

**EXAMINATION QUESTION PAPER - Take-home examination****EXC 21221****Strategic Management Accounting****Department of Accounting, Auditing and Business Analytics****Start date:** 08.05.2017 Time 12.00**Finish date:** 10.05.2017 Time 12.00**Weight:** 100% of EXC 2122**Total no. of pages:** 8 incl. front page**No. of attachments files to question paper:** 0**To be answered:** Individually**Answer paper size:** 10 excl. attachments**Max no. of answer paper attachment files:** 0**Allowed answer paper file types:** pdf

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The students shall answer the below questions *individually*. Candidates having shared solutions or parts of these will be treated and investigated as possible cheating by the Exam Office, if the graders report any suspicion on this. Help from non-students is also considered cheating.

If you quote or interpret text from other sources than your lecturing notes and material used in the classroom, you should refer to these.

Upload your answers to DigiEx as *one document in portrait A4-format*.

### Exercise 1 (30%)

Oslo Sprinkler Service AS (OSS) delivers fire-sprinkling systems in new buildings. The company is not authorized as constructing engineers, but delivers and installs the pipes, sprinkler heads and water supply systems according to the engineering specifications.

The company has a team of 14 pipe fitters and a project manager and it is managed by the owner, the Danish immigrant Mogens Ballerup, who came to Norway some 15 years ago.

On Monday 3<sup>rd</sup> July 2017 OSS will commence on a new contract that will require all available labor resources for a period of 13 weeks until Friday 30<sup>th</sup> September 2017. The company has won the sprinkling contract at Gatevold Ungdomsskole, a new secondary school in the Oslo area and during these three months, no other business activities will take place in the company than this project.

It is May 2017 and Mogens Ballerup and his accounting consultant are discussing the project 17004 Gatevold Ungdomsskole. Relevant information about the project is gathered (all figures in NOK):

- Fixed revenue, according to contract: 3 900 000 ex VAT. It is not yet decided how OSS should invoice its principal Spanska AS during the project, but 10% of the contractual sum will in any case be held back as a collateral and will not be invoiced before the project is formally completed in September 2017.
- Total number of worked hours: 7 800 (15 employees incl. project manager for 13 weeks)
- Hourly labor rate: Project manager 250 kr per hour, seven senior pipe fitters 220 kr per hour, seven junior pipe fitters 200 kr per hour
- Material costs 1 060 000 excl. VAT

The monthly fixed costs of the company are as follows:

- Salaries Mogens Ballerup: 60 000
- Office costs: 10 000 excl. VAT
- Car costs: 20 000 excl. VAT
- Depreciation: 10 000
- Other operational costs 20 000 excl. VAT

Salaries:

- All salaries are subject to 12.0% holiday pay, which is accrued along the way and paid in June 2018.
- All salaries are subject to 14.1% social security contribution.
- Social security contribution is also added on the holiday pay costs along the way, because when holiday pay is paid to the employees this is also reported as salaries subject to social security costs calculations.
- Social security is paid bi-monthly; 15<sup>th</sup> March for January and February, 15<sup>th</sup> May for March and April and so forth.
- Salaries for July covers work performed in weeks nos. 27-30, salaries for August covers work performed in weeks nos. 31-34 and salaries for September covers work performed in weeks nos. 35-39

The VAT system in Norway is as follows:

- The general VAT rate is 25.0%
- Payable VAT is paid bi-monthly; 10<sup>th</sup> April for January and February, 10<sup>th</sup> June for March and April and so forth

You can assume that it is legal to deduct VAT on all of the costs above where budget figures are quoted excluding VAT.

a) Budgeted income statement (10%)

Present the monthly budgeted income statement for Oslo Sprinkler Service AS for the period from July through September 2017. You may here assume that the value creation in the project can justify that both the revenues and materials costs are split with 1/3 of the total each month.

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As mentioned above, Oslo Sprinkler Service AS must negotiate *an invoicing plan* with its principal Spanska AS. It is important that the company has sufficient cash to pay for its obligations along the way and has a certain minimum left at the end of September to fund new projects.

For the cash-flow predictions, we can gather the following information:

- The salaries are paid in the month that they occur
- For the consumption of material in the project 17004 Gatevold Ungdomsskole, four main orders are planned (figures excl. VAT):
  - 240 000 20<sup>th</sup> June 2017
  - 420 000 15<sup>th</sup> July 2017
  - 300 000 1<sup>st</sup> August 2017
  - 100 000 15<sup>th</sup> August 2017
- The supplier of material gives the company 30 days credit period.
- The expected balance of Accounts Payable per 30<sup>th</sup> June 2017 is paid during the month of July
- Office costs, car costs and other operational costs are paid after 30 days
- Payable social security for May and June is paid 15<sup>th</sup> July 2017, payable social security for July and August is paid 15<sup>th</sup> September 2017
- Payable VAT for May and June is paid 31<sup>st</sup> August 2017
- The expected balance of Accounts Receivable per 30<sup>th</sup> June 2017 is paid during the month of July.
- No payments of other short-terms claims and liabilities are expected to be done between July and September 2017

The balance sheet is supposed to look as follows per 30<sup>th</sup> June 2017:

Assets		Equity and liabilities	
Company cars	620 000	Share capital	300 000
Accounts receivable	777 000	Retained earnings	1 362 000
Other short-term claims	103 000	Accounts payable	314 000
Bank deposits	1 020 000	Payable VAT	208 000
		Payable social security	176 000
		Other short-term liabilities	474 000
Total assets	2 520 000	Total equity and liabilities	2 520 000

Oslo Sprinkler Service AS wants to invoice its principal *five times* during the project:

- On Monday 3<sup>rd</sup> July, with due date 31<sup>st</sup> July 2017
- On Tuesday 1<sup>st</sup> August 2017, with due date 30<sup>th</sup> August 2017
- On Friday 1<sup>st</sup> September 2017, with due date 29<sup>th</sup> September 2017
- On Monday 2<sup>nd</sup> October 2017, with due date 30<sup>th</sup> October 2017
- The withheld 10% of the contractual amount, 390 000 excl. VAT, after project handover around 20<sup>th</sup> October 2017

b) Cash-flow planning (20%)

What is the *minimum* amount that the company must invoice its principal on the five invoices to ensure that the company:

- Can pay for all of its obligations in the period from July through September when they are due and still have a minimum left on the bank account of 800 000 at the end of July and the end of August as well as 1 200 000 at the end of September
- Can pay for the VAT term 10<sup>th</sup> October 2017 (VAT for July and August) and still have the minimum of 1 200 000 intact on the bank account after this payment is done. You may here disregard the effect of payment of salaries and other costs in October.

Make a suggested *invoicing plan* for the project including all five invoices.

**Exercise 2 (15%)**

Marco Polo Travels AS is a Norwegian travel and tourism company that offers holiday travels to more than 30 destinations in Southern Europe, Africa and Asia. Over a period of three years, the company has reported a small financial loss, but thanks to a sufficient equity and good cash reserves, the lack of profitability has not so far increased the operational risk significantly. The company has developed a strategy plan with *three strategic themes* for the forthcoming strategy period:

- Strong and profitable growth
- Quality is in the details
- The best company in the tourism business to work for

In recent years, Marco Polo AS has employed several young management trainees. One of them is the BI graduate Alexander F. who has been with the company now for half a year. Although not a formal member of the management group, Alexander sits in as an observer at the weekly management meetings on Monday mornings.

At one of the recent management meetings, Alexander made more notes in his book than usual. The budgets for 2018 were discussed, and several members of the team expressed their views on this, on the goalsetting process as well as on management control systems in general.

Four statements caught Alexander's attention in particular:

1. Sales manager: "If we can sell tickets for 10 million per month, the company will start making money again and secure the ability to survive in the future. Therefore, we should focus on sales and on measuring success in this area. The more successful we are with our sales efforts the more profitable we will be!"
2. CEO: "When the Board of Directors accepts the budget for 2018 it is of utmost importance that we are loyal to this and don't spend more money than the budget suggests, not only in the

beginning of the calendar year, but also in the last two quarters. We should do what we can to avoid overspending!"

3. CFO: "I am not worried about the variable costs, because we can influence these, but the fixed costs are more challenging. We must therefore make a detailed control model where we follow up variances on fixed costs, area by area, month by month!"
4. CFO: "Introducing Activity Based Costing as a tool to be able to understand better the link between some of things we do and what it costs us has proven to be very successful. I will therefore increase the scope of activity analyses significantly in 2018. In fact, I have already had a meeting with our accounting software provider and they have told us that it is possible to code all revenues and costs with relevant activity codes. Therefore, I am planning to use ABC not only as a way to understanding some of the costs in the administration and sales departments, but to understand all of the costs of our company."

On the way back from the meeting, Alexander was thinking about what he heard and he felt that something seemed to be wrong with the views that his colleagues expressed.

- "This is not what I learned in my management accounting classes", he said to himself.

He decided to talk to his manager/mentor about the management opinions conveyed in the meeting and what he felt could be a wrong approach to the implementation of the ambitious strategies for the next period. As a part of the position as a trainee, Alexander and his mentor have weekly meetings where they discuss his experiences and learning along the way. He prepares well for these meetings and presents notes and views in areas that require more and better attention, according to his own views. This time he had the four above statements to talk about.

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Alexander had concluded that all of the four statements either based on irrelevant assumptions, or were results of the lack of understanding important concepts and relationships within the area of management control. What do you think the he wanted to talk to his mentor about?

### **Exercise 3 (20%)**

#### **Part one (10%)**

Explain the concept of The Balanced Scorecard, its background, its bearing principles, how it may be used and its advantages and challenges.

#### **Part two (5%)**

It is not uncommon that companies place financial targets on top of their goal hierarchy. Some of the companies have specific targets relating to their Return on Assets (ROA), while other companies may have a high Return on Equity (ROE) as their overall target. Explain the difference between these two perspectives on profitability. In your opinion, will it make sense for a company to have any other goals than strictly financial goals as the long-term overall targets?

### Part three (5%)

Explain how the lean philosophy share a common conceptual basis with the Value Chain Analysis.

### Exercise 4 (35%)

Snorkla Foods AS is a large Norwegian company manufacturing different food and household products. The company's Frozen Pizza Division is currently producing *four different products* that are distributed through *three different distribution companies* to the various retailers.

The sales budgets for 2017 predict the following sales and production volumes in units:

	WholeSeller	FoodCo	Logistica	Total
Manhattan Style	420 000	270 000	390 000	1 080 000
Big Surfer	660 000	400 000	550 000	1 610 000
Vesuvio (new in 2017)	210 000	150 000	160 000	520 000
La Fiorentina	860 000	640 000	600 000	2 100 000
Total	2 150 000	1 460 000	1 700 000	5 310 000

We can extract the following information from the sales and productions budgets for 2017 (all figures in NOK):

	Direct production costs per unit	Budgeted sales price per unit (1)
Manhattan Style	15.50	22.00
Big Surfer	23.80	30.00
Vesuvio	16.20	24.00
La Fiorentina	25.40	35.00

(1) Sales price to the three distributors, ex. VAT

The Frozen Pizza Division of Snorkla Foods register costs at *three different cost centers*. According to the budgets for 2017 indirect costs in these three departments are:

	Budgeted costs for 2017	variable part	fixed part
Production Department (2)	12 600 000	460 000	12 140 000
Sales and Marketing Dept.	18 060 000	3 120 000	14 940 000
Logistics and Administration Dept.	5 320 000	1 890 000	3 430 000
Total costs	35 980 000	5 470 000	30 510 000

(2) Indirect production costs that come on top of the above direct production costs per unit

### Part one (5%)

Area of analysis no. 1: The profit center as cost object:

What is the budgeted profit of the Frozen Pizza Division of Snorkla Foods AS in 2017?

Snorkla Foods is using an Activity Based Costing model to analyze and allocate costs in the three different cost centers.

According to the plans for 2017, the company expects that the following activities are carried out, corresponding with the activity plans:

Activity group	Cost driver	Total activity costs	Variable part	Budgeted activity frequency	Available activity frequency
Machine set-up and calibration	Number of production series	2 400 000	0	1 250 machine set-ups	1 600 machine set-ups
Procurement	Number of purchase orders	1 800 000	0	720 purchase orders	900 purchase orders
Maintenance	Number of maintenance jobs	2 000 000	0	320 maintenance jobs	400 maintenance jobs
Quality inspections	Number of quality inspections	1 900 000	460 000	460 quality inspections	800 quality inspections
Other indirect production costs		4 500 000			
Customer meetings (4)	Number of customer meetings	5 400 000	2 700 000	1 800 customer meetings	2 400 customer meetings
Customer support (5)	Number of support hours	3 600 000	0	5 800 support hours	7 200 support hours
Customer complaints	Number of complaints/returns	1 680 000	420 000	840 complaints/returns	1 200 complaints/returns
Other sales and marketing costs		7 380 000	0		
Deliveries of goods	Number of orders delivered	2 520 000	1 890 000	14 000 customer orders	21 000 customer orders
Customer invoicing	Number of orders invoiced	1 400 000	0	14 000 customer orders	21 000 customer orders
Other logistics and adm. costs		1 400 000	0		
<b>Total budgeted costs in 2017 (6)</b>		<b>35 980 000</b>	<b>5 470 000</b>		

(4) Meetings with both distributors and retailers

(5) Time spent with customer contact, on phone or e-mail/ordinary mail

(6) Of which the *assignable* ABC-costs are  $35\,980\,000 - 4\,500\,000 - 7\,380\,000 - 1\,400\,000 = \underline{22\,700\,000}$

Part two (5%)

Area of analysis no. 2 - The various activities as cost objects:

Calculate the relevant budgeted activity rates in each activity group.

Part three (5%)

Area of analysis no. 3 - The excess capacity as a cost object:

Calculate the budgeted costs for the excess capacity in each relevant activity group. Which of the three cost centers contribute the most to the costs for excess capacity?

Based on previous logging of the activities, Snorkla Foods AS expects that the activities in 2017 are split between the four products as follows:

Activity group	Manhattan Style	Big Surfer	Vesuvio (new in 2017)	La Fiorentina	Total budgeted activity
Machine set-up and calibration	220 machine set-ups	310 machine set-ups	420 machine set-ups	300 machine set-ups	1 250 machine set-ups
Procurement	90 purchase orders	140 purchase orders	270 purchase orders	220 purchase orders	720 purchase orders
Maintenance	50 jobs	70 jobs	140 jobs	60 jobs	320 jobs
Quality inspections	70 inspections	100 inspections	260 inspections	30 inspections	460 inspections
Customer meetings	320 meetings	360 meetings	720 meetings	400 meetings	1 800 meetings
Customer support	1 400 hours	1 400 hours	1 200 hours	1 800 hours	5 800 hours
Customer complaints	250 complaints	250 complaints	40 complaints	300 complaints	840 complaints
Deliveries of goods	3 000 orders	4 000 orders	2 000 orders	5 000 orders	14 000 orders
Customer invoicing	3 000 orders	4 000 orders	2 000 orders	5 000 orders	14 000 orders

#### Part four (10%)

Area of analysis no. 4 - The products as cost objects:

Allocate direct and relevant indirect costs to the product *La Fiorentina* and calculate the budgeted profit contribution per unit and in total.

The company's management team has discussed if there are activity costs that are caused by the customers rather than the products. Based on previous logging of the activities, Snorkla Foods AS expects that the five of the activities in 2017 can be split between the three distributors as follows:

Activity group	WholeSeller	FoodCo	Logistica	Total budgeted activity
Customer meetings	900 meetings	450 meetings	450 meetings	1 800 meetings
Customer support	2 800 hours	1 600 hours	1 400 hours	5 800 hours
Customer complaints	500 complaints	220 complaints	180 complaints	900 complaints
Deliveries of goods	6 800 orders	4 300 orders	3 300 orders	14 400 orders
Customer invoicing	6 800 orders	4 300 orders	3 300 orders	14 400 orders

The four other activity costs that relate to the production will still be assignable to the products rather than the customers, according to the information in part three.

#### Part five (10%)

Area of analysis no. 5 - The customers as cost objects:

Calculate the budgeted revenues, direct costs and relevant indirect costs for the distributor *WholeSeller*.