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CPA Hong Kong Institute of Certified Public Accountants 香港會計師公會

HKICPA QP
Module B Corporate Financing

Module Preparation Seminar
(for Dec 2018 Exam Session)

Lecturer: Anson Yu

AGENDA

1
- Cost Measurement and Analysis in service and manufacturing environment
- Treasury management
- Dividend policy

2
- How to Pass

3
- Consultation

MASTER GUIDE

Module B: CORPORATE FINANCING

Lecturer: Anson Yu

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Master Guide

Chapter 4: Management Reporting

Cost concept (LP 4.1.1, p.125)

Direct cost - cost that can be directly identified to an item (e.g. direct material, direct labour)
Indirect cost - cannot be directly identified to an item (e.g. overheads)

Absorption costing – Overhead costs are included in the full cost
Marginal costing – Only direct cost (marginal cost) are included (Relevant costing)

Activity based costing - ABC (LP 4.2, p.126)

ABC is a costing method which collect costs on the basis on the underlying nature and extent of the activities, and assign the cost based on those activities.

What is activity (LP 4.2.1.1, p.126)
Activity is the major task performed with a specific purpose in the organization. (e.g. inspecting or storing goods). The costs of these activities are gathered to become the cost of such products and services.

What are resources? (LP 4.2.1.2, p.126)
Resources are consumed during the activity. (e.g. labour, rent, supplier, maintenance)

What is an activity driver and a resource driver?
Activity driver is what we used to trace the consumption of activities (e.g. processing of order)
Resource driver is what we used to measure how an activity driver affects the amount of resources consumed (e.g. number of orders)

What is a cost driver? (LP 4.2.1.4, p.126)
Cost driver (the activities that cause costs) has a positive relationship with the cost of a product, the cost will increase if the cost drive increase due to increase in cost allocation. (e.g. Direct labour hours)

What is a cost pool? (LP 4.2.1.5, p.127)
It represents an accumulations of expenditure under a category which describe a particular activity.

What is cost object (LP 4.2.1.6, p.127)
It is something which cost management would like to know for decision making. (e.g. a product)

Traditional costing method vs ABC [tag it]
The traditional costing method has one or a few **indirect** cost pools, using machine hours or man hours as the allocation base, irrespective of the degree of complexity in the operation. Where ABC has multiple indirect cost pools.

ABC attempts to use as many cost drivers as possible as the allocation base for indirect cost, where traditional costing does not.

ABC has many indirect costs as direct costs while traditional costing has more indirect costs.

Steps to implement ABC:

1. Conduct interviews to determine appropriate activity centers and cost drivers
2. Find out the direct cost of the product
- Direct material + Direct labour
3. Establish the interrelationship between key activities and the resources consumed
4. Construct a process map to illustrate these relationship
5. Put costs under various cost pools and identify the cost of each activity and the related cost driver
6. Assign cost to products and services on the basis of mix of activities needed to produce each product or services
- E.g. Split overheads between each product type (if any) and then find a cost per unit of activity
  - Step 1: Percentage of cost related to the activity x total overhead = overhead related to the activity
  - Step 2: overhead related to the activity/level of driver activity = cost per cost driver
7. Allocate the overheads per cost drivers, add a column "total cost" to tie the figures **(for your own reference only)**
- Step 1: List down the activity volume of each product
- Step 2: Allocated cost = activity volume x cost driver
- Step 3: Divided the total overhead cost allocated to the product by the number of product produced, which we will have the cost per unit
8. Add back the direct cost (e.g. direct material or direct labour) to the equation and we will have the total cost per unit **(for your own reference only)**
9. Write or purchase software to carry out the mechanism of ABC

Advantages of ABC:

- ABC provides **useful information about the activities** that drive overhead costs. Traditional absorption costing and marginal costing do not do this.
- ABC therefore provides information that could be **relevant to long-term cost control and long-term product selection or product pricing**.
- ABC can **provide the basis** for a management information system to manage and control overhead costs.
- With ABC, overheads are charged to products on the basis of the activities that are required to provide the product: Each product should therefore be charged with a '**fair share**' of **overhead cost** that represents the activities that go into making and selling it.
- It might be argued that full product costs obtained with ABC are more 'realistic', although it can also be argued that full product cost information is actually of little practical use or meaning for management.
- There is also an argument that in the long run, **all overhead costs are variable** (even though they are fixed in the short-term). Measuring costs with ABC might therefore provide management with **useful information for controlling activities and long-term costs**.

Disadvantages of ABC

- The analysis of costs in an ABC system **may be based on unreliable data and weak assumptions**. In particular, ABC systems may be based on inappropriate activities and cost pools, and incorrect assumptions about cost drivers.
- ABC provides an **analysis of historical costs**. Decision-making by management **should be based on expectations of future cash flows**. It is incorrect to assume that there is a causal relationship between a cost diver and an activity cost, so that increasing or reducing the activity will result in higher or lower activity costs.
- In some cases, ABC may be little more than a **sophisticated** absorption costing system.
- Within ABC systems, there is still a **large amount of overhead cost apportionment**. General overhead costs such as rental costs, insurance costs and heating and lighting costs may be apportioned between cost pools. This reduces the causal link between the cost driver and the activity cost.
- Many ABC systems are **based on just a small number of cost pools and cost drivers**. More complex systems are **difficult to justify**, on grounds of cost.

- **Many activities and cost pools** have **more than one cost driver**. Identifying the most suitable cost driver for a cost pool/activity is often **difficult**.
- **Traditional cost accounting systems** may be **more appropriate for the purpose of inventory valuation and financial reporting**.
- It might be a **costly system to design and use**. The costs might not justify the benefits. It must be remembered that full product costing is of little relevance for management decision-making.
- There maybe inadequate human resources to undertake the research and analysis that is required and more specialist staf may need to be hired or existing staff may need to be trained.
- Adequate computer software may not be available to support the complexities of ABC system and further investment may be required
- Administration of ABC system may result in a significant level of additional costs and such costs may overweight the system's perceived benefits
- It does not address profitability

Refer to Q4.1, Q4.2, Q4.3-1 for practice question

Time driven activity based costing (TDABC) (LP 4.2.4, p.133)

Reasons for development of TDABC

- Implementation of an ABC system is time-consuming and costly
- Data is subjective and difficult to validate
- Most ABC do not cover all the costs and activities in a company, thus an incomplete view of profitability is resulted
- Updating ABC in changing business environment is difficult and costly
- Reported cost will be wrong if ABC ignores the unused capacity

Therefore, TDABC with a departmental approach is developed.

Example - LP p.133 (Extract)

The customer service department of Lim Manufacturing performs the following activities and incurs the associated costs in a three-month period:

Activity	*Time spent* %	*Assigned cost* $	*Cost driver quantity*	*Cost driver rate* $
Process customer orders	70	396,900	49,000	8.10 per order
Handle customer enquiries	10	56,700	1,400	40.50 per enquiry
Perform credit check	20	113,400	2,500	45.36 per credit check
Total	100	567,000		

The percentage of time spent is obtained from employee estimates of the average time they spend performing each activity. As a result, a customer enquiry is charged at $40.50 whether it takes 10 minutes to resolve or one hour.

If Lim manufacturing implement TDABC, it only requires two items
- the cost of the capacity supplied
- the practical capacity of the resource supplied

The cost of the capacity supplied in the three-month period is $567,000

To determine the capacity of the customer service department for the period, it is necessary to determine how much time is spent working by all employees. Lim Manufacturing determines that each employee works on average 7.5 hours per day and for 20 days each month, hence each employee will work for around 450 hours in each three-month period.

To be more precise this can be converted to minutes by multiplying by 60 – 27,000 minutes. Not all this time is spent working however. Employees are entitled to 75 minutes each day for breaks, training and education. This brings the practical capacity of one employee to around 22,500 minutes in each three-month period. As the customer service department employs 28 employees, its practical capacity in the period is 630,000 minutes (22,500 minutes x 28 employees).

Now we have to calculate the capacity cost rate:

$$\text{Capacity cost rate} = \frac{Cost\ of\ capacity\ supplied}{Practical\ capacity\ of\ resource\ supplied}$$

$$= \frac{\$567{,}000}{630{,}000\ minutes} = \$0.9 \text{ per minute}$$

To obtain a TDABC cost driver rate, employees need to estimate the time taken to perform each activity rather than the percentage of their time taken performing each activity.

Employees at Lim Manufacturing provide the following estimates of their time:
Processing customer orders – 8 minutes
Handling customer enquiries – 44 minutes
Performing credit checks – 50 minutes

It is now possible to calculate TDABC cost driver rates for the three activities in the customer service department.

Activity	*Unit time* Minutes	*TDABC cost driver Rate (@$0.90 per minute)* $
Process customer order	8	7.20
Handle customer enquiry	44	39.60
Perform credit check	50	45.00

We then allocate cost under TDABC method:

Customer service department end of period TDABC report

Activity	*Quantity*	*Unit time*	*Total time*	*Unit cost* $	*Total assigned cost* $
Process customer orders	49,000	8	392,000	7.20	352,800
Handle customer enquiries	1,400	44	61,600	39.60	55,440
Perform credit checks	2,500	50	125,000	45.00	112,500
Used capacity			578,600		520,740
Unused capacity (8.2%)			51,400		46,260
Total			630,000		567,000

The end of period TDABC reports reveals an under-allocation of costs for the customer service department of $46,260. Traditional ABC period end reporting, with its reliance on percentage estimates, hides the existence and costs of unused capacity. In addition, the TDABC report can provide insights into the future. By revealing the amount and cost of unused capacity, management can make resource allocation decisions and plan for the future. In addition, the TDABC model is also easier to update as changes occur, as the time taken to perform activities need only be updated rather than the traditional ABC model which would require an entire estimate of percentages to be performed.

Advantage of TDABC (LP 4.2.5, p.135)

- It is easier and faster to build an accurate cost model
- It integrates well with existing ERP and customer relationship management systems
- It drives costs to transactions and orders using time as the cost-accumulating feature of performing activities
- It can be used in any industry and with any level of complexity with regard to customers, products, channels, segments and processes.

Cost-volume-profit (CVP) analysis (LP 4.3, p.135) – [Always examined]

- Analysis of how costs and profits change with increase or decrease in sales volume
- Based on simple **marginal costing** principles

Management will make the following decision by using CVP:

- The breakeven point
- The amount by which actual sales can fall below anticipated sales, without a loss being incurred

Methods for calculating the break-even point [Key words: BEP]

The break-even point is when total revenues and total costs are equal, that is, there is no profit but also no loss made.

Profit = Total sales revenue – total variable cost – fixed costs
P = Q(S – V) – F

Rearranging the formula, we have:
P + F = Q (S – V)

Assume Profit = 0 for breakeven, we will have the contribution margin (total sales – variable costs) equals to the fixed costs

Q(S – V) = F

Where Q is equal to breakeven quantity

Underlying assumptions in calculating break even point

- Revenue and variable cost per unit of service rendered are constant / contribution margin is linear
- Total fixed cost is constant
- Labour productivity, production techonology, and market conditions will not change during the time period

Contribution/sales ratio (C/S ratio) LP (4.3.1.1, p.136)

$\frac{(S-V)}{S} \; x \; S$ = P+F

Where $\frac{(S-V)}{S}$ is the contribution/sales ratio and S is equal to breakeven sales revenue

Example of CVP analysis

Expected sales 10,000 units at $8 = $80,000
Variable cost $5 per unit
Fixed costs $21,000

Analysis
The contribution per unit is $(8 - 5) = $3
Contribution required to break even = Fixed costs = $21,000
Breakeven point (BEP) = $21,000 ÷ $3 per unit = 7,000 units
In sales revenue, BEP = (7,000 x $8) = $56,000

Another way of reaching the same conclusion is to use the C/S ratio.
C/S ratio = $3/$8 = 0.375
Contribution required to break even (= fixed costs) = $21,000
Breakeven sales revenue = $21,000/0.375 = $56,000

Target profit (LP p.137)

From the formula above, we have

P + F = Q (S – V)

And for the contribution/sales ratio, we have
$\frac{(S-V)}{S}\ x\ S$ = P + F

If the question asked for sales required to achieve the target profit, we just simply input the profit required in P.

Refer to Q4.3-3, Q4.4 for practice question

Selling price decisions and CVP (LP 4.3.2, p.138)
- Selling price increase → sales volume decrease
- Price reduction → not increase total contribution and profit → remain unchange

Example

A company operates with a contribution/sales ratio of 60%. Annual fixed costs are $900,000 and the company makes an annual profit of $300,000. It has been estimated that:
If sales prices are increased by 20%, sales volume would fall by 10%, and

Required
Would a change in sales prices result in higher profit?

Solution
Currently total annual contribution = $900,000 + $300,000 = $1,200,000. C/S ratio = 0.60.
Therefore annual sales are currently $1,200,000/0.60 = $2,000,000.

If the sales price is increased by 20%, the C/S ratio would change as follows:

	Current	After price rise
Sales price	100	120
Variable cost	40	40
Contribution	60	80

The new C/S ratio will be 80/120 or 2/3.

Sales volume will fall by 10% so revenue will fall from $2,000,000 to $1,800,000. Sales prices will rise by 20% so revenue will rise from $1,800,000 to $2,160,000.

Total contribution will be $2,160,000 x 2/3 = $1,440,000.This means that total contribution rises; therefore a price increase by 20% would increase total contribution and profit would increase from $300,000 to $540,000.

Anson's tips for CVP questions:

1. Breakeven point
   a. Find the contribution margin → Selling price – variable cost
   b. BEP = FC/CM
   c. Beware of units (Its safer to write down the units to make sure you are on the right track)
   d. When the question is asking "what is the minimum" → usually BEP

Pricing (LP 4.4.1, p.139)

Product pricing is one of the most important and complex decisions facing management. This is because the saleability of individual products or services is directly affected by pricing decisions.

Cost-plus pricing (LP 4.4.2, p.139)

Price = cost + (markup percentage x cost)

Absorption cost pricing (LP 4.4.3, p.140)

Cost = Variable cost + fixed cost (both direct and allocated)

Advantage
- Provides a price which is justifiable and equitable by all parties

Disadvantage
- Inconsistent with CVP methodology (as fixed cost is included)

Example of absorption pricing – 1

A Ltd is in the process of pricing two products Alpha and Beta. These products are manufactured by the same workforce. For the year, 50,000 direct labour hours are budgeted. The expected fixed costs are $100,000 and it is expected that the department will operate at full capacity. Variable costs per unit are as follows:

	Alpha	*Beta*
	$	$
Materials	5	5
Labour	2 (1 hour)	6 (3 hours)
Expenses	3 (1 machine hour)	3 (1 machine hour)
	10	14

Sales demand is estimated roughly to be 5,000 Alphas and 15,000 Betas.

What unit selling prices will be needed to give a profit of 20% on full cost if overheads are absorbed first on a direct labour hour basis, and second on a machine hour basis?

Suggested solutions

Direct labour hour basis

$$\frac{\text{Budgeted fixed costs}}{\text{Budgeted labour hours}} \quad \frac{100{,}000}{(5{,}000 \times 1 + 15{,}000 \times 3)} = \$2$$

Absorption rate of $2 per direct labour hour

	Alpha $	*Beta* $
Variable costs	10.00	14.00
Overheads absorbed	2.00	6.00
Full costs	12.00	20.00
Profit (20%)	2.40	4.00
Sales price	14.40	24.00

The total budgeted profit would be $72,000 ($12,000 + $60,000)

Machine hour basis

$$\frac{\text{Budgeted fixed costs}}{\text{Budgeted machine hours}} \quad \frac{100{,}000}{(5{,}000 \times 1 + 15{,}000 \times 1)} = \$5$$

Absorption rate of $5 per machine hour

	Alpha $	*Beta* $
Variable costs	10.00	14.00
Overheads absorbed	5.00	5.00
Full costs	15.00	19.00
Profit (20%)	3.00	3.80
Sales price	18.00	22.80

The total budgeted profit is $72,000 ($15,000 + $57,000).

The different basis for charging overheads between the products results in a different price for both Alpha (increase of $3.60 per unit or 25%) and Beta (decrease of $1.20 per unit or 5%). It is questionable whether the expected sales demand for the products will be the same at each sales price, and the estimates of sales volume may therefore be unreliable because they ignore price.

Variable cost pricing (LP 4.4.5, p.143)
Variable cost pricing models remove the need for the allocation of fixed costs to individual product lines.

Disadvantage: The selling price may be set below the level required to recover the fixed cost.

Minimum pricing (LP 4.4.6, p.144)
A minimum price is the minimum selling price for an item that must be charged in order to achieve a stated target. The target may be a minimum profit on the sale, or it may be a price that will leave total profit unchanged.

Minimum price is calculated from the incremental and relevant costs of making the sale.

The relevant cost of an item or action is the **increase in future net cash outflows** that will occur as a consequence of making or selling the product, or performing the action.

Total quality cost management (TQM) (LP 4.5, p.146)

To create an environment with zero defect production, so there is no allowance for wastages and idle time.

There are four main types of costs associated with quality:

(1) **Prevention costs**
- incurred in preventing poor quality products/services from being produced
- trade-off between prevention costs and other costs of quality.

Examples of prevention costs: quality engineering, quality training for staff, quality circles, supplier evaluation and selection, quality audits, field trials, design reviews, customer surveys.

(2) **Appraisal costs**
- incurred in determining whether poor quality and defects exist

Examples of appraisal costs: inspection of raw materials, supervising appraisal activities, inspection and test equipment, sampling and testing products and processes, product quality audit.

(3) **Internal failure costs**
- incurred because there is a failure to produce acceptable quality which is found before delivery to the customer

Examples of internal failure costs: re-work, scrap, downtime, design changes

(4) **External failure costs**
- incurred because faulty products have reached customers

Examples of external failure costs: sales returns and allowances, warranty repairs, replacements, lost sales.

Advantages of TQM
- TQM saves money by eliminating reworking of finished goods that uses more resources and time
- Training provided to workers increases their motivation because of increase in employability
- Workers are aware of the end result of their jobs helps them perform their job more effectively by keeping the required result in mind

Disadvantage of TQM

- TQM has unrealistic policy of 'doing things right' which is not possible as human being is not perfect
- Quality checks at each stage may increase the length of production process resulting in more cost
- TQM needs cultural changes like line of communication, production process and so on. Employs do not accept these changes as they were get familiar with existing work processes and may not like to learn new way of doing thing

Target costing (LP 4.6, p.148)

The company will set a target cost by subtracting a desired profit margin from a competitive market price, the crucial elements to consider are market price and the cost

Target costing and the product life cycle (LP4.6.2, p.149)

Target costing is most useful at the product design stage, because this is when substantial cost savings can be achieved by altering the product design or production processes and methods.

Why companies are using target costing?

Certain enterprises have less control over price due to competitive market forces of demand and supply, so they need to place efforts on costs to achieve satisfactory profit.

Cost reduction is normally in the design stage which has a greater chance to reduce costs by apply target costing

Difference between traditional costing and target costing (LP 4.6.5, p151)

In traditional costing, the cost of the item is established first, then set a selling price, with a resulting profit or loss.
In target costing, we focus on:

- **Price-led** costing
- **Customers**. Customer requirements for quality, cost and time are incorporated into product and process decisions. The value of product features to the customers must be greater than the cost of providing them
- **Design**. Cost control is emphasised at the design stage so any engineering changes must happen before production starts
- **Faster time to market**. The early external focus enables the business to get the process **right first time** and avoids the need to go back and change aspects of the design and/or production process. This then reduces the time taken to get a product to the market.

Steps to attain the target cost

1. Planning stage- The target cost is the difference between the target selling price and the target profit.

Target cost = Target selling price – target profit

Compile an estimated bill of material costs for the products based on the anticipated design specification and current cost levels, and then we can have the target cost gap.

Target cost gap = Estimated cost – target cost

Advantage of target costing

- Positive and proactive approach to cost management, i.e. to consider cost at the design stage to avoid unnecessary spending in material, logistics, and production costs.
- Since the selling price is crucial, the project team has to think through the customers' needs and avoid unnecessary functions to be provided to customers.

Disadvantage of target costing

- The prerequisite for the effective implementation of target costing is the development of detailed cost data for analysis purposes which will require precise cost calculation subject to dynamic market influences.
- Multi-departmental cooperation is crucial for the successful implementation of target costing which also requires managing departments' willingness to cooperate and their commitment.
- The process may be long and detailed, therefore, it requires lot of meetings for coordination, and conflicting meeting schedules may also affect progress.

Refer to Q4.5 for practice question

Example

Company X, a consumer electronics manufacturer, wishes to ascertain the price it should charge for producing a shipment of 2,500 drones to meet an order from a large online retailer. It has established the following information.

The drones could be manufactured in one of X's existing manufacturing facilities in Guangzhou by operating a night shift. The rent for the facility is $200,000 per annum and current utilities and other variable property costs are half of this figure. It is estimated that the order will take eight weeks to fulfil. Operating the production facility overnight is expected to increase utilities and other variable costs by 120% due to the additional lighting and power requirement. Producing the drones to meet this order is expected to be achieved mainly by using additional temporary staff who will be paid $13,000 per week in total. However, existing staff will need to be used for certain key tasks, these 5 individuals are each paid $130 per hour and will need to work an additional 20 hours of overtime per week, overtime is paid at one and a half times the normal hourly rate.

Management believe that it will be possible to use a batch of micro-motors to meet production which were purchased for $27,000 for another order which fell through.

Management had planned to sell these on at a loss of $5,500. Additional components are anticipated to cost $42,000. Fixed central overheads are absorbed on the basis of hours of operation for each facility, by operating a night shift the Guangzhou facility would absorb an additional $16,000 of fixed overheads.

Establish the price that X should charge for the order if it is to meet a targeted 20% profit margin?

Description	Amount	Workings
	$	
Utilities etc.	18,462	100,000 × 8/52 × 120%
Additional staff	104,000	13,000 × 8
Overtime	156,000	130 × 20 × 5 × 8 × 1.5
Micro-motors	21,500	27,000 – 5,500
Other components	42,000	
Total relevant costs	341,962	
Required margin	85,491	341,962 × 20/80
Minimum total price	427,453	

The fixed central overhead absorbed does not represent an additional cash outflow dependent on the production decision, nor does the rental cost. The relevant cost of the micro-motors is not the price paid, but what they could be sold on for.

Value engineering (LP 4.6.7, p.153)
Value engineering is a systematic evaluation of all aspects of the business functions, with objectives to reduce costs while satisfying customer needs.

Value engineering is important as it prevents cost incurrence and cost lock-in.

It is important to recognise lock-in cost at the early stage of designing a product. It is difficult to alter cost or reduce cost once the costs are locked-in after the product is designed (for example, scrap cost, wastage and rectification cost incurred in manufacturing is difficult to reduce locked-in to a faulty design).

The aim of value engineering is to maximise use and esteem values while reducing costs. For example, if you are selling perfume, the design of its packaging is important. The perfume could be held in a plain glass (or plastic) bottle, and although that would not damage the use value of the product, it would damage the esteem value. The company would be unwise to try to reduce costs by economising too much on packaging. Similarly, if a company is trying to reduce the costs of manufacturing a car, there might be many components that could be satisfactorily replaced by cheaper or simpler ones without damaging either use or esteem values. However, there will be some components that are vital to use value (perhaps elements of the suspension system) and others which endow the product with esteem value (the quality of the paint and the upholstery).

Target costing – Implementation (LP 4.6.8, p.153)
- Develop a product that satisfies the needs of customers
- Choose target price based on customer's perceived value and target operating income
- Derive the target cost by subtracting target operating income from target price
- Perform value engineering

Life cycle costing (LP4.7, p.153) [Very important]

Tracks and accumulates costs and revenues attributable to each product over the entire product life cycle.

Difference between traditional costing and life cycle costing (LP 4.7.1, p154)
Traditional cost
- based on the financial accounting year and tend to dissect a product's life cycle into a series of 12-month periods.
- do not accumulate costs over a product's entire life cycle and do not assess a product's profitability over its entire life. Instead they do it on a periodic basis.
- do not tend to relate research and development costs to the products that caused them. Instead they write off these costs as a periodic expense on an annual basis against the revenue generated by existing products. This makes the existing products seem less profitable than they really are.

Life cycle costing
- tracks and accumulates actual costs and revenues attributable to each product over the entire product life cycle.
- the total profitability and visibility of the costs of any given product can be determined.
- more accurate feedback information is available on the organisation's success or failure in developing new products.

The product life cycle (LP 4.7.2, p.154)

1. **Development**. The product has a research and development stage where costs are incurred but no revenue is generated. Usually high level of setup costs like R&D, product design and building of production facilities.
2. **Introduction**. The product is introduced to the market. Potential customers will be unaware of the product or service, and the organisation may have to spend further on advertising to bring the product or service to the attention of the market. Usually high level of marketing and promotion costs.
3. **Growth**. The product gains a bigger market as demand builds up. Sales revenues increase and the product begins to make a profit. Usually high level of marketing and promotion costs.
4. **Maturity**. Eventually, the growth in demand for the product will slow down and it will enter a period of relative maturity. It will continue to be profitable. The product may be modified or improved, as a means of sustaining its demand.
5. **Decline**. At some stage, the market will have bought enough of the product and it will therefore reach 'saturation point'. Demand will start to fall. Eventually it will become a lossmaker and this is the time when the organisation should decide to stop selling the product or service. Usually there will be an additional development costs to refine the model to extend the life cycle.

Maximising the return over the product life cycle (LP 4.7.3.2, p.156)

Design costs out of products. Careful design of the product and manufacturing and other processes at the design or development stage will keep cost to a minimum over the life cycle.

Minimise the time to market. Competitors watch each other very carefully to determine what types of product their rivals are developing. Early launching will give the product as long a period as possible without a rival in the market place and should mean increased market share in the long run.

Minimise breakeven time (BET). A short BET is very important in keeping an organisation liquid. The sooner the product is launched the quicker the research and development costs will be repaid, providing the organisation with funds to develop further products.

Maximise the length of the life span. The longer the life cycle, the higher profit it will be generated. One way to maximize the lifecycle is to get the product to market as quickly as possible to lengthen the time of generating profits.

Refer to Q4.6 for practice question

Anson's tips for costing questions:

1. Remember you should be aware of variable cost (relevant cost) when dealing with costing question
2. Fixed cost usually not included, but beware of the wordings in the exam (if the cost is avoidable → relevant)

Customer profitability analysis (CPA) (LP 4.8, p.157)

CPA is an important management accounting tool based on the recognition that each customer is different. Therefore each dollar of revenue or each dollar of cost generated by the customer does not contribute equally to a company's profitability. CPA's value lies in its ability to improve strategic decision making.

The general approach to CPA is based on segmenting the customer base to determine the revenues and costs attributable to each segment. This is often combined with an activity-based costing (ABC) approach. Once the profitable and non-profitable segments are identified, profitable segments are maximised while non-profitable segments are reduced or eliminated.

Each of the key steps in this process is outlined below.

Step 1 – Customer segmentation

The basis for customer segmentation will differ across companies and across industries. Currently, there are two basic approaches to customer segmentation: 1. Demographic segmentation based on observable characteristics such as geographic area, customer age, sex and income level. 2. Psychographic segmentation based on customer needs and behaviour such as customer values, attitudes and interests.

Step 2 – Revenue attributable to each segment

Once segments have been identified, the annual revenue is calculated per segment, how this is done will depend on the products or services offered by the company. Adjustments to the price paid by the customer for a product or service, such as discounts, service fees or product enhancement fees, must be included to determine the true amount of revenue generated by each customer and the aggregated amount calculated for the customer segment.

Step 3 – Use ABC to determine the cost attributable to each segment

The annual cost is calculated per segment. This will involve both directly attributable product or service costs and also customer costs, including allocation of overheads, marketing, sales and distribution costs. It is these customer costs which are often hidden, such as quality control and inspection costs, order picking, order fulfilment and customer ordering costs. ABC is an effective way to assign both types of costs to customers.

Step 4 – Analyse the profitable versus the less profitable or unprofitable customer segments

The profitable customer segments will be those whose annual revenues exceed annual costs. As the profitability of customer segments is likely to vary from year to year, a more accurate analysis could involve calculating profitability over the lifetime of each customer segment, as noted below.

Step 5 – Develop strategies to maximise profits from profitable customers and reduce or eliminate less profitable or non-profitable customers

For profitable customer segments, this step involves detailed planning around the development of long term customer relationships for increased revenues, and hence profitability such as customer retention and loyalty programmes.

1. Elimination – ceasing to supply these customers. This can be done by no longer marketing to these customers, changing the product or service so that it is no longer suitable, or raising prices.
2. Re-engineering – turning the least profitable or non-profitable customer groups into profitable ones by either increasing revenue or decreasing costs attributable to these groups, or both. Examples include charging additional fees for services or using differential prices, according to customer segment.

Step 6 – Review the impact of the new strategies on the performance of the customer segments

The implementation of any new strategy, for example, changes in pricing, cost reduction or customer service, should be reviewed after an appropriate period to determine the impact on customer profitability.

Refer to Q4.3-2 for practice question

Chapter 7: Treasury management

Responsibilities of treasury function (LP 7.1, p.263)
- Liquidity (working capital) management: measuring, monitoring and managing cash flow to protect solvency **(most important)**
- Funding (long term finance): creating an optimal mix of equity and debt to meet capital expenditure and investment requirements
- Financial risk management: identifying potential risks and their impact and taking action to mitigate the risk

The importance of cash visibility (LP 7.1.1, p.263)
- It is a key aspect of the centralised management of an organisation's cash resources
- A system (e.g. spreadsheet or ERP is usually required)

Current cash resources
- There is a need for systems to be in place to enable treasury to **see cash balances in all countries and all locations**
- In a small organisation a spreadsheet based approach may be sufficient
- In larger organisations a system automatically retrieving real time information from all bank accounts will be necessary to provide **real time information on aggregate cash resources across a range of currencies and locations**

Future cash resources
- Treasury need to be able to forecast the company's overall cash position
- Combination of cash flow forecast from different business units and locations. An integrated forecasting system combining forecasts in a common format from multiple locations will be required.
- The knowledge of what the company's cash position will allow treasury to **identify future cash surpluses and deficits and plan investment and funding** accordingly.

Corporate treasury centres and in-house banks (LP 7.1.2, p.264)

Corporate treasury centre (CTC)
- provide a wide range of treasury functions centrally to all companies in a group
- set up as a separate legal entity within a group rather than a division of a company
- offers a very wide range of financial services across a group → in-house banks. (cash management, foreign exchange services, risk management, funding and investment, payments and collections in range of currencies)
- Act as a centralised service centre for repetitive actions (e.g. payments and collections) or more strategic issues (e.g. risk management and funding and investment decisions)

Typical example of CTC
- A subsidiary in one country pays another subsidiary based in a second country → at least two banks in the processing of the payment and receipt as well as probably necessitating a currency transaction.
- bank pools cash from subsidiaries with surplus cash and lends it to subsidiaries requiring finance
- The in-house bank should be able to generate an interest margin from the difference in rates if it charges borrowers and pays depositors.
- An in-house bank will also act as an intermediary with external banks when subsidiaries require finance that cannot be satisfied from internal cash pooling

Advantage of using in-house bank

- maintains complete control over the transaction and avoids external banking costs

pooling surplus cash in the group → enable the corporation to take advantage of investment opportunities and achieve optimal procurement and usage of capital across the operations of the entire group.

Structure of the treasury function (LP 7.4, p.268)

A treasury function structure can be centralized or decentralized

Centralized treasury function

Located in head quarter with control over the entire group

Advantage

- Avoids having a mix of cash surpluses and overdrafts in different localised bank accounts
- Facilitates bulk cash flows and bulk borrowing (economies of scales in funding)
- Larger volumes of cash are available to invest (e.g. money markets, high-interest accounts)
- Improved foreign exchange risk management by using foreign exchange income earned by one subsidiary to another
- Employment of experts with knowledge of dealing with different kinds of financial products such as forwards, futures and options

Decentralized treasury function

Located in the local office with control in the specific location

Advantage

- Sources of finance can be diversified and can match local assets
- Greater autonomy can be given to subsidiaries and divisions because of the closer relationships they will have with the decentralised cash management function
- More responsive to the needs of individual operating units
- More opportunities to invest such balances on a short-term basis

Treasury as a cost centre of profit centre (LP 7.5, p.269)

Cost centre: cost can be charged to other departments per usage, it can also be charged as head office expense

Profit centre: if the revenue arising from treasury can be identified, we can make use of the profit centre concept, examples included:

- Charge a fee to other departments for the service provided
- Earn a profit/ charge a loss through managing the exposure to interest and foreign exchange risk
- Decide which risks are going to hedge and which does not

Advantage

- Contribute to the group profit if right hedge or right speculation is made
- Motivate the specialist in treasury to be improved as they will be assessed in terms of the contribution of the group profit

Disadvantage

- Additional administrative cost such as data collection is incurred
- Problems are likely to arise in establishing a charge standard to other departments
- There will be speculation risk in derivative products if such trades are not closely supervised

Treasury policies requiring board level approval (LP 7.6, p.271)
Financial policy should address gearing and maturity issues, fixed and variable interest rate obligations, foreign exchange risk management, dividend policy and covenants. The company requires as much operational and financial flexibility as possible.

Areas of treasury policies which required board approval:

Financial policy	Funding	Banking	Liquidity
Credit risk	Foreign exchange	Interest rate hedging	Instrument & tech

Monitoring the risk profile in a changing environment (LP 7.7, p.273)
Monitoring the risk profile in changing financial markets and business is largely done via comparing actual performance against any performance benchmark.

Difficulties of performance measurement
- obtaining information on managerial and risk performance measures
- need to focus on current profit-making decisions rather than backward-looking performance measures
- lack of industry standards by which to judge performance
- moving targets in a dynamic, fast-moving industry

Frequency of board reporting (LP 7.7.3, p.273)
- Daily reports of any significant impact on the business arising from changing in market rates
- Monthly reports showing profit or loss calculations, market conditions, performance against benchmarks, sensitivity analysis and compliance
- Quarterly reviews of policy in light of financial markets or external influences
- Annual reviews of policy, suitability of treasury objectives and risk parameters

Treasury performance measures (LP 7.9.2, p.276)
The measures should be able to:
- compare current performance against previous results
- allocate resources
- clarify objectives and definition of roles and responsibilities
- motivate staff

If operated as a **profit centre**, treasury performance measures might include:
- overall profitability (for example, return on capital employed)
- actual profit generated versus budget
- profitability of each type of instrument traded within given time periods
- profitability for each dealer and section
- number of times that pre-set authority dealing and/or counterparty limits breached

If operated as a **cost centre**, treasury performance measures might include:
- return on capital employed
- actual profit or loss generated versus budgeted rate
- measurement of actual versus budget interest rate return
- measurement of actual versus budget foreign currency rate obtained

Auditing the treasury function (LP 7.10, p.278)
One of the key controls in ensuring compliance in the treasury operation is an effective internal audit process. This then provides direction for the role of external audit in ensuring that the risks are under control. The roles of the internal auditors and external auditors are:
- An internal audit is geared more towards the objectives and goals of management
- An external audit is geared towards the objectives of parties external to the company

Chapter 10: Dividend policy (LP 10, p.377)

Relationship between dividend policy and the financing decision (LP 10.2, p.377)

- A company can use the earnings either to pay cash dividends to the shareholders or retain for financing investment projects
- Investors believe a company's dividend policy is important because if a company is able to increase the dividend payout, it represents a confidence of company's future earnings – *Dividend policy is a positive indicator of a company's profit expectations*
- Due to the business plan of a company, some may reinvest their earnings through capital expenditure (e.g. update the IT system), others may wish to build cash reserve in times of economic hardship - *A high profit in a year does not automatically transfer into high dividends for shareholders*
- A lot of companies (e.g. utilities companies) try to payout consistent dividends for managing investors relations

Theories of dividend policy (LP 10.3, p.378)

1. Residual theory – if a company can identify projects with positive NPV, it should invest in them, no dividends will be paid unless there are no investment opportunities

   Features of companies using residual theory
   - High retained earnings
   - Minimum cash dividends
   - More internal financing (Less external financing)

2. Traditional view – focuses on the effects on the share price. The dividends a company pays may treat as a signal to investors.

   Features of companies using traditional view
   - Takes account of different clienteles of shareholders
   - Takes account of the shareholder preference for dividends or capital growth

3. Irrelevancy theory – Opposite to traditional view, Modigliani and Miller (MM) proposed that in a tax-free world, shareholders are indifferent between dividends and capital gains.

   The theory assumes:
   - No tax and transaction cost
   - All relevant information available
   - If a dividend is paid, share will suffer loss in value equal to dividend because of the need to obtain outside finance
   - Shareholder can make their own dividends through selling shares

   Arguments against MM
   - Different tax rates on dividends affect shareholders preference
   - Companies prefer earning retention
   - Imperfect markets induce shareholders prefer higher dividends
   - Transactions costs makes selling shares less attractive
   - Limitation of information makes companies to maintain dividend level to maintain shareholders' confidence

   Features of companies using Irrelevancy theory
   - Management thinks value of the company is determined solely by the earning power and risk of its assets and investment
   - Distribution of dividends does not affect the value of company

Practical factors influencing dividend policy (LP 10.4, p.379)

- The easiness of raising extra finance by the company from sources others than retained earnings
- The company's liquidity position (whether the company has sufficient cashflow for dividend payout)
- The need to repay debt in the near future
- There maybe dividend restraints imposed by the loan agreement
- The company's required gearing level as payment of dividends would reduce equity fund
- The signalling effect of dividends to shareholders and the financial markets in general
- The need to retain some earnings within the business just to counteract the effect of inflation and maintain its operating capability unchanged
- The law on distributable profits, as companies can generally only pay dividends solely out of accumulated net realised profits less net accumulated losses
- The need to remain profitable, as unprofitable company cannot continue for ever paying dividends out of historic retained profits
- Adopting a conservative dividend policy in times of economic instability can improve balance sheet flexibility and provide a source of internal finance when capital markets are volatile and external fundraising is expensive

Advantage of no dividend strategy

- Can maintain the company's liquidity position (Cash kept in bank rather than paying out as dividend)
- Can cope with the need of company's expenditure
- Can invest in profitable projects
- Can give confidence to outside stakeholders (e.g. suppliers, banks)
- Can improved the financial ratios (e.g. current ratios, quick ratios)

Dividend payout ratio

The dividend payout ratio measures the percentage of net income that is distributed to shareholders in the form of dividends during the year.

Calculation

$$\frac{Total\ dividends}{Net\ income} \text{ or } \frac{Dividend\ per\ share\ (DPS)}{Earnings\ per\ share\ (EPS)}$$

Since investors want to see a steady stream of sustainable dividends from a company, the dividend payout ratio analysis is important. A consistent trend in this ratio is usually more important than a high or low ratio.

Since it is for companies to declare dividends and increase their ratio for one year, a single high ratio does not mean that much. Investors are mainly concerned with sustainable trends. For instance, investors can assume that a company that has a payout ratio of 20 percent for the last ten years will continue giving 20 percent of its profit to the shareholders.

Conversely, a company that has a downward trend of payouts is alarming to investors. For example, if a company's ratio has fallen a percentage each year for the last five years might indicate that the company can no longer afford to pay such high dividends. This could be an indication of poor operating performance.

Generally, more mature and stable companies tend to have a higher ratio than newer start up companies.

Refer to Q10.1a,b for practice question

Signalling effect of dividends (LP 10.4.1, p.380)

The ultimate objective in financial management decisions is to maximise shareholders' wealth.

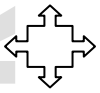
Types of dividend

a. Regular dividend – dividend which will be distributed occasionally
   Benefits: Communicates future prospects to shareholders
   Risk: If there is no actual profits increments, dividend may pose a future cash flow problem

b. Special dividend – dividend which will only be distributed due to some special events (e.g. selling of assets)
   Benefits: Return of extra cash to shareholders without creating an expectation that the dividend will be repeated
   Risk: Share price will not be benefited

Point of view from shareholders

- Expect a consistent dividend policy (either stable dividend or steady dividend growth)
- A large rise or fall in dividends can unduly influence the company's share price
- A dividend cut may signal that future prospects of the company are poor
- Partial sales of the shareholdings may not be able to achieve the same effect as dividend due to transactions cost and minimum trading size
- If the effective tax rate of capital gains are higher, shareholders would prefer dividends
- Bird in the hand theory → current dividend payment reduce investors' uncertainty



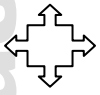
Refer to Q10.1c for practice question

Point of view of management

- May use this as a defence for takeover bid by increasing the dividend payout
- Investors may think increasing dividend payout is a good signal for future prospect of the company, therefore driving the share price higher and makes the company's share more expensive for a potential bidder

Assessment whether the dividend policy has been implemented successful

- Direct feedback from shareholders, especially institutional shareholders, stating whether or not they are happy with the current dividend policy
- Full details of the registered shareholders, and size of holdings
- Knowledge of the impact of taxation of dividends on shareholders' attitude, and specifically on their preference between dividends and capital gains
- The amount of capital investment the company wishes to undertake. The use of retained earnings and other internally generated funds avoids issue cost and the information symmetry problems on external financing. The level of dividends paid affects the amount of internal funds that are available for investment
- The impact of dividend payments on liquidity
- Signals provided by dividend payments about the future financial health of the company



Refer to Q10.2 for practice question

Implications of high dividend policy

Pros
- Signalling effect on dividend, it is regarded as a positive view of management of the future prospects of the company
- Share price would react positively to the announcement
- Pension funds and institutional investors favour high dividends due to the tax exemptions features
- Investors may rely on share dividends for income who will prefer high dividends
- For investors applying to agency theory, managers may not always act in the best interest of the company, high dividend means excess cash flow back to them
- Avoiding high cash pool in the company can prevent hostile takeovers

Cons
- If the company requires cash later one, it may require to raise it through right issue, which depends on market conditions and the relative transaction cost
- High dividend may not be sustainable, which may affect shareholders' image on the company
- Some institutional investors (e.g. insurance company) prefer a steady dividend payout policy
- High dividend may indicate that the company has failed to identify investment opportunities for future growth

Practice question
A company currently pays 50% of after-tax profits to shareholders as dividends. It is considering a proposal to increase this dividend pay-out ratio to 70%. The company expects to earn a yield of 8% on all new investments, but has no plans to raise new finance from external sources. All new financing will come from retained profits.

What will be the implication of the proposed new dividend policy for future earnings growth?

Suggested solutions
The growth rate in earnings and dividends can be estimated as the percentage of profits retained multiplied by the return on investment.

So currently the expected growth in annual earnings and dividends is 8% × 50% = 4% per year.

If dividends are increased to 70% of earnings, growth in earnings and dividends will fall to: 8% × 30% = 2.4% per year.

Other forms of dividends (LP 10.5, p.382)

1. Scrip dividends – dividend paid by the issue of additional company shares, rather than in cash.
2. Stock split – each ordinary shares is split into two shares creating a larger number of shares with smaller market value

Pros
- Preserves cash position which will improve liquidity
- Investors may obtain tax advantages due to the form of dividend
- Investors can increase their shareholding without incurring transaction cost
- Share issue decrease the gearing and enhance its borrowing capacity

Cons
- No impact on shareholders' wealth
- Share price tends to fall after the scrip or stock split

3. Share buy-backs – the purchase by a company of its own shares, usually is used when the share price fall significantly and the management believes the share price are undervalued

Pros
- Increase EPS which leads to a higher share price and the company can increase dividends on the remaining shares in issue
- Increase gearing
- Prevent possible takeover bids or enables listed company to be delisted
- Return the surplus cash back to the shareholders
- Readjust a company's equity base to more appropriate levels if its business is decline

Cons
- Difficult to balance the pricing of the shares between the investors who would like to sell and those who do not
- Interpret as a bad management or bad strategic planning on the excess fund of a company
- Some shareholders will be taxed on a capital gain

Refer to Q10.3, Q10.4, Q10.5 for practice question

Example of dividend alternatives [you need to understand the impact on different dividends]

The board of directors of Alligo Company is discussing the level and nature of the company's next dividend payment. Alligo's current share price is $40 cum div. Three options are under consideration:

(1) A cash dividend of $1.50 per share

(2) A 7.5% scrip dividend

(3) The company buys back 10% of the ordinary share capital at the current market price and pays a cash dividend as in (1) above

Calculate the expected effect of each suggestion on a shareholder in Alligo owning 1,000 shares (and whose current wealth cum div is therefore 1,000 shares at $40 = $40,000) explaining how accurate estimates are likely to be. Ignore taxation.

Summary excerpts from the financial statements of Alligo are as follows:

Income statement

	$m
Revenue	1,500
Operating profit	50
Net interest earned	40
	190
Taxation	31
Available to shareholders	159

Statement of financial position

	$m	$m
Non-current assets (net)		600
Current assets		
Inventories	200	
Receivables	200	
Cash and cash equivalents	400	800
Less: current liabilities		(300)
		1,100
Shareholders' equity		
Share capital (40 million shares)		200
Retained earnings		900
		1,100

Solution

The outcomes of the three alternatives being considered are as follows:

(1) A cash dividend of $1.50 per share

After a cash dividend is paid the expected wealth is:

	$
1,000 shares at $38.50	38,500
Cash dividend 1,000 at $1.50	1,500
	40,000

(2) A 7.5% scrip dividend

A 7.5% scrip dividend would mean the issue of three million new shares. The total market value of the company of 40 million shares at $40 or $1,600 million would be unchanged, but would now be split between 43 million shares leading to a new expected share price of:

$$\frac{\$1{,}600\text{m}}{43\text{m shares}} = \$37.21$$

The shareholder would receive 75 new shares, giving 1,075 in total. The expected wealth of the shareholder would be unchanged at 1,075 × $37.21 = $40,000.

(3) The company buys back 10% of the ordinary share capital at the current market price and pays a cash dividend as in (1) above

Buy-back of 10% of the ordinary share capital would cost $1,600m × 10% = $160 million, presumably from the cash at bank. This would reduce the company's value by $160 million, but the share price would be expected to remain unchanged.

$$\frac{\$1{,}440\text{m}}{36\text{m shares}} = \$40$$

The shareholder's wealth would remain at $40,000 whether or not (s)he sold the shares. If no shares were sold the situation is as (1) above. If shares were sold, 1,000 shares sold gives $40,000.

These estimates are unlikely to be accurate. If the market perceives that these policies are conveying significant new information about the company's future prospects, either positive or negative, the share prices will differ from the above figures.

Framework for analysing dividend policy (LP 10.6, p.385)

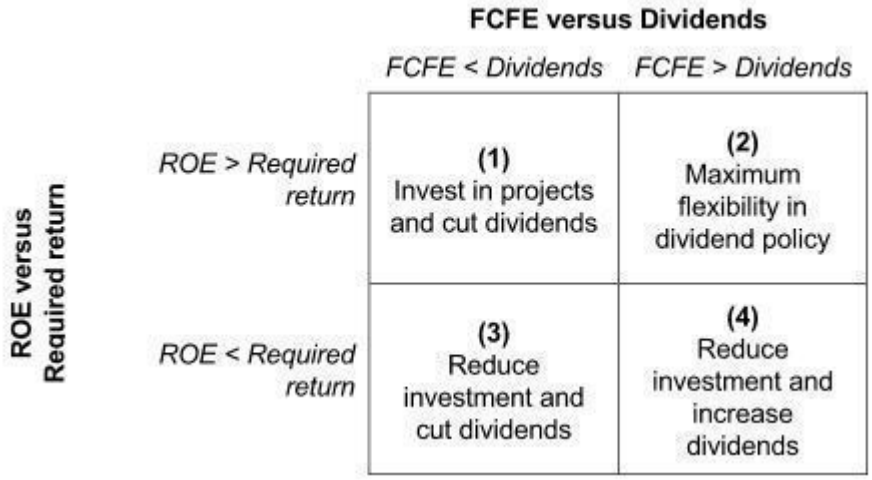
Aswath Damadaran asked two questions to analyse dividend policy:

1. How much cash is available to be paid out as dividend and how much of that cash is actually paid out to shareholders?
   Available cash = Free Cash Flow to Equity (FCFE)

   FCFE = Net profit after tax (NPAT) + depreciation + amortisation - capital expenditure +/- change in working capital - loan principal repayment + new debt issued

2. How good are the investment projects available to the company?

   Compare: Required return (Cost of capital) vs Accounting return on equity (ROE)



Dividend policy question

Alibaba, the Chinese e-commerce marketplace, came to market through an IPO on the New York Stock Exchange in 2014, raising a record amount of US$25 billion, making it the largest IPO ever.

This was despite the fact that it had never paid a dividend and was not expected to do so in the near term.

Why were investors nonetheless prepared to buy Alibaba shares at an IPO price of US$68 putting it on a historic P/E multiple of over 41?

Solution

- Investors earn a return from company shares in the form of dividends and capital gain(or loss)
- Companies that can earn a high return from investment are likely to reinvest profits and pay low or no dividends. Provided that there is adequate return on investment this will result in growth in the company's profits and share price. Investors should be content with this provided the return on investment that the company can achieve exceeds that which the investor could earn by reinvesting dividends in an alternative investment with equal risk.
- The attraction of young companies in high tech markets lies largely in their growth potential. This growth will be maximised if all profits are retained and invested in the business rather than distributed. Therefore investors in such companies expect to earn a return through the capital gain in the shares, rather than through dividends.
- Per case, investors were prepared to pay a price which put Alibaba on a P/E multiple of over 41 indicates that they believed that the company had a high potential for growth and the ability to generate a high return on investment.
- Investors buying shares in Alibaba on IPO did not expect to receive dividends. Consequently it is growth in sales and profits that would be likely to be the main driver of the share price for the foreseeable future.

Anson's tips for dividend policy questions:

1. Think of any theory to support the dividend policy
2. Forms of dividend
3. Dividend paid → equity value decrease → share price decrease → cash value increases → total shareholder's value wont change (assume no tax impact)

LP 4 ABC question

Step 1: Conduct interviews to determine appropriate activity centers and cost drivers

Step 2: Find out the direct cost of the product

Step 3: Establish the interrelationship between key activities and the resources consumed

Step 4: Construct a process map to illustrate the relationship

Step 5: Put costs under various cost pools and identify the cost of each activity and the related cost driver

Step 6: Assign cost to products and services on the basis of mix of activities needed to produce each product or services

Step 7: Allocate the overheads per cost drivers, add a column "total cost" to tie the figures

Step 8: Add back the direct cost (e.g. DM & DL) to the equation and calculate the total cost per unit

Step 9: Write or purchase software to carry out the mechanism of ABC

REMEMBER:

- **Steps is very important in the exam, please use the model provided even though you are not sure about the figures**
- **Pros and cons, please found in MG**

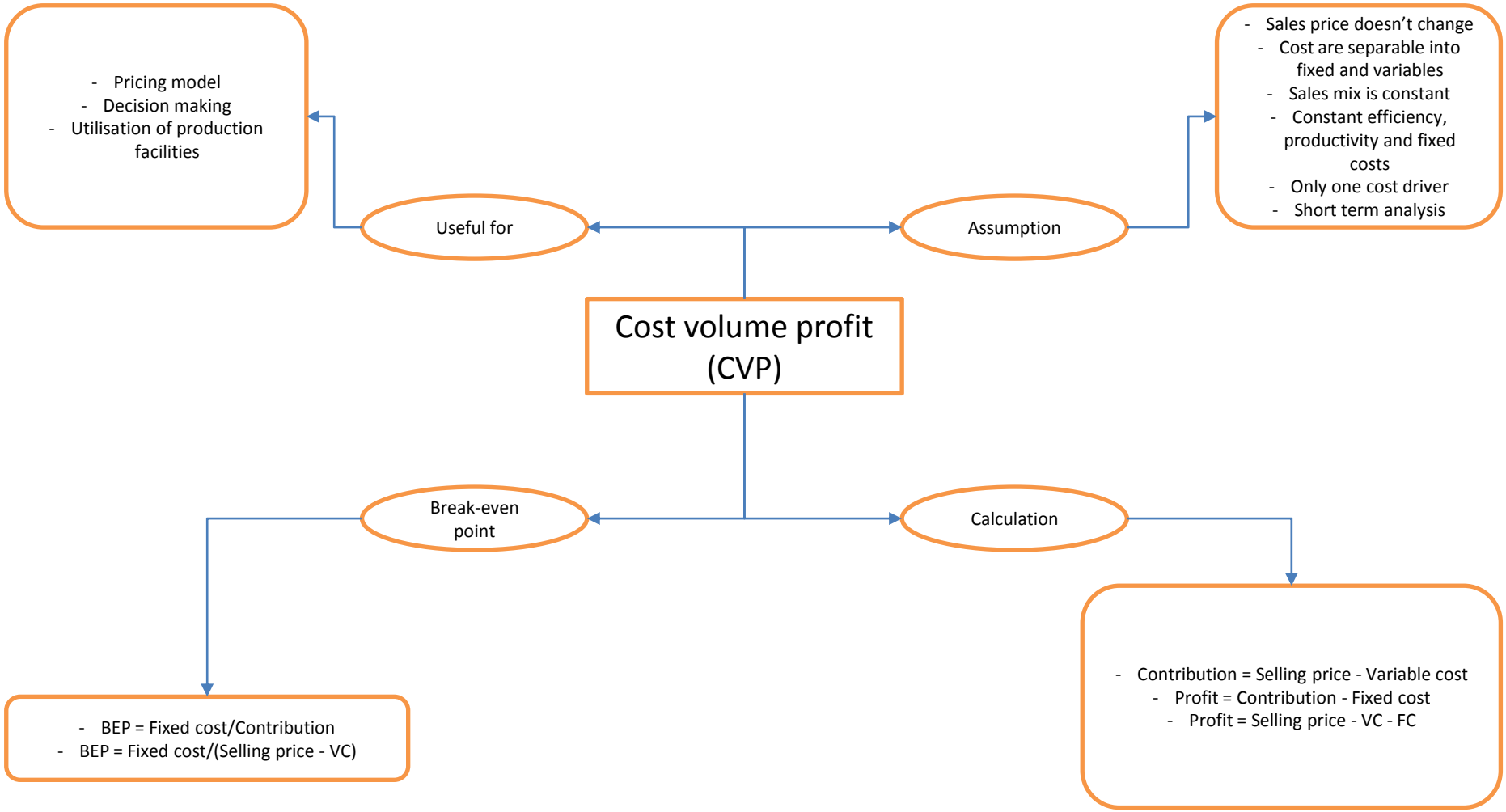
Read and underline the information provided in the exam

1. Generally overheads will be given when the exam ask you about cost by ABC
2. Find out the cost drivers to allocate the overheads
3. E.g. Machine hours, number of inspections

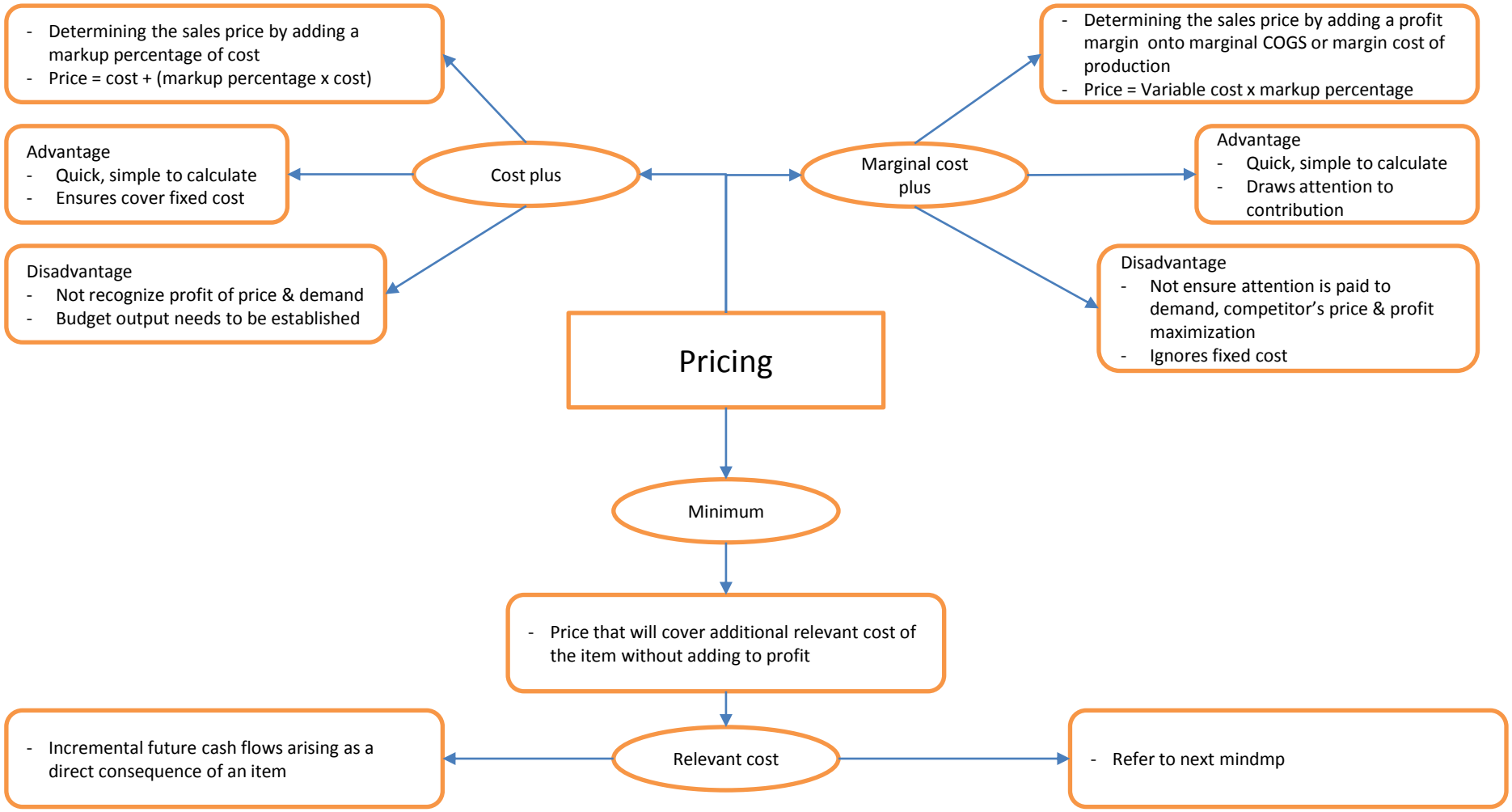
1. Split overheads between each product type (if any) and find a cost per unit of activity
2. Percentage of cost related to the activity x total overhead = overhead related to the activity
3. Overhead related to the activity/Level of driver activity = cost per cost driver

1. List down the activity volume of each product
2. Allocated cost = activity volume x cost driver
3. Divided the total overhead cost allocated to the product by the number of product produced to get the cost per unit

LP 4 CVP analysis



LP 4 Pricing



LP 4 Relevant cost example

Relevant cost of labour

If labour must be paid extra for additional hours of work	Additional cash payment
If labour has spare time and paid a fixed wage	Nil
If labour is in short supply, and employees must be switched from other work	Opportunity cost: net cash flow that could be obtained from other work

Relevant expense

Adsorbed overheads	Irrelevant: not a cash flow
Other expenses	Only additional cash expenditure are relevant

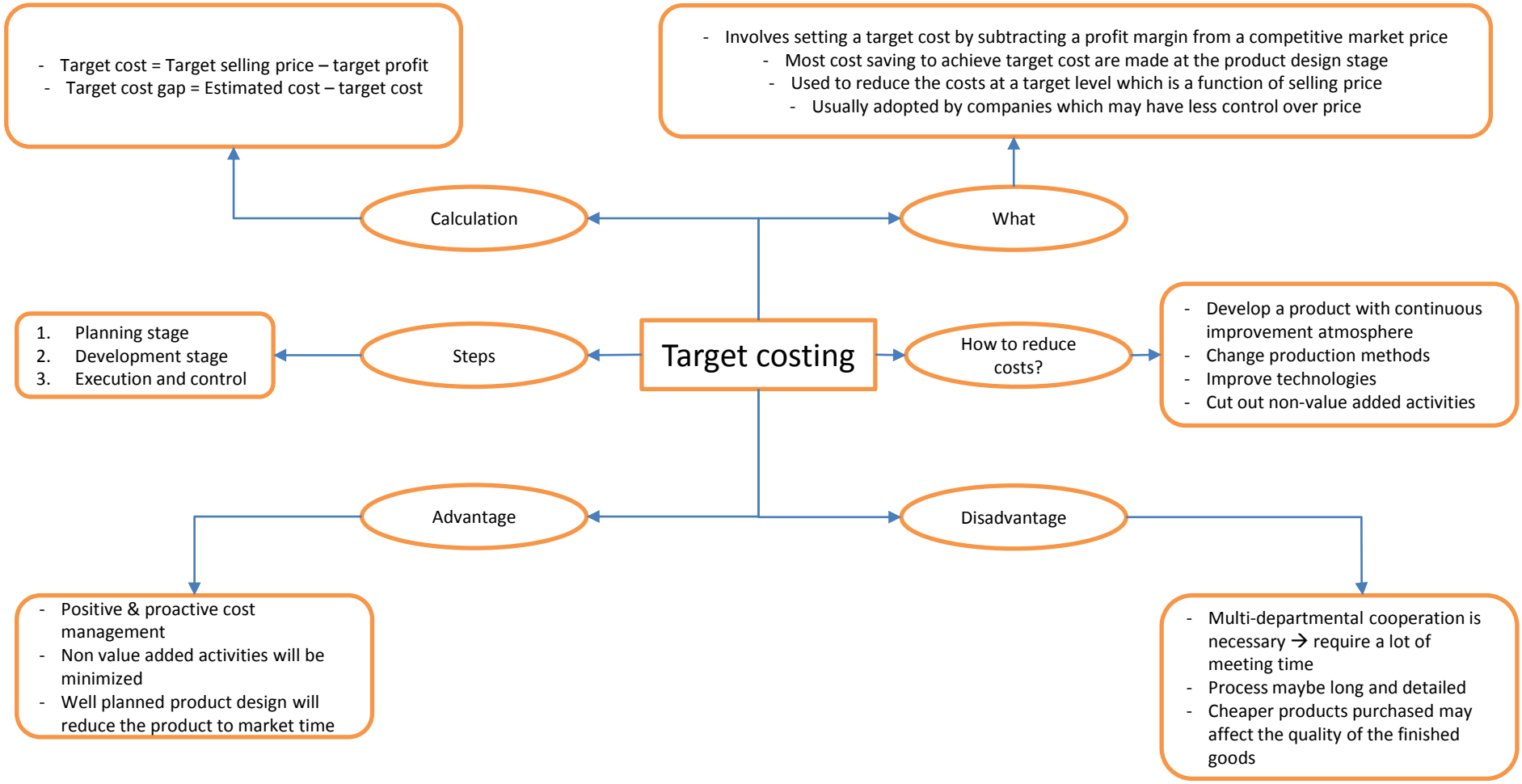
Relevant cost of material

If materials must be purchase	Purchase cost
If materials are in inventory, but in regular use	Replacement cost of materials used
If materials are in inventory, but have no other use	Disposal value
If materials are inventory, not in regular use but have alternative use	Opportunity cost: net cash flow that could be obtained from alternative use

Remember:

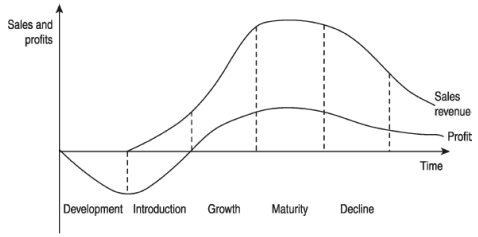
- **Only the action which will increase in future cash flow is relevant**
- **Others are called sunk cost which are irrelevant**
- **State in the exam paper whether it is relevant or sunk cost**

LP 4 Target costing



LP 4 Product life cycle

- Development
- Introduction
- Growth
- Maturity
- Decline



- Design costs out of products
- Minimise the time to market
- Minimise break even time
- Maximize the length of the life span
- Minimise produt proliferation
- Manage the product's cashflow

Stages

Usage

Product life cycle

Calculation:
Only relevant cost for the cycle is included

Advantage

Calculation

- Give a better picture of the total performance of a product
- Identify design costing problems at early phase
- Provide an indication of financial return over life of product
- Used to determine target selling price at different stage

Remember:
- **Only the action which will increase in future cash flow is relevant**
- **Others are called sunk cost which are irrelevant**
- **State in the exam paper whether it is relevant or sunk cost**

- Additional cost are required to enhance the accounting system
- Ignores time value of money
- Uncertainty on estimating the sale, cost, expense
- Some extra cost is required to launch the product life cycle such as acct system

LP 4 Customer profitability analysis

Customer Profitability Analysis (CPA) considers the total sales revenue from a customer or customer group less all the costs incurred in servicing that customer or customer group.

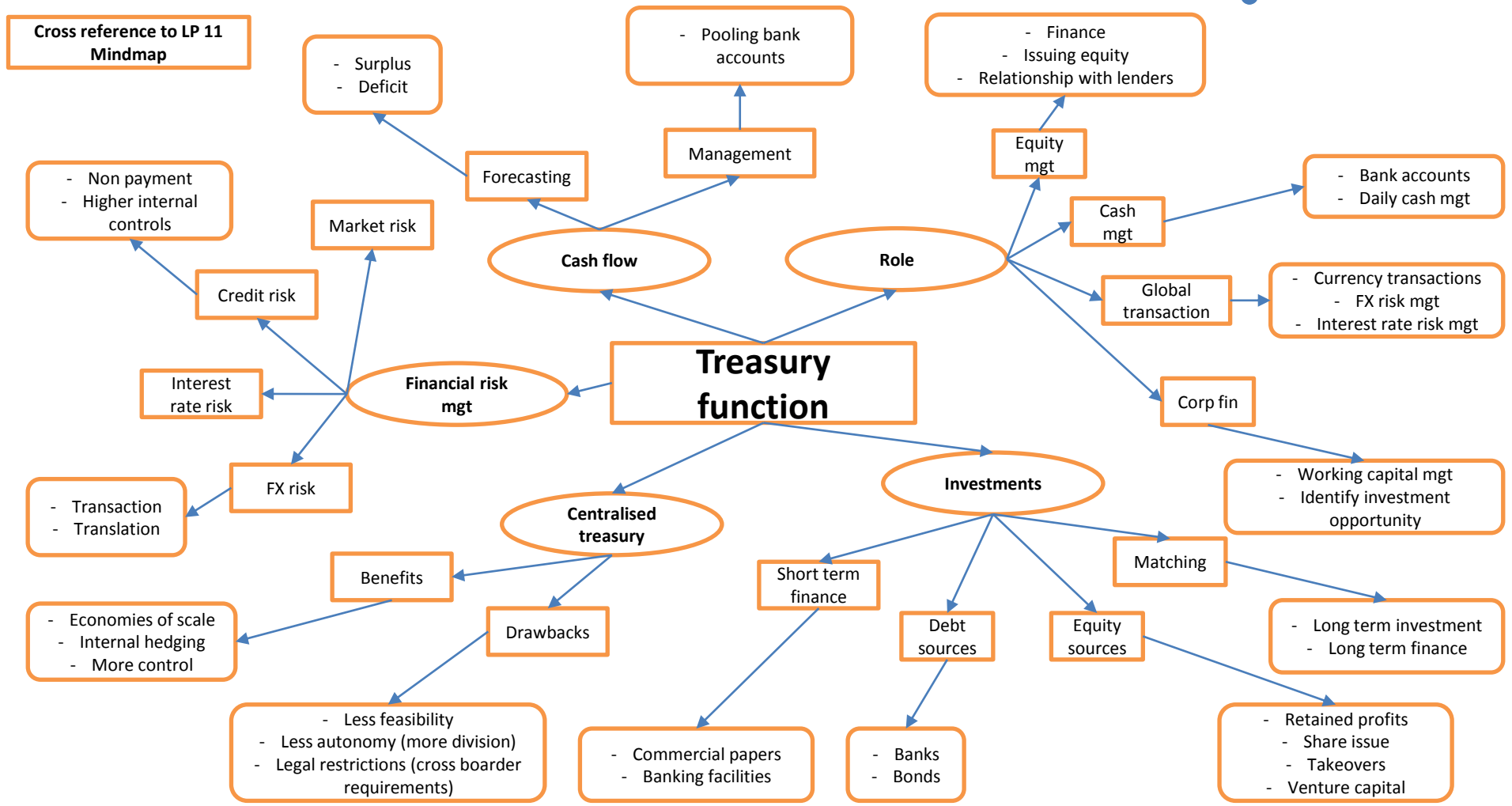
CPA

	$
Gross sales revenue	X
Less: discounts	(X)
Net sales revenue	X
Cost of goods/services sold	(X)
Gross margin	X
Less: customer specific costs (marketing, admin, selling, telephone etc)	(X)
Net customer margin	X

Benefits

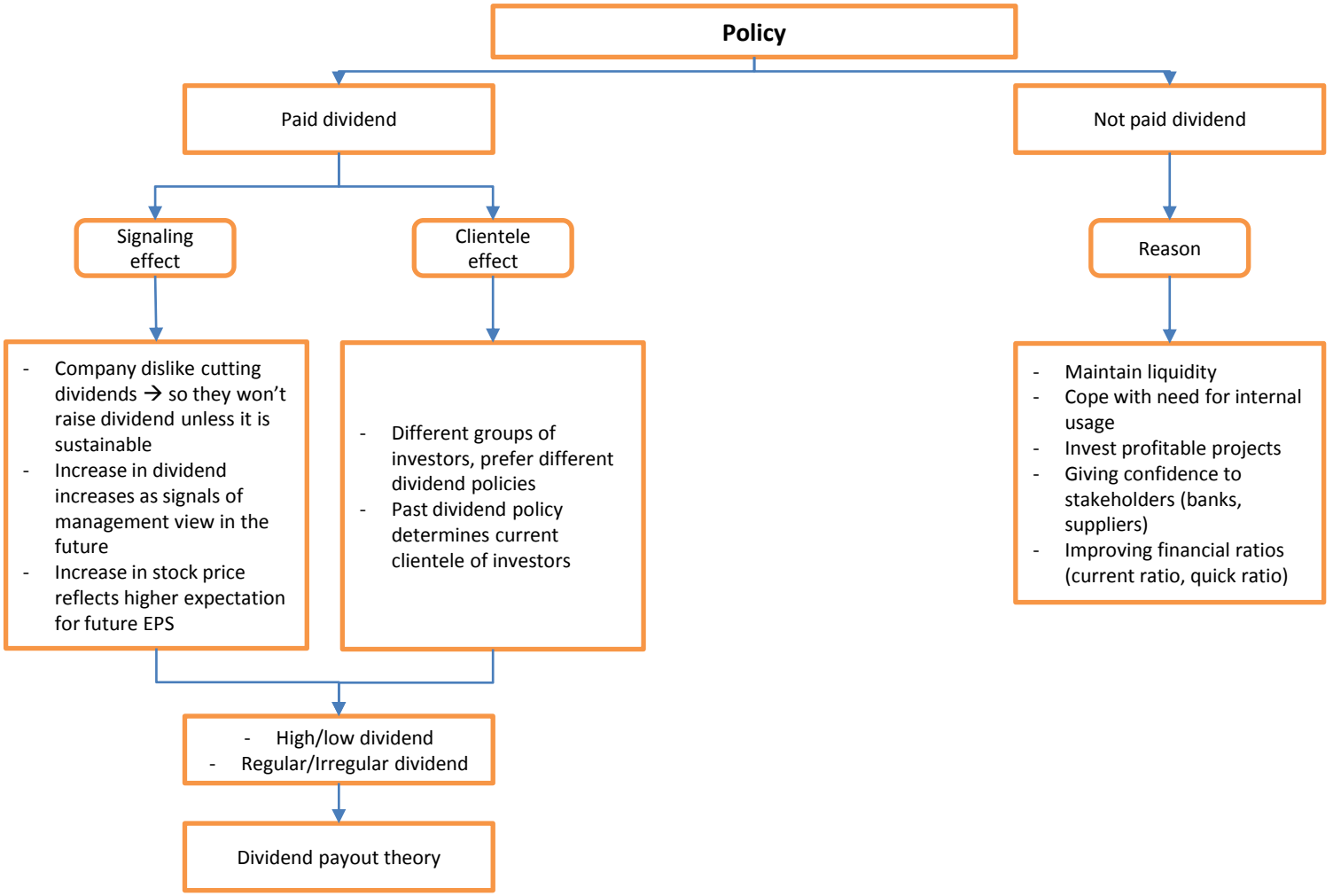
- Improved profitability
- Better resource allocation
- Enhanced customer service
- Ability to rationalise approach to customers
- Highlight unprofitable customers
- Achieve corporate objectives
- Better negotiation with customers
- Retention of customers
- More informed comparative analysis between customers

LP 7 Treasury function

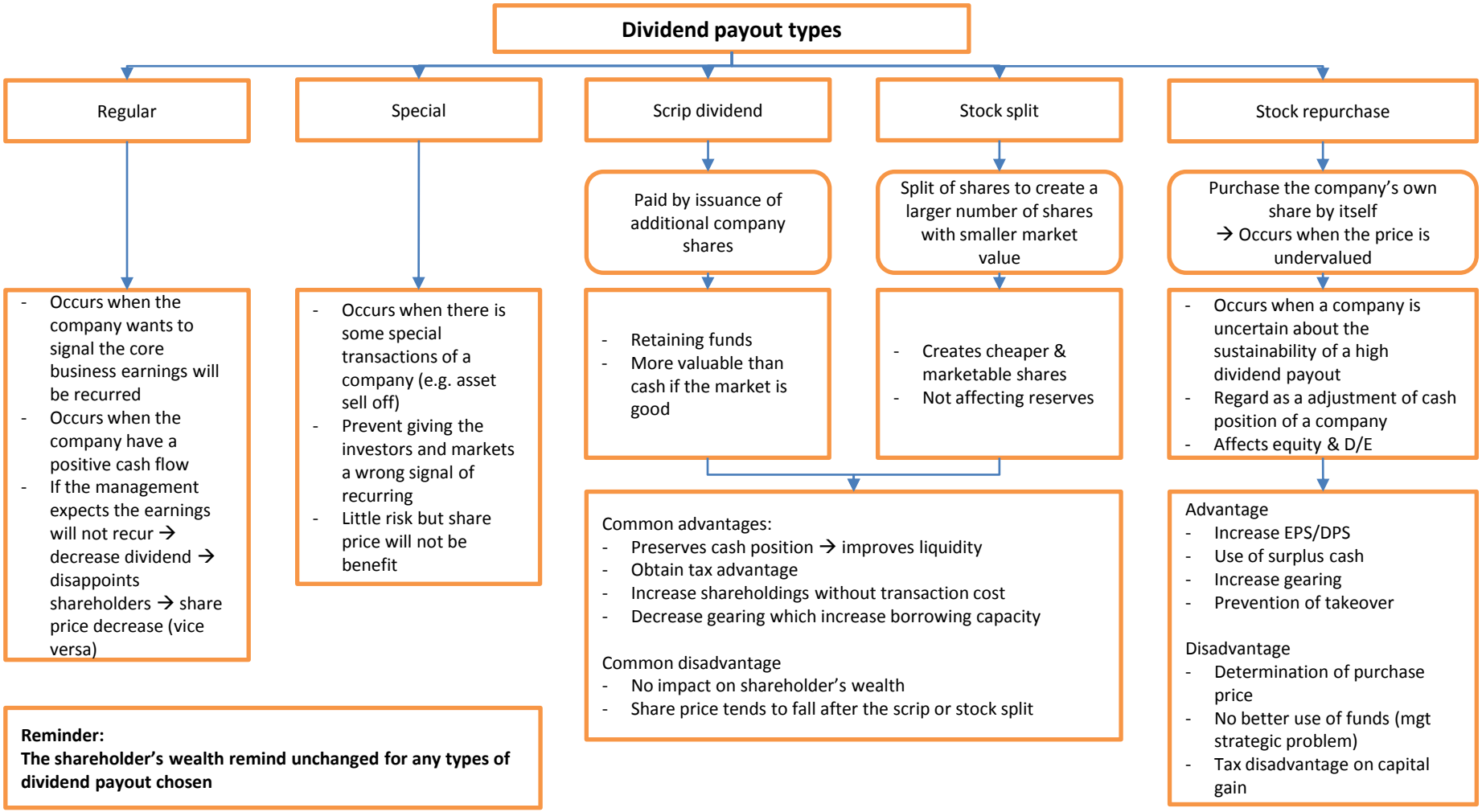


All for You to... PASS!

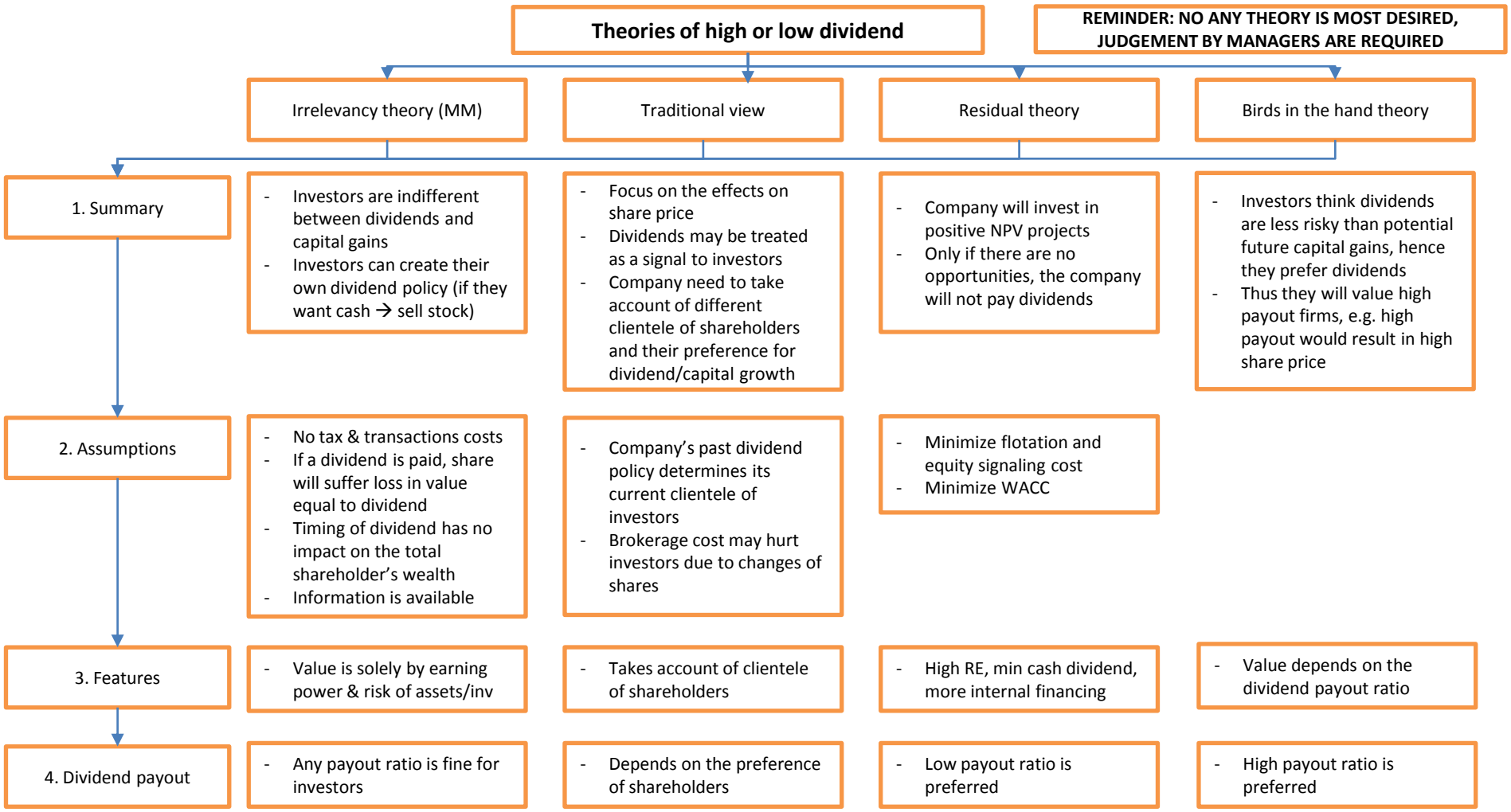
LP 10 Dividend policy



LP 10 Dividend payout discussion



LP 10 Dividend policy theory



Q4.6 Practice question - MB Jun 15

TTC is an established company in mainland China, focusing on the original equipment manufacturer ("OEM") business for overseas brand name mobile phone companies for over 10 years. It has built its reputation on lean manufacturing and is considered the price leader in this industry. It recently signed a contract with a customer to supply 500,000 units of a mobile phone, Model A, at a price of $1,000 per unit. The latest actual direct labour, direct materials, variable overhead and allocated fixed manufacturing overhead cost per unit, respectively, are $190, $320, $60 and $380.

Production costs in general are increasing in mainland China due primarily to rising salary and benefit costs. It is foreseen that the labour cost will increase at about 10% every year in the province where TTC's plant is located.

Most of the materials required for Model A are considered as commodities and are subject to market price fluctuation. TTC does not have much control over this cost.

Due to the recent downturn in the global economy, the demand for mobile phones has declined, hence the company has excess capacity in the fixed manufacturing overhead.

As one of the strategic development initiatives, the management is planning to develop its own brand of the next generation of mobile phones, Model X. The purpose is to achieve a higher profit margin compared to the OEM business. To launch Model X, additional costs in research & development, marketing (for brand building), customer services, abnormal materials wastage due to the learning curve, administration and finance are required. These costs are summarised below:

	All in $'000
Research & Development	2,900
Branding	4,000
Customer service	200
Termination cost (disposal of related assets, inventory write-off etc. at end of life cycle)	200
Abnormal inventory wastage of materials due to learning curve	50
Allocated human resources, administration and legal support. Work to be shared by existing relevant staff.	300
Loss on disposal of idle equipment to make room in the plant for the new production line	500

Over the life cycle of Model X, the management estimated that total revenue is about $10,000,000, costs of goods is $3,000,000, broken down into labour $900,000, materials $1,800,000 and manufacturing overhead $300,000.

TTC management target is to realise a 7% margin on the contract for Model A.

Required:

(a) For Model A, evaluate if the existing cost structure is acceptable to TTC's management. Subject to your evaluation, advise the management with an explanation what alternative action(s) can be taken on the cost structure to reach the 7% gross profit margin target. Your advice should be specific in the context of the case.

(7 marks)

(b) Evaluate whether Model X can be developed on profitability grounds based on the following:

- Gross Profit
- Life Cycle Costing with an explanation of the treatment for the various types of costs.

(9 marks)

(c) Explain the advantages and disadvantages of Life Cycle Costing in decision making.

(4 marks)

Suggested solutions – Q4.6

(a)

Actual profit margin:
Sales $1,000
Direct labour $190
Direct materials $320
Variable overhead $60
Allocated overhead $380
Gross profit margin $50 (or 5%)

Gross profit margin is 5% (1,000 - 950) / 1,000.
Therefore current cost structure is not acceptable.

The unit cost must be reduced from $950 to $930 in order to reach the 7% target gross margin. The company can achieve the $20 per unit reduction by considering one of the following three alternatives, (i) labour cost, (ii) materials cost and (iii) overheads.

As given in the case, the labour cost in mainland China is rising due to economic growth and the increase is expected to be about 10% for TTC's plan, so it is unlikely that this cost can be reduced by $20 per unit or 10.5% (20/190).

The reduction in materials cost is also difficult to achieve given that the commodity prices are determined by the market and TTC essentially has no control over it.
Also, as TTC is already an established manufacturer of mobile phones and it has a reputation for being a low cost producer, a further increase in production efficiency is unlikely to deliver a cost reduction equivalent to a 33.33% reduction (20/60) in variable overheads.

However, as TTC has an extra fixed manufacturing overhead, it is worth exploring (1) reduction of fixed manufacturing overhead, if possible, or (2) increase in the volume of production to reduce the allocated fixed overhead.

As an illustration for (2), assuming total fixed overhead remains constant, in order to reduce the unit allocated fixed overhead from $380 to $360, the volume of production should be increased by 5.56% (380 / 360 - 1) or to 527,800 units. It is therefore worthwhile for TTC's management to explore with its customer the possibility of a higher purchase volume in order to reach the 7% target gross profit margin.

Points to note

- Provide direct advise that the cost structure was not acceptable
- Generic and impractical alternatives to reduce the cost were introduced

(b)

Total Gross Profit
= $10,000,000 - $3,000,000
= $7,000,000

Traditional Gross Profit approach:	($'000)
Sales	10,000
COGS	
Direct labour	900
Direct materials	1,800
Manufacturing overhead	300
Gross profit margin	7,000

Yes, Model X should be developed.

Life Cycle Costing approach

Traditional Gross Profit approach:	($'000)
Sales	10,000
COGS:	
Direct labour	900
Direct materials	1,800
Manufacturing overhead	300
Gross profit margin	7,000
Brand building	4,000
R&D	2,900
Customer service (set up and running cost)	200
Termination cost (disposal of related assets, inventory write-off)	200
Abnormal wastage of materials due to learning curve	50
Life cycle profit / (loss)	(350)
Excluded costs:	
HR and admin support and legal support	300
Loss of disposal of idle equipment	500

Model X is expected to suffer a loss of $350,000 during its life cycle when all relevant costs in developing, marketing, manufacturing and servicing the product are included. Unless Model X has significant strategic value to TTC, e.g. to develop an own brand to expand to a new market, it should not be launched unless total life cycle costs can be reduced and controlled to at least a breakeven level.

R&D, branding, customer service, termination cost and abnormal wastage are all part of the life cycle costs incremental to Model X's development, i.e. the company will not incur these costs if Model X is not developed.

HR, administration and legal support are excluded since they are allocated and these functions are shared by existing staff.

Loss of disposal of idle equipment is a sunk cost and is therefore irrelevant to the decision.

Points to note:

- Remember sunk cost should be excluded in the calculation

(c)

Advantage
- Give a better picture of the total performance of a product, particularly a new product.
- Help identify design costing problems at an early phase and therefore reduce future maintenance and warranty costs.
- Help shape product strategy to establish early presence and create early mover advantage.
- Provide an indication of financial return over the life of a product.
- Can be used to determine a target selling price at different stages of a product's life cycle

Disadvantage
- Additional cost may be needed to enhance accounting system to capture cost over life cycle.
- Ignores time value of money.
- Substantial uncertainty in estimation of sales, cost, R&D etc. on a product with a long cycle and / or when business is operating under a dynamic environment.
- Inclusion of some costs may be subjective such as the accounting system development, product enhancement. This problem can be solved by applying incremental cost analysis by asking the question: is this cost incurred or saved if the product is launched?

Q10.2 Practice question - Dec 2013 Q6

You are the CFO of ABC Limited, a company listed on the Hong Kong Stock Exchange. In about one week's time, you are meeting with the Board of Directors and you are expected to propose the dividends for the latest financial year 2012/13 for their consideration.

Historical Earnings Per Share (EPS) and Dividend Per Share (DPS) are summarized below.

	EPS ($)	DPS (to common shareholders) ($)
2009/10	1	0.6
2010/11	1.12	0.66
2011/12	1.19	0.726
2012/13	4.793	To be proposed

The company has adopted this dividend policy for over 10 years.

During the year ending 2012/13, the company has 10,000 $0.1 par value common shares and 1,000 $1 par value, 4%, cumulative redeemable preference shares issued and outstanding. The preference shares were issued at the beginning of 2012/13. All common and preference shares have existed since the beginning of the financial year and there has been no new issue or repurchase of shares.

The 2012/13 EPS, based on the audited account is $4.793, its breakdown is as follows:

- $3 as the gain on sale of an asset, a one-off event.
- $1.309 from core business earnings, expected to be recurring.
- $0.484 extra earnings due to a new project launched one year ago. These earnings have a very high chance of becoming recurring 1 year later, but, as of today, there is still uncertainty.

The dividend for the cumulative preference shares is equivalent to a reduction of EPS of $0.2 for the purpose of evaluating earnings attributable to common shareholders.

The company did not pay any interim dividend.

The Board is very concerned that an inappropriate dividend policy for 2012/13 will depress the share price leading to difficulties in equity financing in the coming year.

Required:

(a) What is the average (arithmetic average) historical payout ratio for the past three years, 2009/10, 2010/11 and 2011/12? Describe the dividend policy that the Board has been following.

(5 marks)

(b) You are evaluating whether the policy identified in part (a) is still applicable for 2012/13. For each of the following policy choices i.e. policies 1, 2 and 3, propose for the Board's consideration specifying how much special and general dividends should be distributed from 2012/13 earnings. Support your answers with calculations.

(Policy 1) Applying the historical policy to the whole distributable current earnings;

(Policy 2) Signalling that the core business earnings as well as the new project earnings will be both recurring and the sale of assets is a one-off;

(Policy 3) Signalling only the core business earnings are recurring, extra project earnings are not certain and the sale of assets is a one-off.

(6 marks)

(c) For each of the dividends proposed in part (b), discuss the shortcomings. Conclude by recommending with justification which policy the company should follow.

(8 marks)

Suggested solutions – Q10.2

Answer 6(a)

2009/10: $0.60 / $1 = 0.6 (60%)

2010/11: $0.66 / $1.12= 0.59 (59%)

2011/12: $0.726 / $1.19 = 0.61 (61%)

Average: (0.6 + 0.59 + 0.61) / 3 = 0.6 (60%)

The company has been adopting a constant dividend payout policy, distributing on average 60% of earnings as dividends.

Answer 6(b)

Policy	Special Dividend	Regular Dividend	Total ($)
1	0	2.76 = (4.793 - 0.2) x 0.6	2.76
2	3	0.956 = (4.793 - 3 - 0.2) x 0.6	3.956
3	3.29 = 3 + 0.484 x 0.6	0.665 = (4.793 - 3 - 0.2 - 0.484) x 0.6	3.955

Answer 6(c)

Policy (1)

This dividend is misleading as the asset sale is a one off, giving the wrong signal to the market that this amount is recurring, leading to great disappointment next year when the dividend is back to its normal level.

Policy (2)

This signals good news (extra earnings to be recurring) prematurely. If the earnings are not repeated next year, dividends will be reduced, shareholders will be disappointed and then will depress the share price.

Policy (3)

Understate future recurring growth potential as the general dividend is lower than prior years as some dividends will be given to preference shareholders. The common shareholders may get the wrong message that future earnings will decline and this could result in pressure on the share price.

Recommendation

As the directors are very concerned about the share price due to these wrong signals, it is recommended to follow Policy 2. This is because even though it can be argued that the high earnings growth will be confirmed only one year later, the current assessment that it will be successful is high. Given the risk of an improper under-performing signal depressing the share price is higher than the risk of not meeting growth expectations, policy 2 is preferred.

Panelist report

Question 6(a) – 5 Marks

This question required the candidates to calculate the dividend payout ratio. The question was answered well.

Question 6(b) – 6 Marks

This question required the candidates to demonstrate their knowledge of special and general dividend calculations under different policy scenarios. The key aspect was the signalling effect of these policies. The answer required a good knowledge of dividend calculations in order to signal the appropriate message to the shareholders.

This question was answered poorly, with the following two major weaknesses observed from candidates' answers:

- Unable to differentiate the three policy choices in terms of distribution between general and special dividends; and
- The impact on EPS from the preference dividends was not considered in the dividend payment calculation to common shareholders.

Question 6(c) – 8 Marks

This question required the candidates to discuss the shortcomings of the three policy choices in Question 6(b). This question also asked for recommendations as to the appropriate policy to be adopted by the company. The candidates who performed exceptionally well were able to critically discuss the implications for dividends due to a one-off sale of assets and the extra earnings of a new project as a possible recurring event, and therefore provided well-argued recommendations.

Most candidates failed to highlight the signalling effect of dividend policy and therefore lost substantial marks in this question.

Q7.2 Practice question - MB Jun 2017

Required:

State the typical roles and functions of treasury operations within a non-financial services corporation (6 marks)

Suggested solutions – Q7.2

Roles and functions of corporate treasury operations:

- Financial risk management such as hedging foreign exchange, interest rate exposure and other financial risk.
- Efficient sources of long and short-term financing management by connecting to international capital markets.
- Capital investment funding planning and management.
- Maintain a healthy banking relationship.
- Compliance with rules and regulations related to treasury functions.
- Report to the board on a regular basis regarding performance.
- Monitor third party credit risk.
- Design and implementation of internal control procedures related to treasury operations.