing and outsourcing is the same.

(b) Overtime payment to inspection supervisor, who checks the final products would be ₹ 25,000. This would be incurred irrespective of whether the labour is in-house or outsourced.

4. Machine X-2.1”

   This project would require the use of an existing machine X-2.1”. Depreciation of X-2.1” is ₹ 40,000 per annum. The variable operating cost of X-2.1” for the three month period would be ₹ 3,00,000. At present, X-2.1” is operating at full capacity. By diverting it exclusively for the special project would cost the company a loss of contribution of ₹ 1,00,000 for the three month period.

5. Administration overheads include apportionment cost of ₹ 25,000 and an incremental cost (incurred specifically due to the acceptance of the project) of ₹ 10,000.

6. Total revenue that the company can earn from the project is ₹ 20,00,000.

Required :

COMMENT whether the special project should be accepted or not. Also give a complete ANALYSIS of the special project cost based on the principles of relevant costing.

Answer 4 :

Student Note : ICAI has given a detailed explanation for each item of cost because in the question they had asked for a complete analysis of the special project cost.

Special Project Cost :

Item of Cost	**Working reference**	**Amount (₹)**
Project financing : Interest of overdraft	(Refer note 1)	12,500
Materials	(Refer note 2)	7,50,000
Outsourced labour cost	(Refer note 3)	6,25,000
Overtime paid to inspection supervisor	(Refer note 4)	25,000
Cost of using Machine X-2.1"	(Refer note 5)	4,00,000
Administrative overheads	(Refer note 6)	10,000
Total cost for accepting the project		**18,22,500**

Comment :

Revenue to be earned from the project is ₹ 20,00,000 while the relevant cost of accepting the project would be ₹ 18,22,500. Thus the project can yield a surplus of ₹ 1,77,500. Therefore, the special project should be accepted.

Working Notes / Analysis of Costs :

Note 1 : Project financing for 3 months through overdraft of ₹ 5,00,000 at interest of 10% per annum.

This is a relevant cost since it is an incremental cost to be incurred only if the project is accepted. The incremental cost is the interest to be paid on the overdraft of ₹ 5,00,000 for 3 months. At the end of three months, the overdraft will be repaid in full, therefore there will be no further incremental cost.

Relevant cost = 10% x ₹ 5,00,000 x 3 / 12 months = ₹ 12,500

Note 2 : Material Cost

The company already has material of 5,000 kg in its inventory. This is a sunk cost that has already been incurred. Materials requirement for this project is 3,000 kg which can be sourced from the current inventory of 5,000 kg. This material could have been sold as scrap at ₹ 250 per kg. However, since 3,000 kg of this material can be used for this project, the sale proceeds from the scrap sale of 3,000 kg. would be the opportunity cost that has to be accounted for. This is the cash inflow forgone if the project is accepted.

Relevant cost = 3,000 kg x ₹ 250/kg. = ₹ 7,50,000

Replacement cost of 3,000 kg. at ₹ 300 per kg would be irrelevant since there is no need to buy this material, it is already in inventory and this material has no further immediate use, so there is no need to replace it.

Note 3 : Labour cost – cost of in-house production v/s cost of outsourcing the work for the project

Five skilled workers from other departments would need to devote 2,000 hours for this project. They are paid at ₹ 300 per hour. They are fully working in their respective departments and are not idle. The cost of labour of these 5 workers for 2,000 hours would be a relevant cost for the project.

At the same time, the loss of contribution for diverting the skilled workers' hours for the special project represents an opportunity cost that is also a relevant cost. This is the revenue foregone if the project is undertaken.

Hence, total relevant labour cost for in house production

= Cost of skilled workers + contribution lost (opportunity cost)

= (2,000 hours x ₹ 300/hr.) + ₹ 1,00,000 = ₹ 7,00,000

The cost of outsourcing the work for this project is ₹ 6,25,000. Since the quality of work is the same under both options, it is cost effective to outsource the labour for this special project.

Therefore, the relevant cost for the special project is lower of the above = ₹ 6,25,000.

Note 4 : Overtime paid to inspection supervisor

Overtime paid to inspection supervisor specially for this project is an incremental cost, and hence it is a relevant cost.

Note 5 : Machine X-2.1"

The variable operating cost of X-2.1" is ₹ 3,00,000. It is an incremental cost, therefore a relevant cost. The depreciation of ₹ 40,000 per annum on it is a sunk cost/common cost and hence not relevant.

This machine X-2.1" is working at full capacity and has no idle time. Hence the contribution loss of ₹ 1,00,000 for the three month period due to this diversion will be an opportunity cost that has to be accounted for. This is revenue forgone if the project is accepted.

Hence, total relevant cost of using machine = 3,00,000 + 1,00,000 = ₹ 4,00,000

Note 6 : Administrative overhead

Allocation of administrative overhead of ₹ 25,000 is not a relevant cost since this is a sunk cost/common cost already incurred. Incremental administrative cost of ₹ 10,000 incurred specifically for the project is a relevant cost and hence has to be accounted for.

Question 5 : [Practical Question]

Fire Safety (FS) is the manufacturer and supplier of firefighting .....

It is already covered in RTP of November, 2019. Earlier Name : N_2 Co.

Question 6 : [Practical Question]

Topic : Life Cycle Costing

Asian Mould Components (AMD) was established in 2001 and has enormous wealth of experience in the mould manufacturing industry and serves wide range of plastic moulds all over nation. Over the past decade, AMD has developed the reputation for quality products & services for customer focused approach. It deals in injection moulds, blow moulds, die sets, moulds base etc.

With a state-of-the-art infrastructure facility, AMD is able to meet the qualitative and quantitative demands of its clients. Its vision & mission is to provide high class manufactured products by using best quality raw materials.

AMD has developed a new product "M-9" which is about to be launched into the market and anticipates to sell 1,20,000 of these units at a sales price of ₹ 200 over the product's life cycle of four years. Data pertaining to product "M-9" are as follows :

Costs of Design and Development of Moulds, Dies, and Other Tools	₹ 12,37,500
Manufacturing Costs	₹ 83 per unit
Selling Costs	₹ 80,000 per year + ₹ 32 per unit
Administrative Costs	₹ 1,23,000 per year
Warranty Expenses	4 Replacement Parts per 20 units at ₹ 8 per part; 2 Visit per 750 units (Cost ₹ 350 per visit)

Required :

(i) COMPUTE the product "M-9"s 'Life Cycle Cost'.

(ii) SUGGEST two ways to maximize "M-9" lifecycle return.

Note : Ignore time value of money.

Answer 6 :

(i) Statement Showing "M-9"s Life Cycle Cost (for 1,20,000 units) :

Particulars	**Amount (₹)**
Design and Development cost of Moulds, Dies, and Other Tools	12,37,500
Manufacturing Costs (₹ 83 x 1,20,000 units)	99,60,000
Selling Costs (₹ 32 x 1,20,000 units) + (₹ 80,000 p.a. x 4 years)	41,60,000
Administrative Costs (₹ 1,23,000 p.a. x 4 years)	4,92,000
Warranty Cost Replacement of parts (1,20,000 units / 20 units x 4 parts x ₹ 8) Visit cost (1,20,000 units / 750 units x 2 visits x ₹ 350)	 1,92,000 1,12,000
Total Lifecycle Cost	**1,61,53,500**

(ii) Following ways are suggested to maximize "M-9" lifecycle returns :

R&D Costs :

Often significant part of cost is committed at the R&D phase of new product, hence AMD should carefully plan and design its new product "M-9" as it will determine the number of parts, production process to be used etc. AMD can apply **value engineering** here. It involves improving product quality, reducing product costs, fostering innovation, eliminating unnecessary and costly design elements, ensuring efficient investment in product and developing implementation procedures. Value engineering is most successful when it is performed early in product development stage. A value engineering study should be performed within the first 25-30% of the design effort prior to selecting the final design. Here, it is also important that R&D team should work as a part of cross functional team i.e. (participate in a group of people from different functional areas), to minimise lifecycle cost and the production cycle time in new development.

Speed up the Product Launch :

In cut throat competition, it is important for AMD to get new product "M-9" launched into the market as soon as possible. Since this will give "M-9" a **long stay** in the marketplace without competition in the market. Competitors always try to launch a rival product as quickly as possible. AMD may lose overall profitability if it delays in launching of Product "M-9". It is usually worthwhile incurring extra costs to keep the launch on schedule or to speed up the launch.

Question 7 : [Practical Question]

Topic : CVP Analysis

Hotel Nauru, Zeeland, an affordable leisure hotel resort .....

It is already covered in RTP of November, 2019. Earlier Name : Hotel Nikko

Question 8 : [Practical Question]

Topic : Cost of Quality

Star Automobile Group is among top 20 business houses in India. It has been .....

It is already covered in RTP of November, 2019.

Question 9 : [Practical Question]

Topic : Cost of Quality

A company produces and sells a single product. The cost data per unit .....

It is covered in ICAI module and also in our Regular Notes under Chapter 2.

Question 10 : [Question]

Topic : Balanced Scorecard

Z Steels is a leading manufacturer of flat and long products .....

It is already covered in RTP of November, 2019. Earlier Name : B Steels

Question 11 : [Match the pairs]

Topic : Basic Concepts

Identify the correct pair of statement

A	During_____ stage there is space for all, competitors and firms are focusing on keeping up with customer demand and not looking into the future.	(i)	Diversification
B	When the buyer has more access to information then he/ she can possibly switch products or even perhaps backward integrate and make the products themselves. _____ power would decrease.	(ii)	Centralised
C	A health insurance firm moving into a business of operating fitness centre is an example of_____ strategy.	(iii)	Maturity
D	Lower switching costs mean that _____will have more power.	(iv)	Supplier's
E	Major product differentiation and _____ is usually considered a barrier to entry.	(v)	Growth
F	A _____ organisation has many levels of management, vests decision-making authority at the top.	(vi)	Buyers
G	The _____ is a high-level position and helps capture the organisation's fundamental purpose.	(vii)	Branding
H	A wine producer that uses grapes grown in its own winery is an example of _____.	(viii)	Mission
I	The life cycle stage _____ is characterised by slower growth, increased buyer power, supplier meeting demand, and a shift towards efficiency.	(ix)	Vertical Integration
J	_____ helps management to report on the achievement of strategic goals / objectives.	(x)	KPIs

Answer 11 :

A	B	C	D	E	F	G	H	I	J
(v)	(iv)	(i)	(vi)	(vii)	(ii)	(viii)	(ix)	(iii)	(x)

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