

**Report to directing manager Zaina Hills of Interfirm Konsult Limited (IKL) on most appropriate pricing method and price to use for next year's budget.**

**EXECUTIVE SUMMARY**

-The cost plus 25% price is calculated at \$568.75 per hour.

-Advantages of Cost plus pricing are fair and plausible prices to be found quickly, Efficient use of management and easily and prices can be justified

-Based on budgeted output of 120,000 labour hours sold, the rate of return price, for a desired ROCE of 15% (and hence a \$8,250,000 profit), is calculated at \$523.75 per hour.

-Advantages of rate of return pricing ensure that the firm's capital employed and the need for an adequate return for shareholders are considered and The required return can be adjusted for current market rates of return - (ensures more competitive)

-The market based profit maximising price, based on the market research, is \$520 per hour

- It is recommended to the board that the market based price of \$520 is used for the coming year - it yields a ROCE of 2.07% however this is a justified outcome given COVID-19 creating a competitive market

-Cost plus pricing and returning pricing methods are calculated based on assumed volumes and largely ignore demand. The main advantage of market based price is that it specifically takes demand side issues into account as well as costs to determine the most profitable price

-IKL is in a 'competitive market' given COVID-19 therefore it is important for the company to take demand issues into account as they are at risk of being undercut by competitors. As a result the use of full cost based pricing may be ineffective as it could result in prices that are too high which may therefore trigger a death spiral.

**MAIN REPORT**

**a) Calculate the price per hour of consulting services if IKL continues to price its services at full cost plus 25% AND outline Three advantages of the cost-plus pricing method**

The price per hour of contract labour hour if IKL continues to price at full cost plus 25% is calculated as follows:

Variable cost	\$400
Fixed costs (\$6,600,000 [fixed cost] ÷ 120,000 [expected hours])	55
Full cost per hour	455
25% mark up	113.75
Cost plus 25% price	568.75

The advantages of this cost plus pricing method:

- Price is plausible and can be quickly and easily calculated
- Allows for IKL to justify their price and is useful when negotiating open book contract with consultancy clients

- Cost plus pricing can be used as a base price - this allows IKL to then amend to market effects and considerations
- Efficient use of management (Pareto) might be to use Cost Plus for the 80% of products that only generate 20% of sales (and only use the more expensive market based pricing for the other 20% of products that generate 80% of sales)

**b) Calculate the price per hour of consulting services if IKL takes Folau Kaleb's advice and moves to rate of return pricing AND state two advantages of this method compared to IKL's current cost-plus method of pricing.**

The rate of return price is calculated as follows:

Required return(15% x \$55,000,000 [total capital employed])	8250000
Required profit per hour (8250000[required return]/120000[expected hours])	68.75
Full cost per hour (as above)	455
Rate of return price	523.75

The advantages of the rate of return method (compared to the full cost plus 25% method):

- Takes into account the IKL's capital employed and the need to make a sufficient return on capital; meets shareholder needs
- Provides a way of deciding on the appropriate % mark up to be applied in full cost plus pricing (to achieve target return on capital).
- The required return can be adjusted for current market rates of return this means that rate of return pricing may partially take competitive pressures into account.

**c) Calculate the price per hour of consulting services if IKL takes Rachel North's advice and uses the predicted demand to set a price that maximises profits AND calculate the expected profit and ROCE that this price will yield if demand predictions prove to be reliable.**

Market-based pricing – Using the predicted demand (as recommended by Sue Sawyer), the price that maximises profits is calculated as follows:

Contributions for different prices and demand expectation:

Price per Hour (1)	Variable cost per hour (2)	Contribution per hour (3)=(1)-(2)	Demand in hours (4)	Total contribution (5)=(3)*(4)
510	400	110	160000	17600000
520	400	120	150000	18000000
530	400	130	130000	16900000
540	400	140	100000	14000000
550	400	150	85000	12750000

Fixed costs are irrelevant as they will remain the same regardless of the demand.

As a result the maximisation of contribution leads to profit maximisation.

From the table the profit maximising price is \$520 per hour (highest Total contribution of \$18000000)

The expected profit and ROCE that this price (if demand predictions prove to be reliable) are calculated as follows (if demand predictions are accurate):

price of \$520 will maximise contribution at:	\$18,000,000
Fixed costs will not change and are budgeted at:	<u>\$6,600,000</u>
Expected profit will therefore be (total contribution-total fixed cost)	= \$1,140,000

ROCE (Expected profit/total capital employed)=2.07% ((1,140,000/55,000,000)\*100 )

**d) Discuss the benefits and limitations of the pricing method used in (c) compared to the other methods used in (a) and (b) above.**

The advantages of this market-based pricing method (compared to the cost plus methods used in and b) include:

Neither the cost-plus 25% method to pricing in (a) nor the rate of return method in (b) take any account of the effect of prices on market demand. This poses a high risk as IKL is in a competitive market (due to COVID-19) which may mean that if IKL sets price over market demand they are likely to be undercut by competitors resulting in the volume of hours sold decreasing.

The market-based pricing approach is balanced as it considers both demand/market considerations and supply or cost factors – Hence it considers: costs, customers and competitors.

Market-based pricing ignores fixed costs and hence prices do not depend on arbitrary allocation methods and therefore are not effected by spare capacity. Because market-based pricing disregards fixed costs this avoids triggering the death spiral (lower demand leads to higher OAR (fixed costs per labour hour), and hence higher prices which cause still lower demand [cycle repeats])

The disadvantages of this market-based pricing method (compared to the cost plus methods above) include:

It may be difficult and expensive to obtain reliable market demand predictions - especially due to COVID-19 where there is a lack of economic stability as a result the expected demand may vary as economic circumstances continue to change

Market based pricing is a more time consuming and expensive pricing approach. Therefore, it is best used for the 20% of products that generate 80% of sales however its use is justified as selling contract labour hours is IKL's core business and generates 100% of sales

Using a contribution approach and ignoring fixed costs could pose a risk as it has the potential to lead to inappropriate prices that result in either - insufficient contribution to the fixed costs that must be covered to make a return (resulting in IKL making a loss) or contributions being too high and reduce quantity demanded.

**d) Recommend appropriate steps that the General Manager, Zaina Hills, needs to consider with respect to the most appropriate price to use for the coming year and provide FIVE reasons for recommending this price. In making your recommendations highlight the current impact of COVID-19 on your suggested options**

On the assumption that the market research is reliable, the cost-plus pricing of \$568.75 per hour appears to be too high and could trigger the death spiral this is because demand for each consultancy hour priced higher than \$550 is 85000 hours - this is significantly lower than the expected 120000 hours. Because IKL overheads are allocated on the basis of labour hours the reduce demand will result in higher full cost per hour - resulting in demand further decreasing (death spiral)

In the current economic position caused by COVID-19 it is likely that the expectations for a 15% return is slightly optimistic however it is significantly lower (\$523.75) when compared to price of the cost-plus pricing method (\$568.75). This may still be too high for the current market where competitors are willing to undercut this price.

Hence a price of \$520 per hour appears more appropriate and should be charged for the coming year. Although this predicts a return of 2.07% is significantly lower than IKL ROCE target of 15% due to the current economic effect caused by COVID-19 and the competitive market this has created - this is likely to be the best return achievable.

**Full supporting reasons for using a market-based price of \$520:**

- market based pricing considers both variable cost and market demand; this is very important given the effect of COVID-19 generating a fiercely competitive market as it ensures that IKL do not set their prices too high (ensures IKL can compete in market)
- market based pricing Ignores fixed costs and hence prices do not depend on arbitrary allocation methods and are not distorted by the existence of spare capacity.
- market based pricing will able IKL to compete in the market - due to COVID-19 any price above market demand and supply equilibrium will be undercut if IKL cannot meet this price then clients are likely to turn to competitors
- using cost plus pricing is inadequate as it does not take market demand into account. It is especially dangerous when output is fallings it can trigger the death spiral - with COVID-19 IKL is likely to continue to face decreasing demand in hours, not only due to a lower demand for consultancy but by competitive pricing of competitors
- rate of return pricing ignores the economic effect of market demand this can trigger - with COVID-19 IKL is likely to continue to face decreasing demand in hours, not only due to a lower demand for consultancy but by competitive pricing of competitors

Report to the Managing Director Emma Tai of **Tai Essence Ltd (TEL)** on the firm's performance for **Quarter ended 30 June**

**Executive Summary**

- As TEL sold 50 more Shampoos than expected, there is a \$1250 favourable volume variance. However, a price cut (adverse price variance of \$5640) was needed to halt falling market share due to competition and new machinery and net adverse cost variances amounted to \$3,890.
- There was many significant adverse variance which require investigation
- Recommendations to improve TEL's performance include:
  - o Some targeted market research to assess customer satisfaction and to facilitate more accurate demand forecasts.
  - o Matching staffing levels with market demand.
  - o Supplier choice and materials quality need to be reviewed. Suppliers and the ingredients they offer should be assessed on the basis of cost of ownership (not just purchase price).

**Main report**

**a) Using the summary figures, an operating statement, in columnar format, that compares:**

- i. The original budget,
- ii. A flexed budget,
- iii. The actual results.

	Original budget		Flexed budget		Actual results
NO of cases	500		550		550
	\$		\$		\$
Sales(1)	60000		66000	-Sales price-	65450
Variable Cost (2)	-47500		-52250	-Variable cost-	-57340
Contributions	12500	-Sales volume-	13750		8110
Fixed overheads	-7000		-7000	-Fixed cost-	-6500
Net profit	5500		6750		1610

(1) Sales = No. \* (O sales / O NO) = 550 \* (60000 / 500)

(2) V.C = Variable cost per pie \* No of pie = 550 \* -95

**b) A calculation of the overall variances (sales volume/activity, sales price/revenue, total variable cost and total fixed costs) AND a brief comment on what these overall variances disclose about the performance of Tai Essence Ltd for the quarter**

Summary Variances:

	Adverse \$	Favourable \$
Sales Volume(SV)		1250
Sales Price(SP)	550	
Variable cost	5090	

Fixed cost		500
Totals	5640	1750

There is a favourable volume variance due to selling 50 more cases than anticipated, and the flexed budget highlights that this extra volume should have increase the overall profit by \$1250 (50 x (\$120-\$95) ) to \$13,750 given all costs were in line with standards).

The adverse variance for sales price is a \$550 - TEL indicated that they offered discounts to its wholesalers as a result it is likely that the increased sales were 'bought' with a price cut which have resulted in this adverse variance.

Variable costs exceeded flexed budget by \$5090, TEL indicated that there was a increase price of direct materials, as direct materials are a component of variable cost it is likely that the adverse variance is caused by this increase

Total fixed costs yield a \$500 favourable variance it is unclear where this cost was deducted from but it may be due to the new machinery mitigating fixed cost associated with the old machinery

**c) A calculation of detailed variable cost variances, including:**

- i. Materials price and usage variances for ingredients.
- ii. Materials price and usage variances for bottles.
- iii. Labour rate and efficiency variances.
- iv. Variable overhead expenditure and efficiency variances.

Detailed variable cost variances are calculated as follows:

**Material ingredients**

Actual Quantity*Actual Price		Actual Quantity*Standard Price		Flex no.*Standard quantity*Standard litre* Standard price
1150*16		1150*15		550*2*15
18400	1150	17250	750	16500
	\$1150 adverse ingredient price		\$750 adverse ingredient usage	

**Material bottles**

Actual Quantity*Actual Price		Actual Quantity*Standard Price		Flex no.*Standard quantity*Standard bottle* Standard price
5600*0.45		5600*0.5		550*10*0.5
2520	-280	2800	50	2750
	\$280 favourable price variance		\$50 favourable material usage	

**Labour**

Actual hours*Actual rate		Actual hour*Standard rate		Flex no.*Standard hour* Standard rate
1680*19		1680*18		550*3*18
31920	1680	30240	540	29700
	\$1680 adverse labour rate		\$540 adverse labour efficiency	

### Variable overhead

Actual hours*Actual rate		Actual hour*Standard rate		Flex no.*Standard hour* Standard rate
		1680*2		550*3*2
4500	1140	3360	60	3300
	\$1140 adverse overhead rate		60 adverse overhead efficiency	

d) **An explanation of the principle of management by exception and suggestions as to how Emma should apply this principle to investigate the above variances.**

Applying management by exception **Emma Tai** should set 'control limits' - only investigating variance which fall outside the appropriate limits as these variance indicates abnormalities; this ensures resource maximisation as over investigating results in unnecessary cost.

Control limits may be set by a certain figure (e.g Emma Tai may set this to \$200) or as a percentage of budgeted profit or a percentage of the specific cost or revenue under consideration (e.g 5% of budgeted profit or (say) 5% of the specific item's standard cost or revenue)

**d) Plausible explanations for those cost variances (at least FOUR) that you consider should be investigated by Emma AND your final recommendations to Emma on the appropriate actions required to improve the future financial performance of Tai Essence Ltd.**

Emma Tai is advised to investigate all variable cost variances in excess of \$275 (5% of budgeted profit)

There was a \$750 of adverse usage variance on Ingredients.

Employees may be using more ingredients than necessary in a bottle of Tai Herbal Shampoo (more than 200ml) is concerning as it is generating excess cost - if this is not the case it may be due to the set-up problem which yielded unsatisfactory products which could not be sold.

*It is advised that TEL monitor their staff when they are bottling shampoo on the production line - otherwise TEL should take measures to ensure that the operational set-up problem does not occur again.*

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The adverse labour rate variance of \$1,680 is most likely due to higher skilled labour that was used in an effort to increase the quality of shampoo and the overtime that was increased to meet last-minute 'rush' orders from customers

*Better market research is needed so that increases in demand are predicted and staffing levels are appropriate (this avoiding excessive overtime and overtime premiums).*

The adverse labour efficiency variance of \$540 is due to pie bakers taking 130 hours more than standard to make the 550 cases. This may be due to the 'in new machinery which has changed the nature of the manufacturing process significantly\* and/or due to tiredness caused by excessive overtime.

*Review the use of the new machinery, unless employees can be trained to use it efficiently it may be more beneficial to return to the old system. Ensure TEL is fully staffed to avoid excessive overtime and resultant tiredness and inefficiency.*

### **Recommended management actions**

Although the profit for the period was \$55140 this is disappointing result given the favourable sales volume variance of \$1250. Competitor reaction to the discount needs to be monitored carefully - as competitors may undercut TEL offering a lower discount.

The use of new machinery needs to be reviewed. The favourable price variance is far outweighed by adverse materials usage and labour efficiency effects.

Unless better training can solve the problems when using the new machine it may be worthwhile to return to the old manufacturing system.

When considering supplier choice, TEL should consider the whole 'cost of ownership' not just the purchase price - however if TEL can source materials at the same quality in NZ they should consider purchasing domestically

Having the right number of staff in place to meet the growing demand would have reduced some adverse variances (labour rate and efficiency variances and possibly also materials usage variances).

The unexpected demand increase and the need for excessive overtime) may have undermined the effectiveness of the new machinery process.