MANAGEMENT AND COST ACCOUNTING

- Target Costing
- Kaizen Costing

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Traditional management accounting and cost management

• Traditional management accounting control techniques tend to focus on cost containment whereas cost management concentrates on cost reduction.

• Traditional management accounting control techniques are routinely applied on a continuous basis whereas cost management tends to be applied on an *ad hoc* basis.

• Many of the approaches that fall within the area of cost management do not rely exclusively on accounting techniques

Strategic cost management

• Strategic cost management seeks to have a more profound effect on reducing organization's costs and to provide competitive advantage.

• Strategic cost management aims to provide a competitive advantage by creating better or equivalent customer satisfaction at a lower cost that that offered by competitors.

• Strategic cost management focuses on cost reduction and continuous improvement and changes in the ways that activities and processes are performed, rather that just focusing on the cost containment.

Strategic cost management

- Strategic cost management consists of those actions that are taken by managers to reduce costs, some of which are prioritized on the basis of information extracted from the accounting system
- Other actions, are undertaken without the use of accounting information

Targeting Costing

Target costing

- Target costing focuses on managing costs during a product/service's planning and design phase.
- Target costing originated in Japan in the early 1970s.
- Target costing was developed mainly by the Japanese auto industry, particularly Toyota

- Involves the following **stages**:
  1. Determine the target price which customers will be prepared to pay for the product.
  2. Deduct a target profit margin from the target price to determine the target cost.
  3. Estimate the actual cost of the product.
  4. If estimated actual cost exceeds the target cost investigate ways of driving down the actual cost to the target cost.

Target costing

- The first stage requires **market research** to determinate the customers' perceived value of the product, based on its functions and its attributes, its differentiation value relative to competing products and the price of competing products.
- The **target profit margin** depends on the planned return on the investment for the organizations as a whole and profit as a percentage of sales. This is then decomposed into a target profit for each product, which is subsequently deducted from the target price to give the target cost.
- The **target cost** is compared with the predicted actual cost. If the predicted actual cost is over the target cost-intensive efforts are made to close the gap so that the predicted cost equals the target cost.

Target costing – The team approach

- The **team members** include designers, engineers, purchasing, manufacturing, marketing and management accounting personnel.
- The **aim** of the team is to achieve the target cost specified for the product at the prescribed level of functionality and quality.
- The **discipline** of a team approach ensures that no particular group is able to impose their functional preferences.
- The **aim** during the product design process is to eliminate product functions that add cost but that do not increase the market price.
- In some organizations, representatives from the **suppliers** are included in the design team in order to obtain their expertise.

Target costing

The process involves:

1. Reverse engineering - Tear-down analysis
2. Value analysis and functional analysis
3. Process improvement
4. The support by an accurate costing system

1. Reverse engineering - Tear-down analysis

- It involves examining a **competitor's** product in order to identify opportunities for product improvement and/or cost reduction.
- The competitor's product is dismantled to identify its **functionality** and **design** + to provide insights about the processes that are used and the cost to make the product.
- The aim is to **benchmark** provisional product designs with the designs of competitors and to incorporate any observed relative advantages od the competitor's approach to product design.

2. Value analysis and functional analysis

- **Value analysis** is a systematic interdisciplinary examination of **factors** affecting the cost of a product or service in order to devise means of achieving the specified purpose at the required standard of quality and reliability at the target cost .
- The aim of value analysis is to achieve the assigned target cost by:
  - ✓ Identifying improved product **designs** that reduce the product's cost without sacrificing functionality
  - ✓ **Eliminating** unnecessary functions that increase the product's costs and for which customers are not prepared to pay extra

What is the function of the part or material? Can it be simplified? Is it necessary? Are all the features necessary? Can the parts be obtained or made at a lower cost? Can the use of material components be standardized?

2. Value analysis and functional analysis

- **Function analysis** involves decomposing the product into its many elements or attributes
- A price, or value, for each element is determined that reflects the amount the **customer** is prepared to pay
- To obtain this information, companies normally conduct **surveys** and **interviews** with customers
- The cost of each **function** of a product is compared with the benefits perceived by the customers
- If the cost of the function exceeds the benefit to the customer, then the function should be eliminate, modified to reduce its cost or enhanced in terms of its perceived value so that its value exceeds the cost

3. Process improvements

- Both reverse engineering and value analysis focus on product design to achieve **cost reductions**.
- The business processes that will be used to produce and market the product are also potential sources of the cost reduction.
- It is important that processes are intensively studied with the view to increasing their **efficiency** in order to achieve the needed cost reductions.

4. The support by an accurate costing system

- It is important that target costing is supported by an accurate cost systems
- Cost drivers should be established that are the significant determinants of the costs of the activities so that **cause-and-effect allocation** are used
- Cost systems have to use cost drivers that are the determinants of costs so that they will motivate designers to take actions that will reduce organizational costs

An example of target costing

Projected lifetime sales volume	300 000 units
Target selling price of the product	£800
Target profit margin (30% of selling price)	£240
Target cost (£800 – £240)	£560
Projected cost	£700

Analysis of the projected cost before and after the target costing:

	Before		After	
Manufacturing cost	£	£	£	£
Direct materials (bought in parts)	390		325	
Direct labour	100		80	
Direct machining costs	20		20	
Ordering and receiving	8		2	
Quality assurance	60		50	
Rework	15		6	
Engineering and design	10	603	8	491
Non-manufacturing costs				
Marketing	40		25	
Distribution	30		20	
After-sales service and warranty costs	27	97	19	64
Total cost		700		555

The example

- The Digital Electronics decide to introduce a new high-quality product (camcorder)
- The company has undertaken market research to determinate customers' perceived value of the product, based on its special features and a comparison with competitors' products
- Thanks to this analysis the company established a target selling price (£800) and projected lifetime time volume (300 000 units)
- The company has set a target profit margin of the 30% on the proposed selling price (£800x30%=£240) and this has been deducted from the target selling price to determinate the target cost (£800-£240 = £560)

The example – the process

- **Reverse engineering** is undertaken with the project team working closely with the design engineers. Their objective is to identify new designs that will carry out the same functions at a lower cost and also to eliminate any functions that are considered to be unnecessary. The process results in:
  - ✓ a simplified design
  - ✓ the reduction of the number of parts
  - ✓ the replacement of some customized parts with standards parts
- The outcome of the **reverse engineering** and **value analysis** activities is a significant reduction in the projected directed materials, labour, and rework cost
- BUT the projected cost still exceeds the target cost

The example – the process

- **Functional analysis:** the team identifies the different elements, functions and attributes of the camcorder and potential customers are interviewed to determinate the value that they place on each of the functions.
- This process indicate that several functions that have been included in the prototype are not valued by customers. The team decides to eliminate these functions
- The functional analysis drives a cost reduction in:
  - ✓ materials
  - ✓ direct labour assembly costs
- BUT the projected cost still exceeds the target cost

The example – the process

- **Redesigning the production** and **support processes:** by reducing the number of suppliers and working closely with a smaller number of suppliers
- The marketing, distribution, and customer after sale services relating to the product are subjected to an intensive review.
- The projected cost after undertaking all of the described activities is £555 compared with the target cost of £560.

The example – the cost analysis

- **DIRECT MATERIAL**
- (Before £390 – After £325)
- Reverse engineering and functional analysis have resulted in:
  - ✓ A reduction in the number of parts that are required to manufacture the camcorder
  - ✓ The elimination of most od unique parts and the use of standard parts that the company currently buys in large volumes (further cost savings)
- The OUTCOME of the redesign process is a direct cost material cost of £325.

The example – the cost analysis

- **DIRECT LABOUR COSTS**
- (Before £100 – After £80)
- Reverse engineering and functional analysis have resulted in:
  - ✓ The simplified product design reduces the assembly time, reducing the direct labour cost
- The OUTCOME of the redesign process is a direct labour cost of £80.

The example – the cost analysis

- **DIRECT MACHINE COSTS**
- (Before £20 – After £20)
- The estimated cost of acquiring, maintaining and operating the machinery along the product's life cycle is £6 million. Divided by the projected lifetime sales volume of the camera gives a cost of £20 (£6 million/300 000 units = £20)
- Reverse engineering and functional analysis have no results on this kind of cost because the machinery cost are committed and fixed and the target costing analysis does not change the predicted lifetime volume

The example – the cost analysis

- **ORDERING AND RECEVING COSTS**
- (Before £8 – After £2)
- **Before**: 80 parts were included in the product specification. The estimated number of orders placed for each part along the product's life cycle is 150 and the predicted cost per order for the order and receiving activities is £200. The lifetime cost is £8 (80parts x 150 orders x £200 = £2,400.000)
  (£2,400,000 / 300,000 units = £8)

- **After**: the simplified design and the parts standardization have enabled the reduction of the number of parts, of orders, and ordering costs:
- Parts included pass from 80 to 40
- The number of orders pass from 150 to 100
- The cost per order pass from £200 to £150
  (40parts x 100 orders x £150 = £ 600,000)
  (£600,000/300,000 units = £2)
- The OUTCOME of the redesign process is a ordering and receiving cost of £2

The example – the cost analysis

- **QUALITY ASSURANCE** (inspecting and testing the camcorders)
- (Before £60 – After £50)

- Before: £ 60 = 12 hours at £5 per hour

- After: the simplified design means that camcorder will be easier to test resulting in revised cost of £50
  (10hours x 5per hour)

- The OUTCOME of the redesign process is a quality assurance cost of £50

The example – the cost analysis

- **REWORK COST**
- (Before £15 – After £6)

- Before: £15 represents the average rework costs per camcorder; the 10% of the output will require rework (300,000x10%=30,000) Rework estimated cost was £150 per reworked camcorder
- (£150 x 30,000 = 4.5 millions) (4.5 millions/300,000 = £15)
- After: the simplified design means to reduce the average rework cost, that now is 5% (300,000 x 5% = 15,000) the rework cost passes from £150 to £120 (£120 x 15,000 = 1.8 millions (1.8 millions/300,000 = £6)

- The OUTCOME of the redesign process is a rework cost of £6

The example – the cost analysis

- **ENGINEERING and DESIGN COSTS**
- (Before £10 – After £8)

- Before: £3 millions in total (3,000,000/300,000 = £10)

- After: the simplified design and reduced number of parts enable a cost reduction of 20% (3,000,000-20%=2.4 millions) (2,4 millions/300,000 = £8)

- The OUTCOME of the redesign process is a engineering and design cost of £8

The example – the cost analysis

- **NON-MANUFACTURING COSTS**
- (Before £97 – After £64)

- After: the process improvement have also enhance also marketing, distribution and after-sales services costs have been decreased
- The simplified product design and the use of fewer parts has contributed to the reduction to the after-sales warranty costs

- The OUTCOME of the redesign process is a Non-manufacturing costs of 64

Kaizen

今井正明

Kaizen Costing

It is Japanese term for making continuous improvement to processes through small incremental amounts (rather that major innovation)

KAI	ZEN
To modify, to change better	Think, make good, make

KAIZEN

Make it easier by studying it, and making the improvement through elimination of waste.

Kaizen Costing

Kaizen is

- Ongoing improvement involves everyone
  - ❖Top management
  - ❖Managers
  - ❖Workers
- A culture of supporting quality improvement that is more important than the use of any specific tools

Kaizen Culture

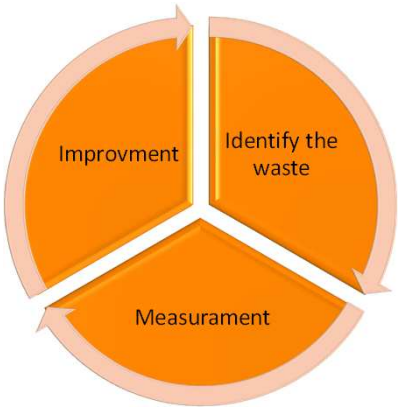
- Kaizen costing relies strongly on **employee empowerment**
- Employees are assumed to have **superior knowledge** about how to improve processes because they are closest to the manufacturing processes and customers and are likely to have greater insights into how costs can be reduced
- **Workers** have the **responsibility** to improve processes and reduce costs

Kaizen Culture

- A corporate culture in which **everyone** can freely admit these problems
- A systematic and **collaborative** approach to cross-functional problem-solving
  - ✓ Internal, Next process is customer
  - ✓ External, suppliers
- A customer-driven strategy for improvement: quality, cost, schedule, and delivery requirements
- Emphasis on **process**
  - ✓ Result is not the only thing and everything
  - ✓ Support and acknowledge people's process-oriented efforts for improvement

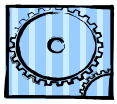
Kind of waste

- Overproduction
- Delays (waiting time)
- Transportation
- Process
- Inventories
- Motions
- Defective products
- Unemployed resources
- Misused resources



Some examples of waste

Walking



Waiting on machine cycle

Unnecessary stock on hand

Generating useless reports

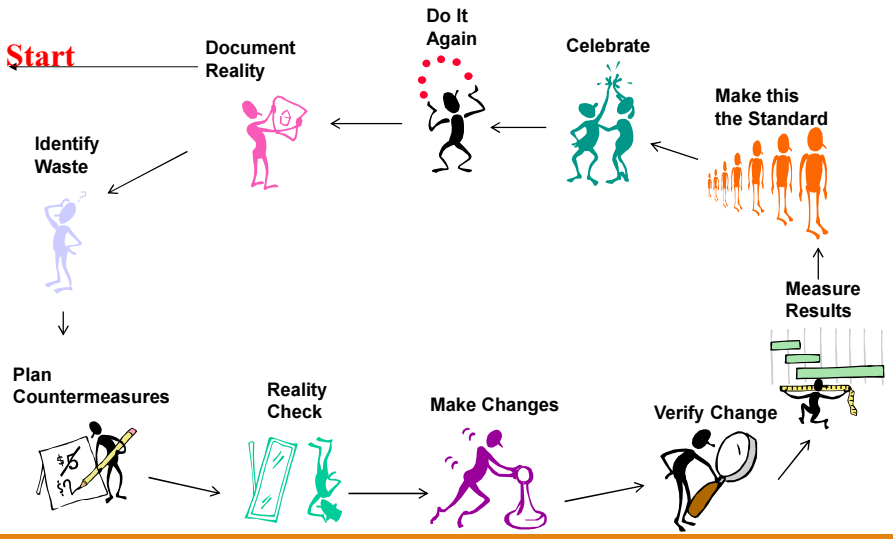
Transporting parts

Unnecessary motion

Some elements of waste

- **Transportation** – Transporting farther than necessary or temporarily locating, filing, stacking and moving parts (people, paper, information) is waste.
- **Correction** - Redo an activity because of error
- **Overproduction** - Generating excess products or information, or generating information or paper too soon in a process is waste
- **Motion** - Unnecessary work movements are a form of waste
- **Waiting** - Waiting for people, product and information is waste, because it stops work
- **Inventory** - Too much of anything is waste.
- **Processing** - this is waste in the process itself (redundant activities)

Stages of the Kaizen



Kaizen Costing vs Target Costing

- **Kaizen costing** is applied during manufacturing stage whereas **target costing** is during planning stage.
- **Kaizen costing** focuses on production processes whereas **target costing** focuses on the product.
- **Kaizen costing** aims to reduce costs of processes by a pre-specified amount relying on employee empowerment.

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Source

Part Five:
Cost management and strategic management accounting
Chapter Twenty-one:
Strategic cost management
+
"Pricing non-customized products/services using target costing" Chapter 10 - p. 237