

EXAMINATION QUESTION PAPER - Take-home examination

EXC 21221

Strategic Management Accounting

Department of Accounting, Auditing and Business Analytics

Start date: 02.05.2016 Time 12.00**Finish date:** 04.05.2016 Time 12.00**Weight:** 100% of EXC 2122**Total no. of pages:** 10 incl. front page**No. of attachments files to question paper:** 0**To be answered:** Individually**Answer paper size:** Maximum 20 with line space 1.0 excl. attachments**Max no. answer of paper attachment files:** 1**Allowed answer paper attachment file types:** pdf

The exam paper must also include a bibliography/reference list at the conclusion of the paper. These pages are counted separately from the main paper. You will find a thorough explanation of how to use quotes and references on the BI library webpage: www.bi.edu/library/training-and-support/citing-and-referencing.

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 A4-format.

Question 1 (20%)

a)

Explain in your own words how the following concepts (listed here in a random order) relate to each other in a balanced scorecard model:

- Key performance indicators
- Scorecard
- Targets
- Critical success factors
- Strategy development
- Controlling activities
- Strategy map

b)

According to the strategy plan for BI Norwegian Business School for the period from 2015 to 2018 the school's *core resources* are:

- Highly committed faculty and professional staff
- Market-oriented and innovative culture
- Inspirational learning environment
- Broad student and alumni base
- Strong brand
- Financial autonomy and latitude

Use the theory and models developed by Birger Wernerfelt and Jay B. Barney to describe how these resources may contribute to creating a competitive advantage for BI.

c)

According to the strategy plan for BI Norwegian Business School for the period from 2015 to 2018 the school's *core values* are:

- Student oriented (BI employees put students first)
- Academic freedom and integrity (BI employees honor academic values)
- Respect, responsibility and ethical awareness (BI employees manage power in a responsible manner)
- Excellence in research, teaching and support services (BI employees nurture a culture of continuous improvement)

Discuss possible critical success factors and KPI's that may be relevant to consider when the strategy plan is operationalized for the future use in a balance scorecard model. Are there any of the above areas that may prove to be difficult to measure?

Question 2 (20%)

Sonique Products AS is a Norwegian company manufacturing high-quality loudspeakers for the high-end markets in Europe and in USA.

Sonique produces three loudspeaker models that are always sold in pairs, Model 463, Model 563 and Model 663. A new product Axis 6, replaces the most expensive model 663 in 2017 as the first of a series of completely new loudspeakers.

It is October 2015 and the company's newly employed controller (that is you, by the way!) has the coordinating role in the ongoing budgeting process. The company has recently updated its strategy plan and the Board of Directors has approved the management's proposal for a new strategy for the period 2016-2020. Some of the conclusions of the strategy plans are:

- The company shall gradually increase its Return of Assets, which is considered too weak.
- Instead of having an inventory of finished products, the company will introduce an order based production system ("pull" instead of "push"), where the company produces loudspeakers after the customers (mostly large domestic and foreign retailing chains) order the goods. In the future, no loudspeakers are produced before they are actually sold.
- As a consequence of the above strategy, the inventory of finished goods is gradually reduced during 2016 and the goal is to have no finished loudspeakers left in store by the end of 2016. Another target is not to increase the inventory of components (see costing model) used in the production process during the year, hence the total inventory value at the end of 2016 will equal the value of the components in the beginning of the year.
- Due to seasonal variations during the year, the production output will fluctuate. This is only achievable with a high degree of flexibility in the production team and the number of available labor hours.
- Managers and employees own the company and the chances of attracting new investors or inviting existing investors to increase their investments are limited. The company's bank will probably not increase their total commitment, so any future growth must be funded through the daily operations. Hence, neither an emission of new shares nor new loans are planned for 2016.

Below you will find key figures from the income statements for Sonique Products AS:

	2012	2013	2014	2015 (1)
Sales income	28 463 000	29 876 000	28 766 000	32 000 000
Direct material costs	10 627 000	10 920 000	10 556 000	11 950 000
Direct labor costs	4 205 000	4 468 000	4 263 000	4 600 000
Change of inventory (2)	-202 000	-23 000	26 000	-55 000
Contribution margin	13 429 000	14 465 000	13 973 000	15 395 000
Fixed costs	12 883 000	13 728 000	13 265 000	14 600 000
Financial revenues	24 000	45 000	52 000	23 000
Financial costs	212 000	262 000	294 000	270 000
Profit before taxes	358 000	520 000	466 000	548 000

- (1) Figures for 2015 base on a forecast where actual figures for January-September 2015 are used in addition to a revised budget for Q4 2015.
- (2) A negative figure means that the inventory level is reduced during the period (increased cost of sales).

Below you will find key figures from the balance sheet of Sonique Products AS:

Assets	31.12.2012	31.12.2013	31.12.2014	31.12.2015 (1)
Intangible assets	620 000	580 000	540 000	500 000
Land	1 400 000	1 400 000	1 400 000	1 400 000
Buildings	9 620 000	9 300 000	8 980 000	8 660 000
Machines	1 736 000	2 176 000	2 387 000	2 200 000
Cars	828 000	1 209 000	1 321 000	1 265 000
Inventory (2)	2 302 000	1 923 000	1 136 000	2 500 000
Accounts Receivable	4 682 000	4 955 000	6 572 000	6 200 000
Other short-term claims	362 000	402 000	376 000	400 000
Bank deposits	2 828 000	1 933 000	2 283 000	3 400 000
Total assets	24 378 000	23 878 000	24 995 000	26 525 000
Equity	6 362 000	6 512 000	6 783 000	7 900 000
Mortgage loans	9 477 000	9 277 000	9 077 000	8 877 000
Other long-term liabilities	0	1 400 000	1 200 000	1 000 000
Accounts Payable	6 597 000	4 109 000	5 652 000	5 998 000
Payable social security	225 000	322 000	307 000	350 000
Payable VAT	162 000	326 000	204 000	150 000
Payable holiday pay	1 231 000	1 323 000	1 409 000	1 520 000
Payable corporate tax	0	146 000	130 000	153 000
Other short-term liabilities	324 000	463 000	233 000	577 000
Total equity/liabilities	24 378 000	23 878 000	24 995 000	26 525 000

- (1) The Balance Sheet per 31.12.2015 base on the Balance Sheet per 30.9.2015 and a revised budget for Q4 2015.
- (2) Consists of both finished goods and components for production.

Sales budget for 2016 and seasonal variances

The projected sales income for 2015 are broken down as follows:

	<u>463</u>	<u>563</u>	<u>663</u>	<u>Total</u>
Units sold (pairs)	3 850	4 360	860	9 070
Average price per pair	2 460	3 850	6 678	3 528
Total sales income	9 471 000	16 786 000	5 743 000	32 000 000

The market plan for 2016 states that it is possible to increase sales of Model 463 by 10%, if the prices remain unchanged. The popular Model 563 recently won a test in the magazine "HiFi Freak" and it seems to be possible to increase prices by 5% and still get a 25% growth in sales volume. The top of the line Model 663 struggles with a tough competition in the top segment and a decrease of demand of 20% is expected, if prices remain unchanged.

The demand in the loudspeaker market follows seasonal changes. Based on a historical distribution of monthly sales, you decide to use the following distribution for sales income and variable costs in 2016:

January	10 %
February	9 %
March	9 %
April	7 %
May	7 %

June	6 %
July	6 %
August	7 %
September	8 %
October	9 %
November	10 %
December	12 %

You also decide to split the indirect costs with 1/12 each month (8.33%). You may assume that the sales and purchases are distributed evenly through the month and that all months have 30 days.

Production planning for 2016

The production is fully standardized and the company has therefore chosen a standard costing model where variable costs are allocated to the cost objects (variable costing method). The loudspeakers consist of components that Sonique Products purchases from external manufacturers, so production is actually an assembly of these components.

The costing models for the various products in 2016 base on the following costing standards (all figures in NOK):

		<u>463</u>	<u>563</u>	<u>663</u>
Direct material	Wood	145.00	320.00	405.00
	Speaker elements	612.00	1 180.00	1 834.00
	Filters and wiring	95.00	168.00	280.00
	Miscellaneous material	38.00	52.00	198.00
	Packaging	15.00	20.00	25.00
Direct labor	Standard time consumption (1)	2.45 hours	3.05 hours	4.25 hours
	Labor rate per hour	190.00	190.00	190.00

(1) Where 2.45 hours means 2 hours and 45/100, not 2 hours and 45 minutes.

The hourly labor rate includes an accrual for 12.0% holiday pay and 14.1% social security costs on salaries and social security and is an average value on all hours that the Production Department expects to deliver in 2016.

The inventory of finished goods is valued on the basis of total direct costs (and not including indirect production costs, which is the correct procedure according to Norwegian accounting legislation)

The inventory consists both of finished goods and purchased components for the production of loudspeakers.

The inventory of finished goods per 1st January 2016 is expected to be as follows:

- 463: 180 units (pairs)
- 563: 356 units (pairs)
- 663: 108 units (pairs)

These loudspeakers (manufactured in 2015) are produced according to costing figures that are different from the above model for 2016. When looking more into the figures you see that total direct production costs per unit is almost exactly the same as the 2016 costing, so we can use this to calculate the opening balance of the inventory of finished goods.

Fixed costs for 2016

The accounting systems in Sonique Products AS is organized with six different cost centers and below you will find the budget for the fixed costs in 2016, split to these six different cost centers:

Type of costs	Production Department	Logistics Department	Sound Laboratory	Marketing Department	Sales Department	Management	Total
Salaries and personnel	812 000	937 000	1 260 000	1 265 000	2 890 000	3 626 000	10 790 000
Depreciation	187 000	40 000	23 000	83 000	65 000	205 000	603 000
Rent	364 000	0	0	0	0	0	364 000
Electricity	181 000	23 000	35 000	43 000	36 000	42 000	360 000
Telephone/ computer lines	14 000	18 000	16 000	29 000	38 000	27 000	142 000
Car costs	0	0	0	120 000	165 000	106 000	391 000
Travels	20 000	40 000	30 000	120 000	220 000	82 000	512 000
Commission to agents	0	0	0	0	574 000	0	574 000
Other operat. expenses	322 000	36 000	99 000	259 000	138 000	50 000	904 000
Financial revenues	0	0	0	0	0	-23 000	-23 000
Financial costs	0	0	0	0	0	270 000	270 000
Total	1 900 000	1 094 000	1 463 000	1 919 000	4 126 000	4 345 000	14 887 000

- Calculate the total budgeted sales for 2016, split to the three products, and split the total in monthly budgets.
- Calculate the planned number of units (pairs) produced in 2016, with corresponding budgets for direct material and direct labor costs
- Calculate the budgeted production costs per unit in 2016 and the change in inventory from 1st January to 31st December 2016
- Present a simplified master budget for 2016
- Present a detailed budgeted monthly income statement for 2016. Split labor costs in variable (direct) costs and fixed costs and specify salaries, holiday pay and social security costs. (Due to limited space we suggest that you split the presentation in two parts, January-June and July-December incl. total)

Question 3 (20%)

After you had completed the budgeted income statement for Sonique Products AS for 2016, you continued to work with a cash-flow budget and a budgeted balance sheet.

You gathered additional information regarding the budgeted costs, which could be relevant for the cash-flow predictions:

Cost of sales	Suppliers of direct material are paid on average after 30 days.
Salaries and other personnel costs	The budget figures include 12.0% holiday pay and 14.1% employer's contribution to the social security system, which is calculated on top of salaries and holiday pay. The salaries are paid in the same month as it is taken to cost. Accrued holiday pay for 2016 will be paid in 2017. Social security costs are paid bi-monthly, in January for November and December (opening balance 1.1.2016), in March for January and February, in May for March and April, in July for May and June, in September for July and August and in November for September and October.
Rent	Paid quarterly in advance, in the beginning of each quarter.
Electricity	Paid on average after 30 days, the monthly budget is 1/12 of annual budget.
Telephone and data lines	Paid on average after 30 days, the monthly budget is 1/12 of annual budget.
Company car costs	Paid on average after 30 days, the monthly budget is 1/12 of annual budget.
Travels	Paid the same month that the costs occur, the monthly budget is 1/12 of the annual budget.
Agent commission	Paid on average after 30 days, the monthly budget is 1/12 of annual budget.
Other operating costs	Paid on average after 30 days, the monthly budget is 1/12 of annual budget.
Financial revenues	Deposited on the company's bank account 31.12.2016
Financial costs	Deducted from the company's bank account in four equal portions in March, June, September and December

Value added tax (VAT) is reported and paid six times per year:

In February for November and December (opening balance 1.1.2016)

In April for January and February

In June for March and April

In August for May and June

In October for July and August

In December for September and October

It is the date of invoicing and not the date of payment that determines in which term the VAT is reported. You may use 25% VAT in your calculations.

The output VAT is calculated based on the company's sales income. Because half of the company's sales is export sales, where the output VAT rate is 0%, the 25% output VAT rate is only relevant for half of the monthly sales.

Pertaining to incoming VAT to be deducted, there is a 25% VAT on direct material costs, rent, electricity, telephone/data line costs and other operational costs. The VAT on company cars is not deductible and is therefore included in the budget figures.

You also gathered additional information that could be relevant for the budgeted balance sheet:

Intangible assets	Capitalized costs for patented designs, depreciated with 40 000 in 2016.
Land	Not subject to wear and tear, no depreciation
Buildings	No capitalized investments, depreciated with 320 000 in 2016
Machines	No purchases/sales, depreciated with 187 000 in 2016
Company cars	No purchases/sales, depreciated with 56 000 in 2016
Inventory	Consists per 31.12.2016 of inventory of components with same book value as per 1.1.2016.
Accounts Receivable	Of the opening balance per 1.1.2016 4 200 000 is paid in January and 2 000 000 in February. Customers pay after 45 days in average in 2016, no budgeted credit losses
Other short-term claims	Is reduced to 300 000 in December 2016.
Bank deposits	Of the opening balance 1.1.2016 is 450 000 a deposit of employees' withheld taxes on a separate bank account, locked for payment of normal expenses and 150 000 a rent deposit on a separate account to serve as collateral for rent agreement. You may assume that totally 600 000 of the bank deposits have such payment restrictions also at the end of 2016.
Equity	75% of the profit to retained earnings, 25% to payable taxes.
Mortgage loans	Paid back gradually with four installments of 50 000 each in February, May, august and November.
Other long-term liabilities	Paid back with two installments of 100 000 each in April and October
Accounts Payable	Opening balance 1.1.2016 4 998 000 is paid in January and 1 000 000 in February.
Payable social security	Opening balance 1.1.2016 paid in January, see information below.
Payable VAT	Opening balance 1.1.2016 paid in February, see information below.
Payable holiday pay	Opening balance 1.1.2016 is paid in June 2016. Holiday pay accrued in 2016 to be paid in 2017.
Payable corporate tax	Opening balance 1.1.2016 is paid in November 2016, and an accrual of 25% of the accumulated profit is made at the end of the year.
Other short-term liabilities	Will be reduced to 400 000 in December 2016

- Present the calculations of the six bi-monthly VAT-terms, showing output, input VAT and payable amount for each term.
- Present a monthly cash-flow budget for 2016. You may use a simple reporting format, starting with the opening balance of the relevant bank deposit accounts and it is not necessary to split the cash flows in operational, investing and financing activities. Here you may also split your reporting in two parts, one for January-June and the other for July-December.
- Present the expected balance sheet per 31.12.2016.

Question 4 (20%)

A company has a budget for quality control costs of 1 240 000 of which 24% is considered to be variable. The budgets for next year is 600 performed quality controls, which is 75% of the available capacity.

- Assume that there is no alternative use for the resources tied up in the quality control process. What are the costs for the excess capacity? Explain why this cost is the cost of flexibility for the company and give examples of actions that the company may take to reduce such costs.
- Explain why Activity Based Costing may help us to understand more about those activities that in a value chain analysis is considered to be supporting activities.
- Explain why Activity Based Costing may help us to understand that not all variable costs fluctuate because of a volume-based relationship between activity level and the corresponding costs of these activities.

Question 5 (20%)

a)

One of the principles in the Lean-philosophy is to strive for *heijunka*, which is a technique for reducing production output unevenness. The goal is here to carry out the primary activities in a production process at a constant rate to enable that further processing also are as constant and predictable as possible.

Discuss if this principle may be in conflict with the Just-in-Time principle in Lean-philosophy and if so, how a company can design production systems that contribute to reducing such conflicts between these two principles.

b)

For many years, the car dealerships around the world have organized their maintenance and repair functions so that when you deliver your car you give your car keys and the contact information to a person at a reception desk who is handling all of the communication with the customers. The mechanics however, have little contact with the owners of the cars and perform the tasks that have been agreed upon with the customer.

Some years ago, Volvo decided to organize this function differently with their Swedish dealers. The customers are now in direct contact with the mechanic that performs the repair and service tasks, from the booking of an appointment, when the car is delivered and when it is picked up and the bill is paid. The mechanic calls the customer directly if there is a need to discuss further the tasks that need to be carried out and inform about the costs for these.

The person(s) at the workshop reception desk got new jobs in the same companies, working either with sales and aftermarket services or as mechanics.

Discuss how this re-organization is influenced by the lean philosophy.

c)

A five-star luxury hotel offers room service from 5PM to 11PM every day, where the guests of the hotel can order dinner or smaller courses from the room service menu to be delivered to the hotel room. The food is prepared in the same kitchen as the food for the ordinary hotel restaurant customers and some of the dishes are identical. Room service customers pay an additional fee to cover the delivery.

In this city, the best hotels operate in a very competitive market and they discuss new strategies to increase the quality and to widen the scope of their services. One of these hotels are currently planning to expand the opening hours of its room service from six to 24 hours a day. In the future, these hotel customers will get food delivered to their rooms whenever they want.

Discuss how the hotel can implement such a strategy without being in conflict with the main principles of lean philosophy.

d)

One of the Lean-philosophy principles is *Kaizen*, to strive for continuous improvement in all areas relevant for overall value creation.

The Kaizen principle claims that even if many of the targets are met and the company performs better than ever, it shall not rest on its laurels, but continue to identify organizational areas for future development.

Discuss how the Kaizen principle influences a company's strategic planning process and the underlying level of ambitions. How important are cultural aspects of the organization in a company that wants to focus more on creating such continuous improvement?