CERTIFIED PUBLIC ACCOUNTANT

ADVANCED LEVEL 2 EXAMINATIONS

A2.2: STRATEGIC PERFORMANCE MANAGEMENT

DATE: THURSDAY 28, NOVEMBER 2024

MARKING GUIDE & MODEL ANSWERS

SECTION A

QUESTION ONE

Marking Guide

Question	Sub-question	Description	Allocated marks	Total marks
1	(a)	**Analysis of financial performance of Kamonyi University of Science and Agriculture**		
		Award 1 Mark for a well prepared and presented report with headings, subject, introduction, body and conclusion	1	13
		Award 1 mark for a well calculated ratio or trend in analyzing revenues, Award 2 Marks for the analysis of what caused that performance Max 3 Marks	3	
		Award 1 mark for a well calculated ratio or trend in analyzing expenditures, Award 2 Marks for the analysis of what caused that performance Max 3 Marks	3	
		Award 1 mark for a well calculated ratio or trend in analyzing gearing level, Award 2 Marks for the analysis of what caused that performance Max 3 Marks	3	
		Award 1 mark for a well calculated ratio or trend in analyzing working capital ratio, Award 2 Marks for the analysis of what caused that performance Max 3 Marks	3	
	(b)	**Analysis of KUSA's non-financial performance, considering the points highlighted by DVC for Finance and for Administration**		
		Award 2 Marks for a well explained analysis of non-financial permeance using program accreditation. Max 2 Marks	2	8
		Award 2 Marks for a well explained analysis of non-financial permeance using number of projects. Max 2 Marks	2	
		Award 2 Marks for a well explained analysis of non-financial permeance using marketing strategies. Max 2 Marks	2	
		Award 2 Marks for a well explained analysis of non-financial permeance using number of admitted students. Max 2 Marks	2	
	(c)	**Explain how the new strategic performance management system in KUSA as highlighted by the DVC for Planning could be implemented**		
		Award 1 Mark for a well explained Kaizen process	1	5
		Award 1 Mark for a well explained tips of how kaizen works. Max 4 Marks	4	
	(d)	**Using data provided, comment on the direct labour hour rate when NCPP if it is to operate at 70% and 90% level of capacity**		

Question	Sub-question	Description	Allocated marks	Total marks
		Award 1 Mark for a well prepared and presented report with headings, subject, introduction, body and conclusion	1	10
		Award 0.5 Marks for a well calculated indirect labour for each of 70% and 90%	1	
		Award 0.5 Marks for a well calculated store for each of 70% and 90%	1	
		Award 0.5 Marks for a well calculated fixed cost of power for each of 70% and 90%	1	
		Award 0.5 Marks for a well calculated variable cost of power for each of 70% and 90%	1	
		Award 0.5 Marks for a well calculated variable cost of repairs for each of 70% and 90%	1	
		Award 0.5 Marks for a well calculated fixed cost of repairs for each of 70% and 90%	1	
		Award 0.5 Mark for each well calculated direct labour rate. Max 1.5 Marks	1.5	
		Award 1 Mark for well-articulated comment. Max 1 Mark	1.5	
	(e)	Prepare a marginal operating statement of NCPP fort the month of April 2024 and comment on each variance		
		Award 1 Mark for budgeted contribution	1	10
		Award 0.5 Marks for sales volume contribution variance	0.5	
		Award 0.5 Marks for sales price variance	0.5	
		Award 0.5 Marks for material price variance	0.5	
		Award 0.5 Marks for material usage variance	0.5	
		Award 0.5 Marks for labour rate variance	0.5	
		Award 0.5 Marks for labour efficiency variance	0.5	
		Award 0.5 Marks for budgeted fixed overhead	0.5	
		Award 0.5 Marks for fixed overhead expenditure variance	0.5	
		Award 2 Marks for a well calculated actual Profit	2	
		Award 1 Mark for each well explained comment and reason for variance. Max 3 Marks	3	
		Discuss circumstances under which NCPP can charge prices on its products below its marginal cost		
	(f)	Award 0.5 marks stating and 0.5 Marks for explanation for a well explained circumstances Max 4 Marks	4	4
		Total	**50**	**50**

Model Answer

From: Senior Management consultant
To: Boar of Governors/Directors
Date and Place: Kigali, the 01 January 2024

Subject: Analysis of financial and non-financial performance of Kamonyi University of Science and Technology

Introduction

Muzindutsi & Associates Ltd has been requested to produce the financial and non-financial performance of Kamonyi University of Science and Technology (KUSA). Our analysis has emphasized on available financial statements and other information extracted from the university's annual report. Our analysis has hit on the following variables: Revenue trends, cost management, gearing level, accreditation status, market share trend, admission trend etc…

(a) Analysis of financial performance of Kamonyi University of Science and Agriculture

- **Revenue trend:** KUSA has around four revenue streams namely: revenue from students, consultancy fees, rent, and research grant. It is pretty showing that almost all revenues are shrinking over time whereby, the university failed to keep the increase in revenues. This is shown in the below table:

Description	**2021**	**2022**	**2023**	**2024**
	%	**%**	**%**	**%**
Revenues				
Admission fees	100%	-12%	-59%	-65%
Registration fees	100%	-4%	-58%	-73%
Tuition fees	100%	-7%	-29%	-71%
	100%	**-7%**	**-33%**	**-71%**
Other revenues				
Consultancy fees	100%	-2%	-14%	-24%
Rent revenues	100%	1%	10%	46%
Government & Research grants	100%	-7%	-17%	-31%
	100%	**-4%**	**-10%**	**-12%**

This constant reduction in revenues may be mainly attributable to the following factors:

1. High competition from the international universities which have highly qualified and experienced lecturers
2. Lack of internationally accredited programmes which may cause students to shift from KUSA to other universities
3. Lack of motivated lecturers who are suffering from work stress
4. Outdated information system and lack of proper revenue management policy
5. Constant reduction in KUSA's market share which reduced from 62% in 2018 to 10% in 2024
6. Reduction of programs being offered in evening and during the weekends
7. Lack of enough community engagement campaigns

8. Low level of marketing investments
9. Due to the high labour turnover, the revenues from consultancy have reduced as those consultancies are usually done by university lecturers

- **Expenditure management:** It is clear that KUSA is not managing its expenditure in a proper manner. As it is shown in the below table, the expenditures have been increasing more than even the increase in revenues themselves.

Description	**2021**	**2022**	**2023**	**2024**
	FRW' 000	**FRW' 000**	**FRW' 000**	**FRW'000**
Revenues	1,704,900	1,611,470	1,333,462	990,300
Expenditures	1,364,700	1,482,300	1,614,490	1,707,780
%	**80%**	**92%**	**121%**	**172%**

Staff costs are the main expenditure which made the bigger portion of the total expenditure. This constant increase in expenditure may be mainly attributable to the following factors:

1. KUSA uses outdated information system which is manual system. This has led the university to hire more administrative staff and data managers to manually capture all payment and other students' data.
2. There might be an issue in recruitment and management of lecturers. It is clear that the number of students has been declining dramatically over time, despite this reduction, KUSA's staff costs have increased from 2021 onwards.

- **Gearing level:** KUSA is highly geared. From 2021 to 2024, the university has continually increased its debts. When analyze the repayment capacity of the university, you can realize that it will fall in financial distress soon because of the following factors

1. The short-term debts and creditors that should be paid in a period less than 12 months are greater than the available cash balances. This will force the university to fail to meet its short-term obligations.
2. The increase of debts which may be have been taken to help the reduced level of revenues to cover university's operating costs have no clear ways how they will be repaid as they keep to increase over years
3. The increase in high level of debts may be also be attributable to the weaknesses in recovery department as they are not timely recovering the tuition fees from students

Description	**2021**	**2022**	**2023**	**2024**
	FRW' 000	**FRW' Millions**	**FRW' Millions**	**FRW' Millions**
Equity and Liabilities				
Share capital	500,000	500,000	500,000	500,000
Liabilities				
Long term debts	750,000	850,000	890,000	1,020,300
Short term debts	225,000	255,000	267,000	306,090
Total debts	**975,000**	**1,105,000**	**1,157,000**	**1,326,390**
Total	1,475,000	1,605,000	1,657,000	1,826,390

Description	2021	2022	2023	2024
	FRW' 000	FRW' Millions	FRW' Millions	FRW' Millions
Gearing level_%	**66%**	**69%**	**70%**	**73%**

The university needs to invest in the new technology, but as it is a huge investment, it can increase the gearing level if initial outlay is sourced as a debt.

- **Working capital (Cash, debtors and creditors) management:** The university has not managed well its working capital, this is well illustrated by the high level of unrecovered debts and the low level of cash.

Description	2021	2022	2023	2024
	FRW' 000	FRW' Millions	FRW' Millions	FRW' Millions
Total revenues	1,704,900	1,611,470	1,333,462	990,300
Accounts receivables	657,600	612,165	441,795	193,275
Debtors 'days	**140.78**	**138.66**	**120.93**	**71.24**

The University has very long receivable days: the days the university takes to recovers debts from accounts receivables. Luckily, they are being reduced overtime but they are still too long. These long receivable days may be mainly attributable to the lack of credit policy in place and the weakness of recovery department. This automatically has the negative effects on liquidity which may be a reason of lack of enough debts' repayment capacity.

- **Investment in non-current assets:** Based on available financial information, it is clear that the university's has not invested in new non-current assets since 2021. It is also accompanied by the low level of investment repairs and maintenance, this will lead to the deterioration of university's assets which may also be a real cause of reduction in number of students as the university operate in a very old premises (Building, fixtures, furniture's, IT equipment's, libraries etc….).

Note to the marker: A student may use another financial performance measurements including liquidity ratios, profitability ratios etc.… to analyze the performance. He/she can be awarded the equal marks.

(b) Analysis of KUSA's non-financial performance, considering the points highlighted by DVC for Finance and for Administration

- **Program accreditation:** Even if all KUSA 's program are locally accredited, the university has no any single program which is internationally accredited. This implies that many students will leave the university for those that are internationally accredited. It was shown that many of the competitors have many internationally accredited programs. This may be one of the reasons for the continual reduction of kusa's market share and the reduction of number of admitted students.
- **Number of projects:** The number of projects being implemented at KUSA has been declining since 2021. This is because of the high labour turnover of lecturer due to low pay in KUSA. Remember, all projects and consultancies are being done by available lecturers,

the reduction in number of lecturers directly affect the number of projects being undertaken in the university.

- **Marketing strategies:** It is pretty clear that the university has not invested the required investment in marketing of its program. The lack of significant investment in marketing and community engagement directly affects the number of students who may be admitted to the university. In a competitive environment, different marketing strategies should be put in place to ensure the university programs are widely known.
- **Number of admitted students:** The number of students has been declining, this is attributable to the lack of international accreditation, lack of updated technology and information system, high level of tuition fees compared to that of competitors etc…The programs at KUSA might have been outdated as lecturers are no longer giver the continuous professional development

(c) Assess the desirability of the adoption of the new strategic performance management system in KUSA as highlighted by the DVC for Planning

Kaizen is a Japanese philosophy that focuses on continual improvement throughout all aspects of life. Kaizen aims to eliminate waste in all systems of an organization through improving standardized activities and processes. By understanding the basics of Kaizen, KUSA can integrate this method into their overall Six Sigma efforts.

The following are some basic tips for doing Kaizen

- Replace conventional fixed ideas with fresh ones to cope with the new technological ideas and innovation which will helps KUSA when it will change the technology,
- Start by questioning current practices and standards: This will involve the analysis of the current practices and come up with idea of how things can be done a modernized way
- Seek the advice of many associates before starting a Kaizen activity.
- Think of how to do something, not why it cannot be done.
- Don’t make excuses. Make execution happen.
- Do not seek perfection. Implement a solution right away, even if it covers only 50 percent of the target.
- Correct something right away if a mistake is made.
- **Quality**: Bettering products, service, work environment, practice and processes.
- **Cost**: Reducing expenses and staff costs, and use of energy and resources.
- **Delivery:** Cutting service delivery time, movement and non-value-added activities

Conclusion

KUSA is losing its competitive position over its competitors. This is evidenced by the dramatic reduction in its market share from 62% in 2028 to 10% in 2024. As many factors which caused this reduction have been elaborated above, the university should ensure the following for it to improve its productivity and regain its competitive position:

- Improve and update its academic programs
- Improve working environment

- Invest much in marketing strategies
- Invest in updated information systems
- Improve its recovery procedures and put in place the formal credit policy

Nyanza Cement Processing Plant (NCPP)

From: Senior Management consultant
To: Boar of Governors/Directors
Date and Place: Kigali, the 01 January 2024

Subject: Cost analysis of Nyanza Cement Processing Plant (NCPP)

Introduction

Muzindutsi & Associates Ltd has been requested to produce analysis and advice from different aspects of the Nyanza Cement Processing Plant (NCPP). The analysis was made on the following aspects: analysis of different capacity level of the company, preparation of operating statement and analysis of different variances, company's pricing strategies.

(d) Using data provided, comment on the direct labour hour rate when NCPP if it is to operate at 70% and 90% level of capacity.

Description		**Current level of activity**	
	70%	**80%**	**90%**
	FRW	**FRW**	**FRW**
Variable overhead			
Indirect labour	21,000,000	24,000,000	27,000,000
Stores	7,000,000	8,000,000	9,000,000
Semi Variable overhead			
Power (30% fixed)	15,000,000	15,000,000	15,000,000
Power (70% variable)	24,500,000	28,000,000	31,500,000
Repairs (40% variable)	1,400,000	1,600,000	1,800,000
Repairs (60% fixed)	3,000,000	3,000,000	3,000,000
Fixed overheads			
Depreciation	22,000,000	22,000,000	22,000,000
Insurance	6,000,000	6,000,000	6,000,000
Salaries	20,000,000	20,000,000	20,000,000
Total overheads	**119,900,000**	**127,600,000**	**135,300,000**
Number of direct labour hours	108,500	124,000	139,500
Direct labour hour rate	**1,105.07**	**1,029**	**970**

Comment: From the above calculations, it is clear that as NCPP increases the level of its operating capacity, the average direct labour rate is reducing from FRW1,105 per direct labour hour to FRW 970 per direct labour hour, this is due to the economies of scale which would be accrued from operating towards its full capacity. NCPP should ensure that it is operating to its full capacity for it to have the lowest average cost per unit resulting from the increased level of activity.

Tips:

- **Fixed costs:** *Total amount multiply with relevant fixed cost percentage*
- **Variable cost:** *Variable cost at 80% capacity multiply with 70% or 90% then divide with 80%*

(e) A marginal operating statement of NCPP fort the month of April 2024 and comment on each variance.

			Amount
Description			**FRW**
Budgeted contribution	(10,000*1700)		17,000,000
Sales volume contribution variance			6,020,000
			23,020,000
Sales price variance			(12,600,000)
			10,420,000
Variable cost variance	**Favorable**	**Adverse**	
	FRW	**FRW**	
Material price variance	1,600,000		
Material usage variance		2,400,000	
Labour rate variance		4,000,000	
Labour efficiency variance	1,200,000		
	2,800,000	**6,400,000**	**(3,600,000)**
Actual contribution			**6,820,000**
Budgeted fixed overhead			(2,800,000)
Fixed overhead expenditure variance			(2,100,000)
Actual Profit			**1,920,000**

Comment on variances:

1. **Sales variance:** The FRW 6,020,000 favorable sales volume variance may be attributable to the increased sales units which resulted from the reduction of competition in the market and the potential reduction in selling price. When price of a given item is reduced, the quantity sold will tend to increase**.** The FRW 12,600,000 adverse sales price variance is mainly attributable to the reduction of prices for NCPP to attract more sales.
2. **Material variance:** The FRW 1,600,000 favorable material price variance is attributable to the sourcing of raw material from China. As the company may be buying raw materials in bulk, it can enjoy the reduced prices compared to the local market prices. The FRW 2,400,000 adverse material usage variance is mainly attributable to the purchase of lower quality raw materials. Even if they are cheap, but they are of poor quality.

3. **Labour variance:** The FRW 4,000,000 adverse labour rate variance and the FRW 1,200,000 favorable material usage variance can be attributable to the expensive labour hired from competitor and the efficiency due to the experience from the hired employees respectively.

(f) Discuss circumstances under which NCPP can charge prices on its products below its marginal cost

In the following circumstances, NCPP could continue its production even if its current prices are far less than its marginal costs:

- **If NCPP has purchased large quantities of raw materials:** It will be a good strategy to sell raw materials or finished products at a price which is lower than the marginal costs when the company realize that the stock could deteriorate as a result of bulk purchases, this is also applied when products in a stock are approaching their expiration dates.
- **Temporary closure of a division or a business:** When the company, product or a division has been temporarily closed, this means that it loses its connection to customers and once it is reopened it will need heavy investment in marketing and advertisement, these heavy costs could not be covered by current selling prices.
- **Temporary closure of a division or a business:** When the company, product or a division has been temporarily closed, many of its experienced staff could be recruited by its rivals, once the business is reopened, it will take much time to train new employees and huge costs in recruiting the ones. These costs may lead to temporary losses as if all costs are captured in the selling prices, no customer could buy its products
- **Market penetration strategies:** Many startup companies like NCPP; to enter in a very competitive market, it has to reduce its selling prices in a short term for it to remain on the market. This is because the market is new and is not familiar with the company's products, so reduction of prices even below the marginal cost, could be one of strategies to win the customers' heart.

Conclusion

NCPP should ensure that the higher possible capacity level is used, this of course should commensurate with the level of demand to avoid wastage of stock. The company should also ensure that variances are investigated to know the real reasons of variances for them to avoid unnecessary losses.

SECTION B

QUESTION TWO

Marking Guide

Question	Sub-question	Description	Allocated Marks	Total Marks
2	**(a)**	Considering the view of the Chief Finance Officer, Evaluate the use of target costing as a new pricing strategy and advise KEC Ltd on how to close the potential target cost gap.		
		Awrad 0.5 Marks for a well explained target costing	0.5	8
		Award 0.5 Mark for the calculation of 20% margin. Max 1.5 Marks	1.5	
		Award 0.5 Mark for the calculation of calculated selling price. Max 1.5 Marks	1.5	
		Award 0.5 Mark for the calculation of calculated target cost gap. Max 1.5 Marks	1.5	
		Award 1 mark for each well explained way of closing target cost gap. Max 3 Marks	3	
	(b)	**Considering the request of the Chief Finance Officer, Advise KEC Ltd on the maximum price to be paid for the extra direct labour hour.**		
		Award 2 marks for calculation and identification of limiting factor. Max 2 Marks	2	12
		Award 1.5 Marks calculation of contribution per unit of limiting factor and 1,5 Marks for ranking the products	3	
		Award 1 for the well calculated and determination of production plan	1	
		Award 1 Mark for drawing up a budget statement and determination of profit	1	
		calculation of shadow price-Award 1 Mark for recalculation of production plan and 1 Mark for profit	2	
		Award 2 Marks for shadow price determination and 1 mark on what shadow price mean. Max 3 Marks	3	
	(c)	Support the statement made by the Chief Executive Officer and propose the mitigating strategies to avoid such poor behaviors of managers in budgeting processes		
		Award 1 Mark for each well explained way and mitigating strategies to avoid such poor behaviors of managers in budgeting processes. Max 5 Marks	5	5
		Total	**25**	**25**

Model Answer

a) **Considering the view of the Chief Finance Officer, Evaluate the use of target costing as a new pricing strategy and advise KEC Ltd on how to close the potential target cost gap**

Target costing involves setting a target cost by subtracting a desired profit margin from a competitive market price. The following table shows the target cost gap as calculated as the difference between the current cost and the target costs.

	Product X	**Product Y**	**Product Z**
	Amount	**Amount**	**Amount**
Direct material costs	**FRW**	**FRW**	**FRW**
Total costs	**853,000**	**921,800**	**1,040,000**
Target cost	750,000	750,000	750,000
Current selling price	1,000,000	1,000,000	1,000,000
Target cost gap	**103,000**	**171,800**	**290,000**

If KEC Ltd used its conventional method of product costing, it will overcharge its products which may lead to lack of its product competitive position in the market compared to its competitors. Therefore, the use of target costing will help the company to properly manage its costs and remain within its competitive boundaries. It is pretty clear that if target costing is not adopted the products over three years period prices will be far beyond the current market prices which may reduce revenues.

Over the period of three years, the company will experience the target cost gap of FRW 103,000, FRW 171,800 and FRW 290,000 for year 1,2 and 3 respectively. The following are the strategies that KEC will adopt to reduce these target cost gaps:

- Reducing the number of components during the production process
- Using cheaper staff
- Using standard components wherever possible
- Acquiring new, more efficient technology
- Training staff in more efficient techniques
- Cutting out non-value-added activities
- Using different materials (identified using activity analysis etc)

b) **Considering the request of the Chief Finance Officer, Advise KEC Ltd on the maximum price to be paid for the extra direct labour hour.**

The maximum price to be paid for the extra direct labour hour is the shadow price. This involves adding the extra unit of the limiting factor and assess the change in contribution or profit as a result of the added unit of the limiting factor. In this case, the examiner was clear that the direct labour hours are the limiting factor.

Step 1: ***Ascertain whether direct labour hours are a scarce resource***

Products	**Demand-Units (A)**	**Total labour costs (B)**	**Direct labour hour rate (C)**	**Labour hours per unit D=(B/C)**	**Required total hours E=(A*D)**
KECv1.1	24,000	60,000	7,200	8.33	199,920
KECv2.2	12,000	120,000	7,200	16.67	200,040
KECv3.1	60,000	15,000	7,200	2.08	124,800
Total	**96,000**	**195,000**			**524,760**
Available hours					420,000
Difference					**104,760**

The required direct labour hours to produce 96,000 units are 630,000 hours yet the available hours are 420,000. There is a gap of 104,760 direct labour hours which shows that the direct labour hours are the limiting factor/scarce resource.

Step 2: ***Rank the products***

Since only 420,000 direct labour hours are available, we need to establish which product earns the greatest contribution per unit of a limiting factor which is the direct labour hour.

	KECv1.1	**KECv2.2**	**KECv3.1**
	FRW'000	**FRW'000**	**FRW'000**
Selling price	250	310	80
Variable costs			
Material	65	18	20
Labour	60	120	15
Overheads	25	13	15
Total costs	**150**	**150**	**50**
Contribution per unit	100	160	30
Direct labour hours per unit	8.33	16.67	2.08
Contribution per direct labour hour	12	9.54	14.42
Ranking	**Second**	**Third**	**First**

Step 3: ***Determine a production plan***

The optimum production plan must take into account the requirement that 10,000 units of each product are produced, and then allocate the remaining hours according to the above ranking

Products	**Contract quantity**	**Direct labour hours per unit**	**Total labour hours**
KECv1.1	7,000	8.33	58,310
KECv2.2	5,000	16.67	83,350
KECv3.1	4,000	2.08	8,320
Total hours			**149,980**
Total available hours			**420,000**
Balance			**270,020**
	Production-Units	**Direct labour hours per unit**	**Total labour hours**
KECv3.1	56,000	2.08	116,480
KECv1.1	7,000	8.33	58,310
KECv2.2	5,713	16.67	95,230
Total labour hours			**270,020**

Step 4: ***Draw up a budget statement***

Details	**KECv1.1**	**KECv2.2**	**KECv3.1**	**Total-FRW**
	FRW'000	**FRW'000**	**FRW'000**	
Contribution per unit	100	160	30	
Production-Units	14,000	5,000	60,000	
Total contribution	1,400,000	800,000	1,800,000	4,000,000
Fixed costs				1,600,000
Profit				**2,400,000**

Step 5: ***Calculation of shadow price***

The shadow price will be given by the additional profit or contribution which may be realized by KEC Ltd as a result of adding the extra unit of limiting factor (from the 420,000 labour hours available to 420,001 labour hours). This means that production of all items will remain unchanged except the production of KECv1.1 which will change from 14,000 units to 14,000.1 units, this will change the total profit from FRW 2,400,000 to 2,400,010. The difference of FRW 10 is the shadow price. This means that KEC Ltd is not allowed to pay more than FRW 10 above the normal price for each and every extra one unit of direct labour hour.

Therefore, step 3 and 4 should be reworked as below:

Products	Contract quantity	Direct labour hours per unit	Total labour hours
KECv1.1	7,000	8.33	70,000
KECv2.2	5,000	16.67	100,000
KECv3.1	4,000	2.08	12,000
Total hours			**182,000**
Total available hours			420,000
Balance			**238,000**
	Production-Units	**Direct labour hours per unit**	**Total labour hours**
KECv3.1	56,000	2.08	116,480
KECv1.1	7,001	8.33	58,311
KECv2.2	3791	16.67	63,209
Total labour hours			**420,001**

Details	KECv1.1	KECv2.2	KECv3.1	Total-FRW
	FRW'000	**FRW'000**	**FRW'000**	
Contribution per unit	100	159	30	
Production-Units	14,001	5,000	60,000	
Total contribution	1,400,100	755,000	1,800,000	3,955,100
Fixed costs				1,600,000
Profit				**2,355,100**
Initial profit				2,400,000
Shadow price				**44,900**

c) **Support the statement made by the Chief Executive Officer and propose the mitigating strategies to avoid such poor behaviors of managers in budgeting processes**

The Chief Executive Officer is right, the attitude of managers towards the accounting control information they receive might reduce the information's effectiveness in the following manner

- Management accounting control reports could well be seen as having a relatively low priority in the list of management tasks. Managers might take the view that they have more pressing jobs on hand than looking at routine control reports.
- Managers might resent control information; they may see it as part of a system of trying to find fault with their work. This resentment is likely to be particularly strong when budgets or standards are imposed on managers without allowing them to participate in the budget-setting process.
- If budgets are seen as pressure devices to push managers into doing better, control reports will be resented.
- Managers may not understand the information in the control reports, because they are unfamiliar with accounting terminology or principles.

- Managers might have a false sense of what their objectives should be. A production manager might consider it more important to maintain quality standards regardless of cost. He would then dismiss adverse expenditure variances as inevitable and unavoidable.
- If there are flaws in the system of recording actual costs, managers will dismiss control information as unreliable.
- Control information might be received weeks after the end of the period to which it relates, in which case managers might regard it as out-of-date and no longer useful.
- Managers might be held responsible for variances outside their control.

It is therefore obvious that accountants and senior management should try to implement systems that are acceptable to budget holders and which produce positive effects.

QUESTION THREE

Question	Sub Question	Mark per point	Total
	A		
2	**(i)**	Award 1 Mark for calculating fees per female client. Max 1 Mark	1
		Award 0.5 Mark for calculating total sales revenues. Max 0.5 Mark	0.5
		Award 1.5 Mark for calculating staff salaries. Max 1.5 Mark	1.5
		Award 1 Mark for calculating gross profits. Max 1.5 Mark	1
		Award 1 Mark for each calculating profit per male and female client. Max 2 Mark	2
	(ii)	A discussion of any factors below Max of 4	
		Award 1 Mark for mention of quality of service. Max 1 Mark	1
		Award 1 Mark for mention of removal of inefficiencies. Max 1 Mark	1
		Award 1 Mark for mention of building a niche and clientele. Max 1 Mark	1
		Award 1 Mark for mention of training improvement of skills of employees. Max 1 Mark	1
		Any other factors, see answer detail	

	(iii)	Award 1 mark for a well discussion of Simulation, Max of 2.5	2.5
		Award 1 mark for a well discussion of Adjusted payback period. Max of 2.5	2.5
		Award 1 mark for a well discussion of Risk adjusted discount rate. Max of 2.6	
		(any two a maximum of 5)	
	C		
	(i)	Award 0.5 marks for calculating material cost, Max of 0.5	0.5
		Award 0.5 marks for calculating labour cost, Max of 0.5	0.5
		Award 1 marks for calculating Heat and power cost, Max of 1	1
		Award 1 marks for calculating Machine fixed cost, Max of 1	1
		Award 1 marks for calculating Machine variable cost, Max of 1	1
		Award 1 marks for calculating Depreciation and insurance. Max of 1	1
		Award 1 marks for calculating Total annual production cost. Max of 1	1
	(ii)	Any relevant factors mentioned below maximum of 4 Marks	
		Award 1 marks for mention of spare capacity. Max of 1	1
		Award 1 marks for mention of quality. Max of 1	1
		Award 1 marks for mention of reliability. Max of 1	1
		Award 1 marks for mention of effect on employees. Max of 1	1
		Total	**25**

Required (i) Calculator profit per male and female client

Product			**Female**		**Male**	**Total**
Number of clients			6,720		4,480	11,200
Cost per client			120		100	220
Total revenues			**806,400**		**448,000**	**1,254,400**
	Female	cost		Male		
Staff salaries	4	26,400	105,600		28,200	133,800
Shop assistants			11,000		11,000	22,000
Hair products			140,000		42,800	182,800
Total cost			**256,600**		**82,000**	**338,600**
Gross profits			549,800		366,000	915,800
Number of clients			6,720		4,480	
Profit per client			82		82	

Workings on staff salaries

Staff cost	**FRW**
Shop assistant	22,000,000
Female hairdressers @26,400	105,600,000
Male hair dresser (the balance)	28,200,000
Total	155,800,000
Fees per female client	
Total revenue	1,254,400
Male	
Fees per female client	
Total revenue	1,254,400

Male fee per client (RWF100 x 4,480)	448,000
Balance is female fees	806,400
Divided by the number of female clients 6,720	120

(ii) Other than increment in fees charges, discuss other factors Otienomana into account in improving profitability

1. Identify and eliminate inefficiencies in service delivery, such as redundant steps or bottlenecks.
2. Provide excellent service that exceeds customer expectations to encourage repeat business and positive word-of-mouth.
3. Implement strategies to retain existing customers, as it's generally more cost-effective than acquiring new ones.
4. Invest in continuous training for employees to improve their skills and productivity.
5. Implement performance-based incentives to motivate staff and improve service delivery.
6. Use technology to automate routine tasks, freeing up human resources for more complex or customer-facing activities.
7. Utilize data analytics to gain insights into customer preferences, operational inefficiencies, and cost-saving opportunities
8. Focus on specific market segments where you can deliver exceptional value.
9. Regularly gather feedback from customers and employees to identify areas for improvement.
10. By focusing on these factors, service industry businesses can enhance their profitability while maintaining or improving service quality and customer satisfaction levels.

B Discuss any TWO of the above methods of adjusting for risk and uncertainty in investment (5 Marks)

(1) **Simulation**

Simulation is a computer-based technique used to assess an investment project. It involves incorporating the probability distributions of project variables and their interdependencies.

To execute a simulation, random numbers are allocated to various values within each project variable's distribution. In each simulation iteration, random values for project variables are chosen, and the Net Present Value (NPV) is computed.

By running multiple simulations, a probability distribution of the mean NPV emerges. This distribution provides insights into project risk, including the standard deviation of expected returns, the most probable outcome, and the likelihood of encountering a negative NPV

(2) **Adjusted/Discounted payback**

If risk and uncertainty are equated, the payback period can serve to accommodate these factors in investment evaluation.

When uncertainty (risk) rises, the payback period can be reduced to prioritize cash flows that are closer to the present and hence perceived as less uncertain. Conversely, when uncertainty (risk) decreases, the payback period can be extended to diminish the emphasis on cash flows that are immediate.
Discounted payback adjusts for risk in investment appraisal by incorporating the discount rate, which reflects risk. Therefore, discounted payback can be viewed as a modified payback method that considers risk.

(3) **Risk-adjusted discount rates**

The risk associated with an investment project can be integrated into the discount rate by incorporating a risk premium above the risk-free rate of return.

This risk premium can be established subjectively. For instance, launching a new product is generally considered riskier than replacing an existing machine or undertaking a modest expansion of current operations.

Alternatively, the risk premium can be determined theoretically through the capital asset pricing model in the context of investment appraisal. This involves deriving a project-specific equity beta from a proxy company's ungeared equity beta, adjusting it to reflect the financial risk of the investing company. This project-specific equity beta is then utilized to compute a project-specific cost of equity or discount rate.

C (i)Advise NIS whether it should outsource 'motherboard' and produce 'sensor' in-house
(5 Marks)

	Motherboard	**Sensor**
Production-units	120,000	120,000
FRW'000	Relevant cost	Relevant cost
Direct materials up by 20%	216,000	144,000
Direct labour	66,000	105,600
Heat and power costs	61,900	65,040
Machine costs Fixed	8,000	15,000
Variable	30,000	30,000
Depreciation and insurance costs	29,160	33,300
Total annual production costs	411,060	392,940
cost of buying from outside	410,000	430,000

Workings

Labour motherboard (180,000 x 1.20)	216,000
Direct labour (60,000 x 1.1)	66,000
Heat and power (85,000 - (66,000 x 35%)	61,900
Machine fixed costs Specific	8,000
Variable overheads at FRW 0.25 per unit (120,000 x 0.25)	30,000
Depreciation and insurance (97,200 x 30%)	29,160

(ii) Discuss the any other two factors that should be taken into account before a decision to buy from outside is taken (3 Marks)

Further considerations

- If units of motherboard were sub-contracted, the company will have spare capacity. How should that spare capacity be profitably used?
- Are there hidden benefits to be obtained from sub-contracting?
- Would the company's workforce resent the loss of work to an outside sub-contractor, and might such a decision cause an industrial dispute?
- Would the sub-contractor be reliable with delivery times, and would he supply components of the same quality as those manufactured internally?
- Does the company wish to be flexible and maintain better control over operations by making everything itself?
- Are the estimates of fixed cost savings reliable?

QUESTION FOUR

Question	**Sub Question**	**Mark per point**	**Total**
	A		
4	(i)	Award 1 Mark for determining selling price. Max 1 Mark	1
		Award 1 Mark for determination of maximum regret under each price. Max 1 Mark	1
		Award 1 Mark for explanation of how to calculate a regret. Max 1 Mark	1
		Award 1 Mark for choosing the correct selling price, Max 1 Mark	1

Question	Sub Question	Mark per point	Total
		Award 1 Mark for explaining how the processes woks. Max 1 Mark	1
	B	Award 1 Mark for identifying the LCC sums up all costs. Max 1 Mark	1
		Award 1 Mark for identifying significant cost at development stage. Max 1 Mark	1
		Award 1 Mark for identifying sunk and opportunity cost treatment. Max 2 Mark	2
	C		
	(i)	Award 1 Mark for calculating sales revenues. Max 1 Mark	1
		Award 1 Mark for calculating contribution. Max 1 Mark	1
		Award 1 Mark for calculating fixed costs. Max 1 Mark	1
		Award 1.5 Marks for treatment of R&D sunk cost. Max 1.5 Mark	1.5
		Award 1 Marks for calculating total profits for the year. Max 1 Mark	1
		Award 1.5 Marks for calculating total profit per unit. Max 1.5 Mark	1.5
	(ii)	Award 1 Marks for calculating Material cost. Max 1 Mark	1
		Award 1 Marks for calculating Labour cost. Max 1Mark	1
		Award 1 Mark each for calculation variable and fixed overhead cost. Max 2Mark	2
		Award 1 Mark for calculating cost at 30% mark up. Max 1 Mark	1
		Award 1 Mark for calculating cost at 20% margin up. Max 1 Mark	1
	(iii)	Good discussion a max of 3 of point below	
		Award 1 Mark for mention that all cost is covered. Max 1 Mark	1
		Award 1 Mark for mention possible manipulation. Max 1 Mark	1

Question	Sub Question	Mark per point	Total
		Award 1 Mark for mention poor decision making. Max 1 Mark	1
		Total	25

(a) Determine the selling price strategy which will apply where minimax regret is used as the decision base and explain the operation of minimax regret analysis. (5 Marks)

Regret table/opportunity loss table.

	FRW	**FRW**	**FRW**
	480	620	880
High	127,000	876,000	0
Medium	507,000	1,020,000	0
Low	1,507,000	994,000	0
Maximum regret	1,507,000	1,020,000	0

The minimax regret technique requires the choice of the strategy which will minimize the regret from making the wrong decision.
Steps
1. For each state of nature identify the largest payoff and then subtract each other payoff from that state.
2. Identify the maximum regret from each decision alternative/price.
3. Select the alternative with the minimum of the maximum listed regret,

The minimum regret strategy is a selling price of RWF880 where the regret is RWF 0.
In this way the regret from making the 'wrong' decision on selling price is minimized.

Q4b
b(i) Explain the principles behind lifecycle costing and briefly state why Nyanza in particular should consider these lifecycle principles.

(a) Lifecycle costing is a concept which traces all costs to a product over its complete lifecycle, from design through to cessation.
It recognizes that for many products there are significant costs to be incurred in the early stages of its lifecycle. This is probably very true for Nyanza Plc. The design and development of the Talking Bag may have been long and complicated process and it is likely that the costs involved would be very significant.

The profitability of a product can then be assessed taking all costs into consideration.
It is also likely that adopting lifecycle costing would improve decision-making and cost control.

The early development costs would have to be seen in the context of the expected trading results, therefore preventing a serious over spend at this stage or underpricing at the launch point.

b(ii) Produce the budgeted results for the 'talking Bag' (7 Marks)

Year	**0**	**1**	**2**	**3**	**Total**
Volume, /Units		14,000	17,000	7,500	38,500
Sales rev@ FRW 65,000		910,000,000	1,105,000,000	487,500,000	2,502,500,000
Contribution 80%		728,000,000	884,000,000	390,000,000	2,002,000,000
Less fixed costs		(80,000,000)	(120,000,000)	(80,000,000)	(280,000,000)
Research and development	(56,000,000)				(56,000,000)
Profits or loss	(56,000,000)	648,000,000	764,000,000	310,000,000	1,666,000,000
Profit per bag =Total profits /Total number of bags sold					43,273

Question 4c

(i) Calculate the price that the assembly division would charge for the SDC under the existing policy of variable cost plus 30%. (3 Marks)

(ii) Calculate the increase or decrease in price if the pricing policy switched to total cost plus 20%. (2 Marks)

Variable	**Amounts- FRW**
Material	250,000
Labour	300,000
Variable overhead @ FRW 80,000 per hour	560,000
Total variable cost	1,110,000
Fixed overhead 25K per hour	175,000
Full cost	1,285,000

Total cost	
Transfer price at MC plus 30%	**1,443,000**
Transfer price at 20% of total cost	**1,542,000**
Increase	**99,000**

(iii) Discuss whether or not including fixed costs in a transfer price is a sensible policy.

(4 Marks)

All cost covered, profitability

For the assembly division (supplying division), including fixed costs in the transfer price will have the advantage of covering all the costs incurred. In theory this should guarantee a profit for the division (assuming the fixed overhead absorption calculations are accurate).

In essence the manufacturer is reducing the risk in his division.

Manipulation

The accounting for fixed costs is notoriously difficult with many approaches possible. Including fixed costs in the transfer price invites manipulation of overhead treatment.

Poor decision making for the group

One of the main problems with this strategy is that a fixed cost of the business is being turned into a variable cost in the hands of the seller (in our case the stores). This can lead to poor decision-making for the group since, although fixed costs would normally be ignored in a decision (as unavoidable), they would be relevant to the seller because they are part of their variable buy in price.

End of Answer and Marking Guide.