EVALUATION GUIDELINES - 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

For more information about formalities, see examination paper.

Exercise 1 (30%)

a) Budgeted income statement (10%)

		July	August	September	Total
Sales revenues		1 300 000	1 300 000	1 300 000	3 900 000
Material costs		353 333	353 333	353 334	1 060 000
Salaries Ballerup		60 000	60 000	60 000	180 000
Salaries Project Manager	250	40 000	40 000	50 000	130 000
Salaries seven senior pipe fitters	220	246 400	246 400	308 000	800 800
Salaries seven junior pipe fitters	200	224 000	224 000	280 000	728 000
Social security costs on salaries	14,1 %	80 426	80 426	98 418	259 271
Holiday pay	12,0 %	70 899	70 899	88 370	230 168
Social security costs on holiday pay	14,1 %	9 997	9 997	12 460	32 454
Contribution margin		214 945	214 945	49 418	479 308
Office costs		10 000	10 000	10 000	30 000
Car costs		20 000	20 000	20 000	60 000
Depreciation		10 000	10 000	10 000	30 000
Other operational costs		20 000	20 000	20 000	60 000
Budgeted profit		154 945	154 945	-10 582	299 308

b) Cash-flow planning (20%)

First step is to find the outgoing payments for July, August and September:

	July	August	September	Total
Paid balance of A/P	314 000	0	0	314 000
Paid VAT term 3-2017	0	208 000	0	208 000
Paid social security 3-2017	176 000	0	0	176 000
Paid material costs	300 000	525 000	375 000	1 200 000
Paid salaries	570 400	570 400	698 000	1 838 800
Paid office costs	0	12 500	12 500	25 000
Paid car costs	0	25 000	25 000	50 000
Paid other operational costs	0	25 000	25 000	50 000
Paid social security 4-2017	0	0	160 853	160 853
Total outgoing payments	1 360 400	1 365 900	1 296 353	4 022 653

Then we can look further at each month:

<u>July 2017</u>

Opening balance bank account	1 020 000
+ Incoming payments (A/R 30th June)	777 000
- Budgeted outgoing payments in July	1 360 400

= Expected closing balance 31st July 2017	436 600
Required buffer 31st July 2017	800 000
= Extra incoming payments needed	363 400

Minimum amount invoice no. 1 incl. VAT	363 400
Minimum amount invoice no. 1 excl. VAT	290 720
Output VAT July	72 680

<u>August 2017</u>

Opening balance bank account	800 000
- Budgeted outgoing payments in August	1 365 900
= Expected closing balance 31st August	-565 900
Required buffer 31st August 2017	800 000
= Extra incoming payments needed	1 365 900

Minimum amount invoice no. 2 incl. VAT	1 365 900
Minimum amount invoice no. 2 excl. VAT	1 092 720
Output VAT August	273 180

<u>September 2017</u>

Opening balance bank account	800 000
- Budgeted outgoing payments in September	1 296 353
= Expected closing balance 30th September 2017	-496 353
Required buffer 30th September 2017	1 200 000
= Extra incoming payments needed	1 696 353

In addition to this, the company needs to secure cash to cover the payment of the VAT term for July and August. We will therefore need to compute this VAT term.

<u>Output VAT</u>

Invoice no. 1, 3rd July 2017	72 680
Invoice no. 2, 1st August 2017	273 180

= Total output VAT	345 860

<u>Input VAT</u>

Material invoices July	420 000 * 25% = 105 000
Material invoices August	400 000 * 25% = 100 000
Office costs, car costs and other operational costs July	50 000 * 25% = 12 500
Office costs, car costs and other operational costs August	50 000 * 25% = 12 500

= Total input VAT	230 000

Payable VAT 10th October 2017	115 860

Extra incoming payments needed in September when VAT term 4-2017 is taken into account will then be 1 696 353 + 115 860 = 1 812 213

Minimum amount invoice no. 3 incl. VAT	1 812 213
Minimum amount invoice no. 3 excl. VAT	1 449 770
Output VAT September	362 443

The project can then be invoiced as follows (all figures excl. VAT)

- Invoice no. 1, 3rd July 2017	290 720
- Invoice no. 2, 1st August 2017	1 092 720
- Invoice no. 3, 1st September 2017	1 449 770
- Invoice no. 4, 1st October 2017 (*)	676 790
- Invoice no. 5, around 20th October 2017	390 000
	------------
	3 900 000

(*) Because we know that the last invoice must be 10% of contractual amount, 390 000, this is the amount left to invoice for the 90%-part of the contract.

We can for the sake of good order check if everything now ties up:

	July	August	September	
Open balance bank account	1 020 000	800 000	800 000	
Incoming payments from earlier periods	777 000	0	0	
Incoming payments this period	363 400	1 365 900	1 812 213	
Outgoing payments	1 360 400	1 365 900	1 296 353	
Closing balance bank account	800 000	800 000	1 315 860	
			1 200 000	Buffer
			115 860	To cover VAT
			1 315 860	

Exercise 2 (15%)

A very good answer to this question will at least cover the following viewpoints:

Statement no. 1

- Market success measured in terms of sales revenue is an overall goal, which will not be reached without the company gaining control over a number of underlying critical success factors. It will therefore not make sense to focus on sales as such, but instead the company should look at what triggers such.
- In most cases, it is not possible to increase sales without gaining control over critical success factors as increased customer satisfaction, increased customer loyalty and increased customer base. The growth will often not be possible with both keeping existing customers and getting new ones.
- This growth will normally not be possible without a constant focus on product improvement and development, ability to deliver on time and ability to deliver according to the customer's quality norms.
- What the company then needs to measure and follow up is therefore not sales, but KPIs such as for instance the rate of returning customers (may indicate loyalty), number of new customers, number of complaints.
- The sales manager also links sales growth to increased profitability. This assumes that the marginal revenue exceeds the marginal costs when this growth takes place. This will require strict cost control as well as focus on not giving away too high discounts when trying to attract new customers. We can normally not allow a situation where new customers are much less profitable than the existing ones, just for the sake of growing. An increased understanding of

the mechanisms that trigger not only sales, but also profitable sales is therefore necessary to succeed in the market place.

Statement no. 2

- Firstly, we can ask the question "should the Board of Directors approve the budget as such or is it more correct that they actually approve the underlying activity plan and that the administration must convert these actions into cost consuming resources"?
- Then we can ask if an annual static budget is the best way to gain control over the value creation process in a company.
- Sometimes plans must be changed so that key areas get the resources they deserve. When plans and corresponding budgets are not adapted to these changes, organizational inertia will increase the risk for failing strategic execution.
- A traditional budget for a calendar year, approved by the Board of Directors in November the past year, will in cases where company face many new challenges, soon lose its relevance. Many companies will therefore realize that the budgets primarily act as simulation tools and that financial forecasting often makes more sense than strict, detailed and static budgets.

Statement no. 3

- Cost control is of course important, but in real life are often a large part of the costs so fixed in nature that we can consider them unavoidable at least within our planning horizon. Variance between actual and budgeted costs will therefore often be caused by faulty budgets rather than organizational behavior along the way.
- If costs are unavoidable, they will often be same whether the company chooses one path of action instead of another. The company should then focus on the more decision relevant costs; costs that will change when plans and actions are changed.

Statement no. 4

- Activity Based Costing can be a powerful tool, because it focuses on establishing the underlying link between what we do (activities, activity groups/areas or business processes) and the corresponding use of resources.
- ABC has some limits that we should know about. One such limiting factor is complexity. The more sophisticated models we make the more data we must collect and analyze.
- Another limiting factor is that not all costs have a known cost driver on the detailed activity level. ABC may therefore not be capable of describing causal relationships relevant for all types of costs. We should therefore disregard typical facility based and infrastructural costs.
- Hence, ABC will help us to understanding how mechanisms trigger costs in areas where we are able to define a relevant cost driver. It is when we understanding these mechanisms we have the possibility to influence the use of resources over time.

Exercise 3 (20%)

Part one (10%)

The background for The Balanced Scorecard

- During the 70-ies and the 80-ies, many successful companies had started to focus not only on reporting traditional financial information such as income statements, balance sheets and cash flows, but on also reporting in relevant non-financial areas. Management wanted regular updates from important areas such as for instance quality and emission controls, customer satisfaction as logistical efficiency.

- Harvard professor Robert Kaplan teamed up with the management consultant David P. Norton in the beginning of the 90-ies to design a generic reporting model that based on companies evaluating their own performance in many areas regularly in a scorecard. The model balanced financial with non-financial targets, hence the name Balanced Scorecard.
- The model was presented in Harvard Business Review in 1992 and the authors followed up four years later with the first full textbook on the subject. In the beginning, The Balanced Scorecard was mainly a management information tool, a structured way to obtain performance data and an evaluation of these in areas relevant to management.
- The model was further developed in the early 21st century and many companies started to look at The Balanced Scorecard as a powerful alternative to traditional budgeting. Hence, the term "Beyond Budgeting" was coined. The model gained success in both the private and public sectors and soon managers discovered that The Balanced Scorecard could be used as a tool to measure the degree of strategy implementation.
- It was the invention of the strategy map that helped enterprises to discover that the various critical success factors that the strategy built upon, were linked to each other in a goal hierarchy, starting with factors belong to the infrastructural perspective.

<u>The bearing principles of The Balanced Scorecard</u>

- A company cannot influence the overall target directly. It cannot decide to increase profitability and follow up profitability as such, as this is a consequence of success in many areas.
- The company will, when it measures the gap between actual situation and an ideal performance in these areas, discover which areas that require the most management power, ingenuity, investments and labor resources. Management can then focus on areas that are critical for the achievement of the overall and more long-term goals.
- The Balanced Scorecard is therefore, when it is used in an efficient way, the tool that links strategy, execution of strategy and activity plans with the daily operations.

<u>How it works</u>

- The Balanced Scorecard requires a strategy than can be made operational and executional. The company must avoid abstract or vague targets and use the SMART criteria in its goalsetting process.
- The company needs to define the critical success factors, conditions that need to be met for a goal to be reached. These critical success factors can often be grouped in three; generic factors that almost every company will try to gain control over (satisfied customers, motivated personnel), factors that are more industry related (the average rent per square meter in a real estate company) or more enterprise-specific factors.
- For each critical success factor, the company should try to find at least one parameter that measures the level of success. These metrics are called Key Performance Indicators. A KPI will be quantitative; measuring the degree of control we have over something that we have defined as critical for our overall ability to execute the company's strategy.
- The targets with corresponding critical success factors and KPIs are grouped in four different strategic perspectives:
    - The infrastructural perspective: That normally covers areas such as competence, skills, innovation and product development, capacity, systems, databases and infrastructural network and relations
    - The internal process perspective: That normally covers areas such as productivity, quality and ability to deliver on time, environmental issues, and safety as well as product and process improvements.
    - The customer/market perspective: That normally covers areas such as customer satisfaction, customer loyalty, image/reputation, branding, relations to media and other external parties

    - The financial perspective: That normally covers areas such as profitability, cash flows and value creation for owners
- Because these perspectives link to each other, the critical success factors also intertwine. Financial success is normally not achievable without success in the customer/market perspective and this is not possible without well-functioning internal processes. These are again a consequence of developing and sustaining valuable internal resources in the infrastructural platform of the company. A strategy map may visualize the links between the various critical success factors.
- When the company knows its targets, the critical factors to overcome and how to measure the ability to gain such control, it is time to start measuring the actual performance. The KPIs must be valid and reliable and we should be able to use the same metric to measure development in a trustworthy manner over time. The performance is evaluated according to a grade scale and scores are then reported back to the organization's decision makers.

<u>Advantages and challenges</u>
- The Balanced Scorecard created the bond between daily operational activities and organization behavior on the one side and strategic long-term thinking, goalsetting and planning on the other side.
- The Balanced Scorecard is, due to its natural focus on balancing the necessary components that together create success, a concept that offers a very holistic approach to management control.
- One of the main challenges is probably not attributable to the model as such, but often become relevant when we shall measure in real life. Some of things that a company will need to gain control over, are actually difficult to measure. Areas such as measurement of competence, ability to solve problems, workforce motivation and creativity are important, but may prove difficult to measure. If we leave out measuring in the areas where we are uncertain of what and how to measure, we will make the model less balanced.
- We may end up in a situation where we measure what we find easy to measure, rather than measuring what we should have measured. We have also seen that many enterprises have the ambitions to measure much more than what they actually need, and therefore areas that are most critical will not get the attention they deserve.

Part two (5%)

- Putting Return on Equity on top of the hierarchy of goals signals a constant focus on value creation for owners. This may be an important perspective for a publically listed company with shareholders that may be shortsighted and disloyal if they do not get the expect yield on their investment.
- ROE is high not only because of high profitability, but will also be apparent when equity levels are generally low. When ROE is acceptable, the solidity may not be and the company can be at risk if owners are greedy and want dividends.
- With a focus on the Return on Assets, the company has a more holistic approach to financial value creation, which may give us a better picture, particularly in a company that has invested much in fixed assets and technology and has high borrowings to cover these.
- The Balanced Scorecard model must reflect the actual strategy and not all enterprises will find that it makes sense to pursue financial goals as such at all time. A company that in many years has had a challenging role in the market may have as its overall goal to be number one. Hence, such a business needs to be the provider of choice and will put market shares above profitability for a certain time period.
- The Balanced Scorecard is also suited to non-profit organizations and the public sector where the purpose is to get the most out of the money allocated to their role and function.

Part three (5%)

- One of the bearing principles in the lean philosophy is that the customers define the values, as they have the ability and willingness to pay for a company's goods and services. As long as this motivation prevails, any product and attribute to this that customers pay for, adds to value.
- This also means that any activities carried out that not add to value, may be considered as waste. Some of these non-value creating activities are necessary because they may be value bearing, they help us to carry out the value creating activities. Such value bearing activities are therefore considered in classic lean thinking as "a necessary evil".
- Activities that are not asked for, neither by our customers, nor internally in our organization is the type of organizational waste that we should avoid by any means as they just add to costs.
- Many of these activities are what Michael Porter described as supporting activities in his 1985 model for Value Chain Analysis.

Exercise 4 (35%)

Part one (5%)

	Manhattan Style	Big Surfer	Vesuvio	La Fiorentina	Total
Sales price per unit	22,00	30,00	24,00	35,00	
Sales volume	1 080 000	1 610 000	520 000	2 100 000	
Budgeted sales revenues	23 760 000	48 300 000	12 480 000	73 500 000	158 040 000
Direct production costs per unit	15,50	23,80	16,20	25,40	
Direct production costs	16 740 000	38 318 000	8 424 000	53 340 000	116 822 000
Contribution margin					41 218 000
Production Department					12 600 000
Sales and Marketing Department					18 060 000
Logistics and Administration Dept.					5 320 000
Budgeted profits					5 238 000

Part two (5%)

Activity group	Fixed costs	Freq.	Act. rate fixed		Variable costs	Freq.	Act. rate variable	
Machine set-up/calibr.	2 400 000	1 600	1 500,00	per series				
Procurement	1 800 000	900	2 000,00	per order				
Maintenance	2 000 000	400	5 000,00	per job				
Quality inspections	1 440 000	800	1 800,00	per control	460 000	460	1 000,00	per control
Customer meetings	2 700 000	2 400	1 125,00	per meeting	2 700 000	1 800	1 500,00	per meeting
Customer support	3 600 000	7 200	500,00	per hour				
Customer complaints	1 260 000	1 200	1 050,00	per case	420 000	840	500,00	per case
Deliveries of goods	630 000	21 000	30,00	per delivery	1 890 000	14 000	135,00	per delivery
Customer invoicing	1 400 000	21 000	66,67	per order				
	17 230 000				5 470 000			

Part three (5%)

	Activity rate, fixed	Excess cap.		Cost of excess capacity
Machine set-up/calibr.	1 500,00	350	series	525 000
Procurement	2 000,00	180	orders	360 000
Maintenance	5 000,00	80	jobs	400 000
Quality inspections	1 800,00	340	controls	612 000
Customer meetings	1 125,00	600	meetings	675 000
Customer support	500,00	1400	hour	700 000
Customer complaints	1 050,00	360	cases	378 000
Deliveries of goods	30,00	7000	deliveries	210 000
Customer invoicing	66,67	7000	orders	466 667
				4 326 667

Part four (10%)

	Frequency	Activity rates	La Fiorentina
Sales volume			2 100 000
Sales income			73 500 000
Contribution margin			20 160 000
Machine set-up and calibration	300	1 500,00	450 000
Procurement	220	2 000,00	440 000
Maintenance	60	5 000,00	300 000
Quality inspections, fixed	30	1 800,00	54 000
Quality inspections, variable	30	1 000,00	30 000
Customer meetings, fixed	400	1 125,00	450 000
Customer meetings, variable	400	1 500,00	600 000
Customer support	1 800	500,00	900 000
Customer complaints, fixed	300	1 050,00	315 000
Customer complaints, variable	300	500,00	150 000
Deliveries of goods, fixed	5 000	30,00	150 000
Deliveries of goods, variable	5 000	135,00	675 000
Customer invoicing	5 000	66,67	333 333
Total ABC-costs			4 847 333
Profit contribution			15 312 667
Profit contribution per unit			7,29

Part five (10%)

	Manhattan Style	Big Surfer	Vesuvio	La Fiorentina	Total
Sales price per unit	420 000	660 000	210 000	860 000	2 150 000
Sales volume	22.00	30.00	24.00	35.00	
Budgeted sales revenues	9 240 000	19 800 000	5 040 000	30 100 000	64 180 000
Direct production costs per unit	15.50	23.80	16.20	25.40	
Direct production costs	6 510 000	15 708 000	3 402 000	21 844 000	47 464 000
	2 730 000	4 092 000	1 638 000	8 256 000	16 716 000

Product-related costs					
WholeSeller's part of Snorkla's sales	38,89 %	40,99 %	40,38 %	40,95 %	
Machine set-up and calibration	128 333	190 621	254 423	184 286	757 663
Procurement	70 000	114 783	218 077	180 190	583 050
Maintenance	97 222	143 478	282 692	122 857	646 250
Quality inspections, fixed	49 000	73 782	327 115	22 114	655 255
Quality inspections, variable	27 222	40 994	105 000	12 286	185 502
Total product-related costs	371 777	563 658	1 187 308	521 734	2 644 477

Customer-related costs	Frequency	rate	
Customer meetings, fixed	900	1 125,00	1 012 500
Customer meetings, var.	900	1 500,00	1 350 000
Customer support	2 800	500,00	1 400 000
Customer complaints, fixed	500	1 050,00	525 000
Customer complaints, var	500	500,00	250 000
Deliveries of goods, fixed	6 800	30,00	204 000
Deliveries of goods, variable	6 800	135,00	918 000
Customer invoicing	6 800	66,67	453 333
Total customer-related costs			6 112 833
Profit contribution			7 958 690