

Written Exam for the B.Sc. or M.Sc. in Economics summer 2017

**Managerial Accounting**

Guiding Solutions

16. June 2017

(3-hour open/closed book exam)

## Exercise 1:

### Question 1

In general there are not many strengths in the format that the company are using right now. Some students may find that the segmentation is strengths. However there are several weaknesses that could be addressed to the company's format:

- The company should include a column showing the combined results of the three regions taken together.
- Additional columns showing percentages would be helpful in assessing performance and pinpointing areas that needs attention.
- The regional expenses should be separated into variable and fixed categories to permit the computation of both a contribution margin and a regional segment margin
- The corporate expenses are probably common to the regions and should not be arbitrarily allocated.

### Question 2

The corporate advertising has been allocated on the basis of sales in EUR. It is unclear how the general administrative expenses have been allocated to the three regions. However one should identify to what extent they have been allocated arbitrarily. This should not be made under the contribution approach, since they can be misleading to management and tend to call attention away from the segment margin. It is the segment margin that should be used in measuring the performance of a segment, not the 'profit' or 'loss' after allocating common expenses.

### Question 3

See the statement below.

### Question 4

The following points should be brought to the attention of management:

- Sales in the North are much lower than in the other two regions. This is not due to lack of salespeople since salaries in the West are about the same as in the South.
- The North is spending about half as much for advertising as South and West. It might be a major reason for the lower sales.
- The West apparently is selling a large amount of low-margin items. Note that it has a contribution margin ratio of only 46%, as compared to 60% or more for the other two regions.
- The North and West seem to be overstaffed. Its salaries are much higher than in South.
- The West is not covering its own traceable costs. Major attention should be given to improving the sales mix and reducing expenses in this region. Apparently, the salespeople in all three regions are on a salary basis. Perhaps a change to a commission basis would encourage the sales staff to be more aggressive and improve sales throughout the company.
- The students may come up with other arguments that should be taken into account.

	Sales region							
	Total Company		North	South		West		
	Amount		Amount	Amount	Amount, EUR			
<b>Sales</b>	6,750,000	100.0%	1,350,000	100.0%	2,400,000	100.0%	3,000,000	100.0%
Less variable expenses:								
Cost of goods sold	2,835,200	41.0	488,700	36.2	840,000	35.0	1,506,500	50.2
Shipping expense	261,300	3.9	51,300	3.8	96,000	4.0	114,000	3.8
Total variable expenses	3,096,500	44.9	540,000	40.0	936,000	39.0	1,620,500	54.0
<b>Contribution margin</b>	3,653,500	55.2	810,000	60.0	1,464,000	61.0	1,379,500	46.0
Less traceable fixed expenses:								
Advertising	1,744,000	25.8	324,000	24.0	600,000	25.0	820,000	27.3
Salaries	1,074,000	15.9	270,000	20.0	264,000	11.0	540,000	18.0
Utilities	136,500	2.0	40,500	3.0	36,000	1.5	60,000	2.0
Depreciation	285,000	4.3	81,000	6.0	84,000	3.5	120,000	4.0
Total traceable fixed expenses	3,239,500	48.0	715,500	53.0	984,000	41.0	1,540,000	51.3
<b>Regional segment margin</b>	294,000	7.3	94,500	7.0%	480,000	20.0%	(160.500)	(5.4)
Less common fixed expenses not traceable to the regions:								
Advertising (general)	270,000	4.0						
General admin. expenses	500,000	7.5						
Total common fixed expenses	770,000	11.5						
<b>Operating loss/profit</b>	(356,000)	(5.8)%						

## **Exercise 2**

### **Question 1**

	<b>Amanda</b>	<b>Claudia</b>	<b>Ida</b>	<b>Siv</b>	<b>Tanja</b>
Direct labour cost per unit	64.00	40.00	112.00	80.00	32.00
Direct labour hrs. per unit x 160 labour rate	0.4 hrs.	0.25 hrs.	0.7 hrs.	0.5 hrs.	0.2 hrs.
Selling price	270.00	110.00	420.00	200.00	160.00
Less variable costs:					
Direct materials	86.00	22.00	128.80	40.00	64.00
Direct labour	64.00	40.00	112.00	80.00	32.00
Variable overhead	16.00	10.00	28.00	20.00	8.00
Total variable costs	166.00	72.00	268.80	140.00	104.00
(b) Contribution margin	104.00	38.00	151.20	60.00	56.00
Contribution margin per DLH (b) (a)	260.00	152.00	216.00	120.00	280.00

### **Question 2**

<b>Product</b>	<b>DLH Per Unit</b>		<b>Estimated Sales (units)</b>	<b>Total Hours</b>
Amanda	0.4 hrs.		10,000	4,000
Claudia	0.25 hrs.		8,400	2,100
Ida	0.7 hrs.		7,000	4,900
Siv	0.5 hrs.		8,000	4,000
Tanja	0.2 hrs.		65,000	13,000
Total hours required				28,000

### **Question 3**

Since Siv provides the lowest contribution margin per labour hour, its production should be reduced by 4,000 units. Thus, production and sales of the Siv will be reduced to 4,000 for the year.

### **Question 4**

Since the additional capacity would be used to produce the Siv, the company should be willing to pay up to DKK 280 per hour (160 usual rate plus 120 contribution margin per hour) for added labour time. Thus, the company could employ workers for overtime at the usual time-and-a-half rate of 240 per hour ( $160 \times 1.5 = 240$ ), and still improve overall profit.

### **Exercise 3**

This exercise tries to investigate the understanding of the use of decentralisation in combination with transfer pricing. There may be a variety in the answers from the students. The important thing here is to assess the students understanding of the theory and concepts and how they are used in the case companies.