STRATEGIC MANAGEMENT ACCOUNTING:

ABC, ABM & ABB

WEEK 6

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PRESENTATION OUTLINE

A) Review: ABC and its logics

B) ABM: conceptualization

C) Examples

D) ABB: conceptualization

A) REVIEW: ABC (1)

Activity-based costing (ABC) has been defined as:

Costing systems based on activities that link organizational spending on resources to products and services produced and delivered to customers

Activities → **tasks performed into organizations. An activity brings together people, equipment, materials, etc to produce a product or services. Activities are described using verbs: assemble, produce, set up machines, respond to customer requests, etc.**

A) REVIEW: ABC (2)

LINKS → **ABC systems *allocate* indirect and support expenses accurately to individual products, service and customers.**

PRODUCT SERVICE → **ABC systems aim at identifying the cost for products and services produced and delivered to customer**

A) REVIEW: ABC (3)

Traditional cost systems use actual departments or cost centers for accumulating and allocating costs.

Versus

ABC systems instead of using cost centers use activities. Rather than asking how to allocate a service department expense to a production department, the ABC system designer asks *what* activities are being performed by the service department. The resources expenses are assigned to activities based on how much of them are required or used to perform the single activity.

A) REVIEW: ABC (4)

ABC systems use a two-stage approach that is similar to but more general than the structure of the traditional cost systems:

A) Tracing costs to activities;

B) Assigning costs from activities to cost objects (e.g. products).

A) REVIEW: ABC (5)

A) TRACING COSTS TO ACTIVITIES

1) Develop the activity dictionary

It means the list of the major activities performed into the organization. In doing this, an ABC designer should identify the simple and single tasks which are performed and then aggregate them in major activities, e.g. we will have Activity 1, Activity 2, etc. In doing so, the ABC designer should refer to a guideline by using verbs for identifying activities (set up, receiving materials, etc)

A) REVIEW: ABC (6)

2) Assign resource expenses to each activity

If the resource is “indirect labor” we should identify in which percentage it is used by the activity 1, the activity 2, the activity 3.

3) Consider other indirect expenses:

Example are: i) company’s computer system; ii) overhead expenses (machine depreciation, machine maintenance, ect..). The aim is to allocate these costs to the activities previously listed or, eventually, add new categories

A) REVIEW: ABC (7)

4) Identify levels of cost hierarchy:

The levels of cost hierarchies are identified (unit, bacthes of units, product) in order to match them with the activities included in the dictionary.

At this stage the ABC model is only half completed, i.e. costs have been accumulated at activities but not yet driven down to products. ABC transforms the focus from what the money was being spent on (labor, equipment, supplies) to reasons of spending resources.

A) REVIEW: ABC (8)

B) COSTS FROM ACTIVITIES TO PRODUCTS

Attention is to understand why the activities were being performed. It means to recognize that activity expenses should be related in some way to the demands for activities by the individual products.

5) Identification of the activity cost drivers:

Represent linkage between activities and cost objects (products, services, etc). Each ABC designer should identify activity cost drivers for each activity listed in the dictionary.

A) REVIEW: ABC (9)

6) Identify the total quantity of units (hours, pieces) for each activity cost driver:

If, e.g, activitity is “set up machine” and the ACD is hours of setting up, then we need to calculate the total hours of setting up.

7) Calculate the activity cost driver rate:

It can be calculated by dividing the activity expenses by the total quantity of the activity cost driver.

A) REVIEW: ABC (10)

8) Attribute activity cost to product:

We need to multiply the activity cost driver rate, previously identified, by the quantity of activity cost driver used by each of the product.

B) ACTIVITY BASED MANAGEMENT

✓ ABM is used to indicate the cost management applications of ABC;

✓ In order to implement an ABM it is not necessary to perform all the stages required for an ABC system. The only stages required are:

i) identification of the major activities that take place in an organization;

Ii) assigning costs to pools for each activity;

Iii) determing the costs driver for each major activity.

✓ The final stage of assigning activity costs to products could be omitted.

B) ACTIVITY BASED MANAGEMENT

✓ ABM system views the business as a set of linked activities that add value to the customer. The goal is to satisfy customer needs by reducing the cost of activities;

✓ Business and organizations are managed on the basis of the activities that are performed in the organization.

✓ Based on the assumption that activities consume resources and originate costs.

B) ACTIVITY BASED MANAGEMENT

✓By managing activities costs will be managed in the long term;

✓ ABM provides information on:

i) what activities are performed;

ii) the cost of activities;

iii) why the activities are undertaken;

iv) how well they are performed.

B) ACTIVITY BASED MANAGEMENT

✓ Traditional budget and control reports analyse costs by types of expenses for each responsibility centre.

✓ ABM, in contrast, analyses costs by activities and provides management with information on why costs are incurred and the output from the activity (in terms of cost drivers).

B) ACTIVITY BASED MANAGEMENT

	(£000s)
Traditional analysis	
Salaries	320
Stationery	40
Travel	140
Telephone	40
Depreciation of equipment	40
	580
ABM analysis	
Preparing quotations	120
Receiving customers orders	190
Assessing the creditworhtyness of customers	100
Expediting	80
Resolving customer problems	90
	580

B) ACTIVITY BASED MANAGEMENT

✓ The major differences btw ABM approach and traditional management system is that ABM reports by activities whereas traditional system is by departments.

✓ In addition ABM reporting is by sub-activities whereas traditional reporting is by expense categories.

✓ ABM focuses on those activities with the highest cost: detailed studies are undertaken to find out whether they can be eliminated or performed more efficiently.

C) ABM: EXAMPLE 1

The sales division of the Delbard Manufacturing Company is treated as a profit centre. The company's products are transferred to the sales division at a price set by senior management. The sales director, the overall manager of the sales division, is held responsible for the profit generated by sales of the three products (Meldron, Neklar and Penrolf) into the three sales regions into which the country is divided.

The regions have different characteristics. Centruum is a large urban conurbation in which nearly 50% of the country's population live.

Big Strath is the hinterland to Centruum where most of the country's manufacturing is undertaken.

Glenland is a sparsely populated area in which most of the country's agricultural, mineral extraction, and energy generation activities take place.

Four of the division's fourteen salespersons are allocated to Centruum, four to Big Strath and six to Glenland.

The sales director has a feeling that the sales regions are not equally profitable for the division and has requested that an activity-based approach be used to assess the profitability of each of the regions.

C) ABM: EXAMPLE 1

Product data	**Meldron**	**Neklar**	**Penrolf**
Selling price	£15	£12	£18
Transfer price	£12	£7.50	£16.50
Average unit weight	4.5kg	6kg	9kg

Sales volumes	**Meldron**	**Neklar**	**Penrolf**
Centruum	292,500	157,500	54,000
Big Strath	67,500	135,000	81,000
Glenland	90,000	67,500	135,000

Number of sales orders processed	**Meldron**	**Neklar**	**Penrolf**
Centruum	225	150	75
Big Strath	120	225	180
Glenland	270	180	375

Cost Pools (£'000)	
Selling	420
Advertising	225
Warehousing and Distribution	675
Order and Invoice Administration	555

C) ABM: EXAMPLE 1

CONTRIBUTION

	Centruum	Big Strath	Glenland
Contribution	Meldrum 292 500*3 Neklar 157 500*4,5 Penrolf 54 000* 1,5 **= £1667,25**	Meldrum 67 500*3 Neklar 135 000*4,5 Penrolf 81 000* 1,5 **= £931,50**	Meldrum 90 000*3 Neklar 67 500*4,5 Penrolf 135 000* 1,5 **= £776,25**

Contribution = selling price – transfer price
Meldrum = 15-12=3
Neklar = 12-7,50=4,5
Penrolf = 18-16,50=1,5

C) ABM: EXAMPLE 1

SELLING COST

	Centruum	Big Strath	Glenland
Selling cost	4/14*420 **= £120**	4/14*420 **= £120**	6/14*420 **= £180**

NB:
It is the sales director's opinion that Selling cost is related to the number of salespersons.

Total number of salespersons = 14
Centruum = 4
Big Strath = 4
Glenland = 6

Total cost for selling cost pool = 420

C) ABM: EXAMPLE 1

ADVERTISING COST

	Centruum	Big Strath	Glenland
Sales revenue	Meldrum 292 500*15 Neklar 157 500*12 Penrolf 54 000*18 = 7 249.5	Meldrum 67 500*15 Neklar 135 000*12 Penrolf 81 000*18 = 4 090,5	Meldrum 90 000*15 Neklar 67 500*12 Penrolf 135 000*18 = 4 590
Share of advertising cost	(7249,5/15930)*225 **= £102.4**	(4090,5/15930)*225 **= £57,8**	(4590/15930)*225 **= £64,8**

NB:
It is the sales director's opinion that Advertising cost is related to the value of sales.

Total revenue = 15 930,00
Total advertising cost pool = 225,00

C) ABM: EXAMPLE 1

WARHOUSING AND DISTRIBUTION COST

	Centruum	Big Strath	Glenland
Weight	Meldrum 292 500*4.5 Neklar 157 500*6 Penrolf 54 000*9 = 2 747,25	Meldrum 67 500*4,5 Neklar 135 000*6 Penrolf 81 000*9 = 1 842,75	Meldrum 90 000*4,5 Neklar 67 500*6 Penrolf 135 000*9 = 2 025
Share of W & D cost	(2747,25/6615)*675 **= £280,3**	(1842,75/6615)*675 **= £188,0**	(2025/6615)*675 **= £206,7**

NB:
It is the sales director's opinion that Warehousing & Distribution cost is related to the weight of products sold.

Total weight = 6 615,00
Total W & D cost pool = 675,00

C) ABM: EXAMPLE 1

Order and invoice administration

	Centruum	Big Strath	Glenland
No of orders	Meldrum 225 Neklar 150 Penrolf 75 = 450	Meldrum 120 Neklar 225 Penrolf 180 = 525	Meldrum 270 Neklar 180 Penrolf 375 = 825
Share of O & I cost	(450/1800)*555 **= 138,8**	(525/1800)*555 **= 161,9**	(825/1800)*555 **= 254.3**

NB:
It is the sales director's opinion that Order & Invoice Administration cost is related to the number of sales orders processed.

Total no of orders = 1 800
Total O & I adm. cost pool = 555

C) ABM: EXAMPLE 1

(£000)	Centruum	Big Strath	Glenland	Total
Contribution	1,667.25	931.5	776.25	
Selling Cost	120	120	180	420
Advertising	102.4	57.8	64.8	225
Warehouse & Distribution	280.3	188	206.7	675
Order & Invoice Administration	138.8	161.9	254.3	555
Profit	**1025.75**	**403.8**	**70.45**	

C) ABM: EXAMPLE 1

With this information, what are the courses of action available for the sales division?

- 6 salesmen in Glenland, is that optimal use of sales resources?
  - Contribution/salesman?
  - Profit/salesman
- No of orders – look over the order routines
  - Average revenue/order and region
- Product mix/Product contribution
  - Average revenue/order, product and region

C) ABM: EXAMPLE 2

Budget data for a three product manufacturing company

	Product X	Product Y	Product Z
Sales volume - units	50,000	20,000	5,000
No of bought-in components per unit	4	4	12
No of manufactured parts per unit	2	2	10
No of production orders per year	10	10	46
No of despatches per year	10	20	46
Assembly - direct labour hours per unit	1	1	2
Machining – machine hours per unit	0.5	1	1
Direct material cost per unit	£20	£15	£10

Direct labour wage rate is £5/hour

C) ABM: EXAMPLE 2

Budget data for a three product manufacturing company

Overhead costs :

Assembly department - Dir labour related costs	£100,000
Machining department - operators wages and related	£50,000
Machine setters wages and related	£30,000
Machine power, maintenance and depreciation	£200,000
Material receiving and handling costs	£100,000
Despatch costs	£50,000
Production planning costs	£50,000
Admin and general costs	£100,000
Total	£680,000

Required : Calculate fully absorbed product costs for X, Y and Z using both traditional and ABC approaches.

C) ABM: EXAMPLE 2

Three product manufacturing company – Product costs using traditional method

Cost element	Allocation Basis	Product x	Product y	Product z
Direct labour	£5 per direct labour hour	5.00	5.00	10.00
Direct material	Given	20.00	15.00	10.00
Assembly overhead	£1.25 per DHL	1.25	1.25	2.50
Machining overhead	£5.60 per machine hour	2.80	5.60	5.60
Other overhead	£4.00 per unit	4.00	4.00	4.00
Total cost		33.05	30.85	32.10

C) ABM: EXAMPLE 2

Three product manufacturing company – Product costs using ABC method

Cost element	Cost driver	Product x	Product y	Product z
Direct labour	£5 per DLH	5.00	5.00	10.00
Direct material	Given	20.00	15.00	10.00
Assembly	£1.25 per DLH	1.25	1.25	2.50
Machining	£5.00 per MCH	2.50	5.00	5.00
Set-up	£60 per set-up	0.02	0.06	5.52
Material handling	£158.23/receipt	0.13	0.32	17.47
Despatch	£657.89/despatch	0.13	0.66	6.05
Production planning	£757.58/prod.order	0.15	0.38	6.97
Value added	10.2% of other o'h + direct labour	0.94	1.29	5.46
Total cost		30.12	28.96	68.97

ABB: INTRODUCTION

- Activity-based costing (ABC) reports and analyzes past and current costs.
- Activity-based budgeting (ABB) focuses on the budgeted cost of activities necessary to produce and sell products and services.

Activity Based Budgeting: example

- Maui Diving included the cost of setup activity in developing the overhead budget.
- In an ABB, the costs of the setup activity (as well as other activity areas) would be separately predicted.
- Assume that Maui Diving produces two products: Product A and Product B.

Activity-Based Budgeting - example

	Product A	Product B
Units produced:	880	200
Labour hours per unit	3	3
Budgeted setup hours	5	5

Total budgeted machine setup related cost is £ 25,920 per month.

Activity-Based Budgeting-example

- Total budgeted labour hours are:

• Product A: 880 × 3		2,640
Product B: 200 × 3		600
Total	3,240	

- What is the allocation rate per labour hour?
- £25,920 ÷ 3,240 = £8.00

Activity-Based Budgeting-example

Total cost allocated to each product line:

Product A	Product B
£8.00 × 2,640=£21,120	
	£8.00 × 600 £4,800

Cost per unit: £ 8.00

Activity-Based Budgeting-example

- Under ABB, the number of setups is the cost driver.
- £25,920 budgeted machine setup cost ÷ 10 budgeted machine setup hours = £2,592 allocation rate per machine setup-hour.
- How much machine setup related costs are allocated to each product line?

Activity-Based Budgeting- example

Product A

£2,592 × 5 £12,960

Product B

£2,592 × 5 £12,960

Machine setup related cost per unit:

PROD A: £12,960 ÷ 880 £14.73

PROD B: £12,960 ÷ 200 £64.80