Summary Management Accounting

Management accounting for business | 6th edition

# Chapter 1: Introduction to management accounting

**Management accounting**: provision of information to people within the organization to help them make better decisions and improve the efficiency and effectiveness of existing operations

**Financial accounting**: provision of information to external parties outside the organization

|  |  |
| --- | --- |
| Financial accounting | Management accounting |
| Statutory requirement to produce annual financial accounts | Optional |
| Describe whole of the business | Focusses on small parts of the organization |
| Must conform with legal requirements and generally accepted accounting principles | Not required to adhere to generally accepted accounting principles |
| Reports what has happened in the past | Concerned with future as well as past information |
| Detailed set of financial accounts is published annually, less detailed semi-annually | Requires information more quickly to act on it |

**Decision-making process**

1. Identify objectives
2. Search for alternative courses of action
3. Select appropriate courses of action
4. Implement the decisions
5. Compare actual and planned outcomes
6. Respond to divergences from plan

Success factors to provide customer satisfaction

* Cost efficiency
* Quality
  + **Total quality management (TQM)**: all business functions are involved in a process of continuous quality improvement that focuses on delivering products or services of consistently high quality
* Time as a competitive weapon
  + Minimizing cycle time
* Innovation and continuous improvement
  + **Benchmarking**: measuring a firm’s products, services or activities against the other best performing organizations (internal/external)
  + **Employee empowerment**

Functions of management accounting

1. Allocate costs between cost of goods sold and inventories for internal and external profit reporting
2. Provide relevant information to help managers make better decisions
3. Provide information for planning, control, performance measurement and continuous improvement

# Chapter 2: an introduction to cost terms and concepts

**Cost object**: any activity for which a separate measurement of costs is desired

Manufacturing organizations 🡪 purchase raw materials from suppliers and convert these materials into tangible products through the use of labour and capital inputs

* Raw materials inventories
* Work in progress (WIP) inventory
* Finished goods inventory

Merchandising organizations 🡪 sell tangible products that they have previously purchased in the same basic form from suppliers

* Finished goods inventory

Service organizations 🡪 provide tasks or activities for customers (perishable services that cannot be stored for future use)

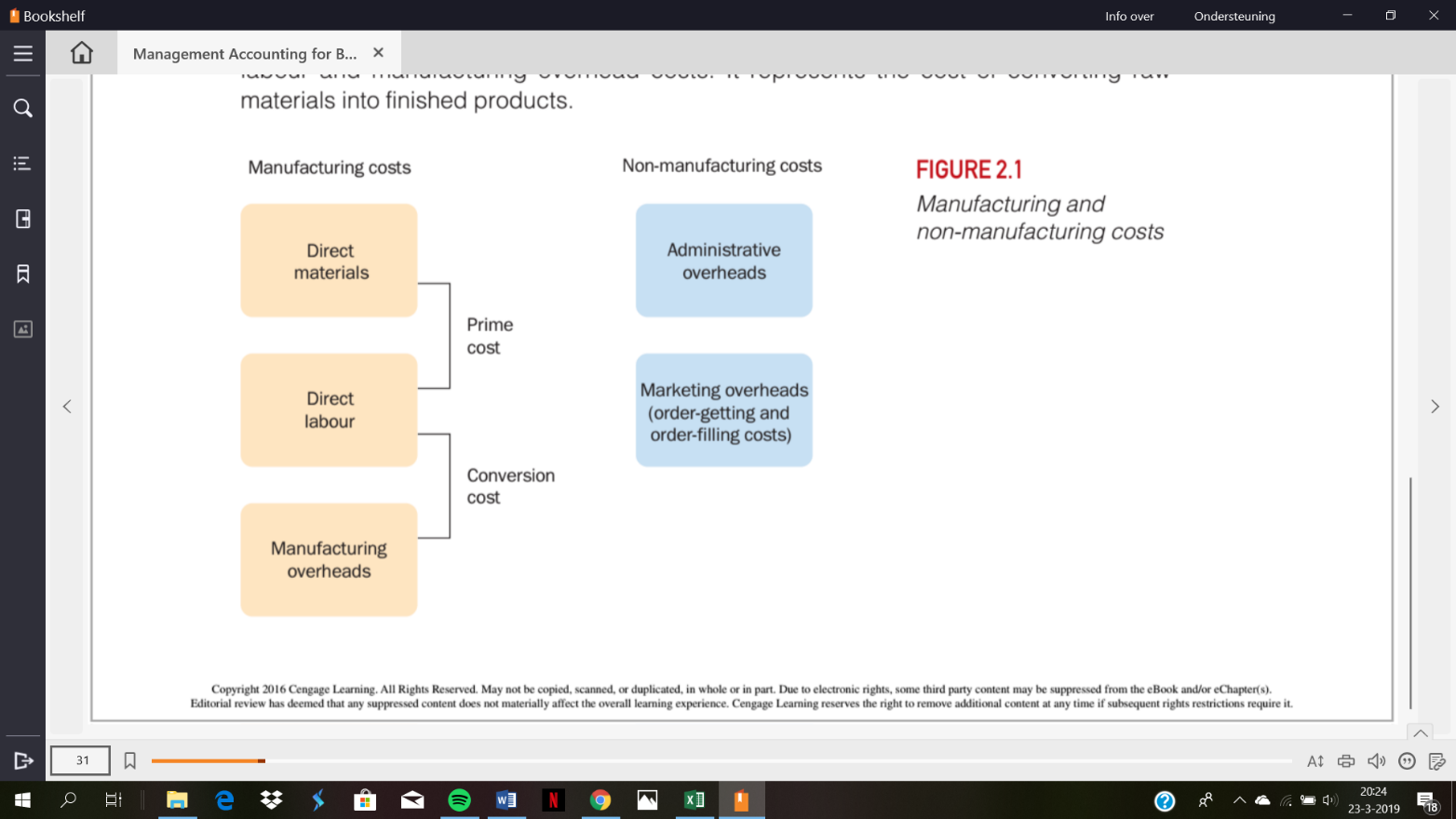
* Maybe WIP inventory

## Direct and indirect costs

**Direct material costs**: material costs that can be specifically and exclusively identified with a particular cost object

**Direct labour costs**: labour costs that can be specifically and exclusively identified with a particular cost object

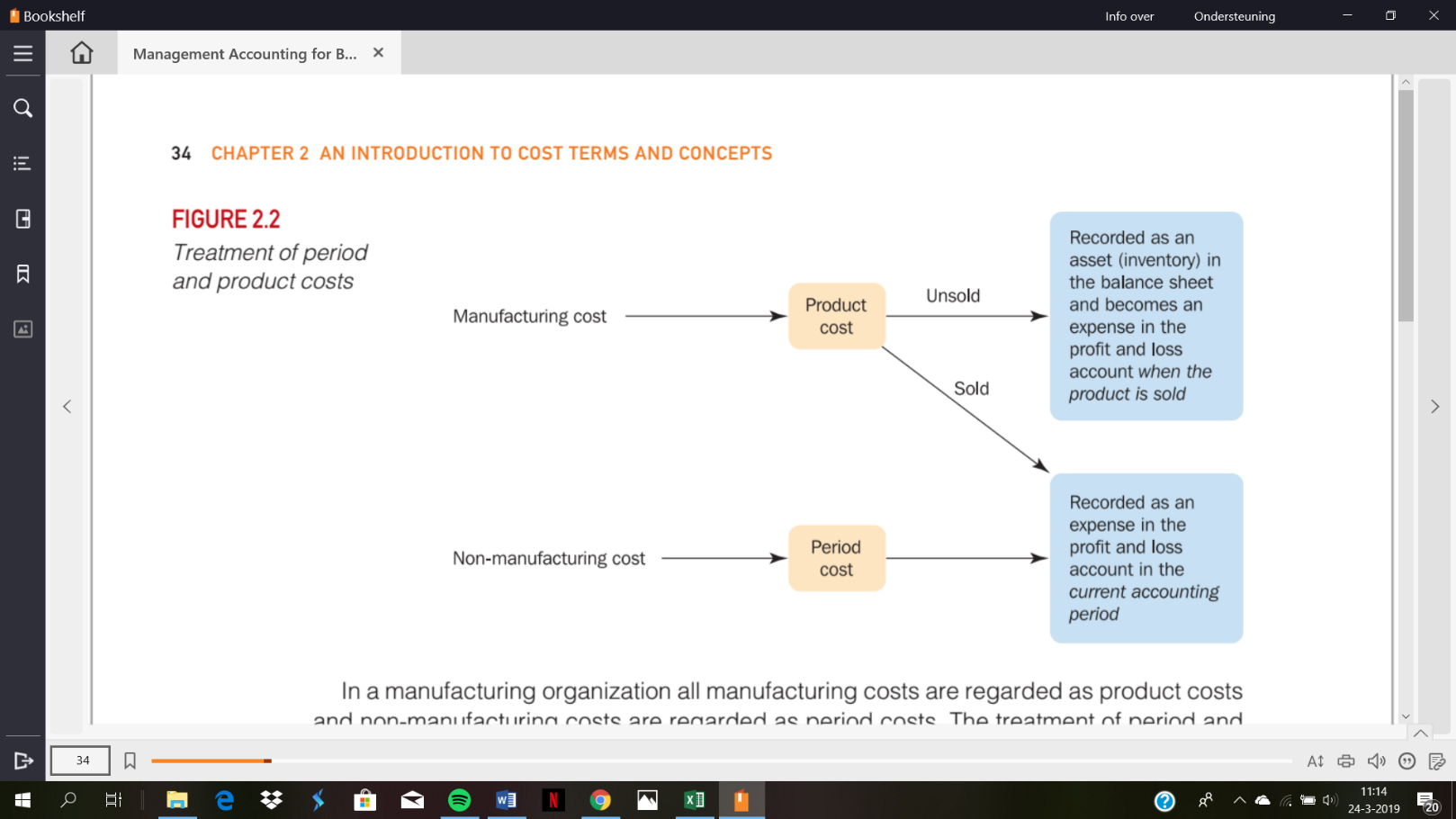
**Indirect costs**: cannot be identified specifically and exclusively with a given cost object (also called **overhead**)

* Manufacturing overhead: all costs of manufacturing apart from direct labour and direct material costs
* Administration overhead: all costs associated with the general administration of the organization that cannot be assigned to either manufacturing, marketing or distribution overheads
* Marketing (selling) overhead: costs that are necessary to market and distribute a product or service

**Cost allocation**: process of assigning costs when a direct measure does not exist for the quantity of resources consumed by a particular cost object

## Period and product costs

**Product costs**: costs that are identified with goods purchased or produced for resale

**Period costs**: costs that are not included in the inventory valuation and as a result are treated as expenses in the period in which they are incurred

Non-manufacturing costs are treated as period costs and not included in the inventory evaluation because 🡪

* There is no guarantee that non-manufacturing costs will generate future revenue, because they do not represent value added to any specific product
* Many non-manufacturing costs are not incurred when the product is being stored, hence it is inappropriate to include such costs within the inventory valuation

## Cost behaviour

**Variable costs** 🡪 vary in direct proportion to the volume of activity

**Fixed costs** 🡪 remain constant over a wide ranges of activity for a specified time period

**Semi-fixed costs** 🡪 Costs that remain fixed within specified activity levels for a given amount of time but which eventually increase or decrease by a constant amount at critical activity levels

**Semi-variable costs** 🡪 Costs that contain both a fixed and a variable component, also known as mixed costs

## Relevant and irrelevant costs and revenues

**Relevant costs and revenues**: future costs and revenues that will be changed by a decision

**Irrelevant costs and revenues**: costs and revenues that will not be affected by the decision

**Avoidable costs**: costs that may be saved by not adopting a given alternative

* Only avoidable costs are relevant for decision-making purposes

**Unavoidable costs**: cannot be saved

**Sunk costs**: costs of resources already acquired where the total will be unaffected by the choice between various alternatives

* Irrelevant for decision-making
  + HOWEVER, not all irrelevant costs are sunk costs

**Opportunity cost**: cost that measures the opportunity that is lost or sacrificed when the choice of one course of action requires that an alternative course of action is given up

## Incremental and marginal costs

**Incremental (differential) costs**: difference between costs of each alternative action that is being considered

* Can include both fixed and variable costs
* Similar to **marginal costs**
  + Difference is that marginal costs represents the additional cost of one extra unit, whereas incremental cost represents additional cost resulting from a group of additional units

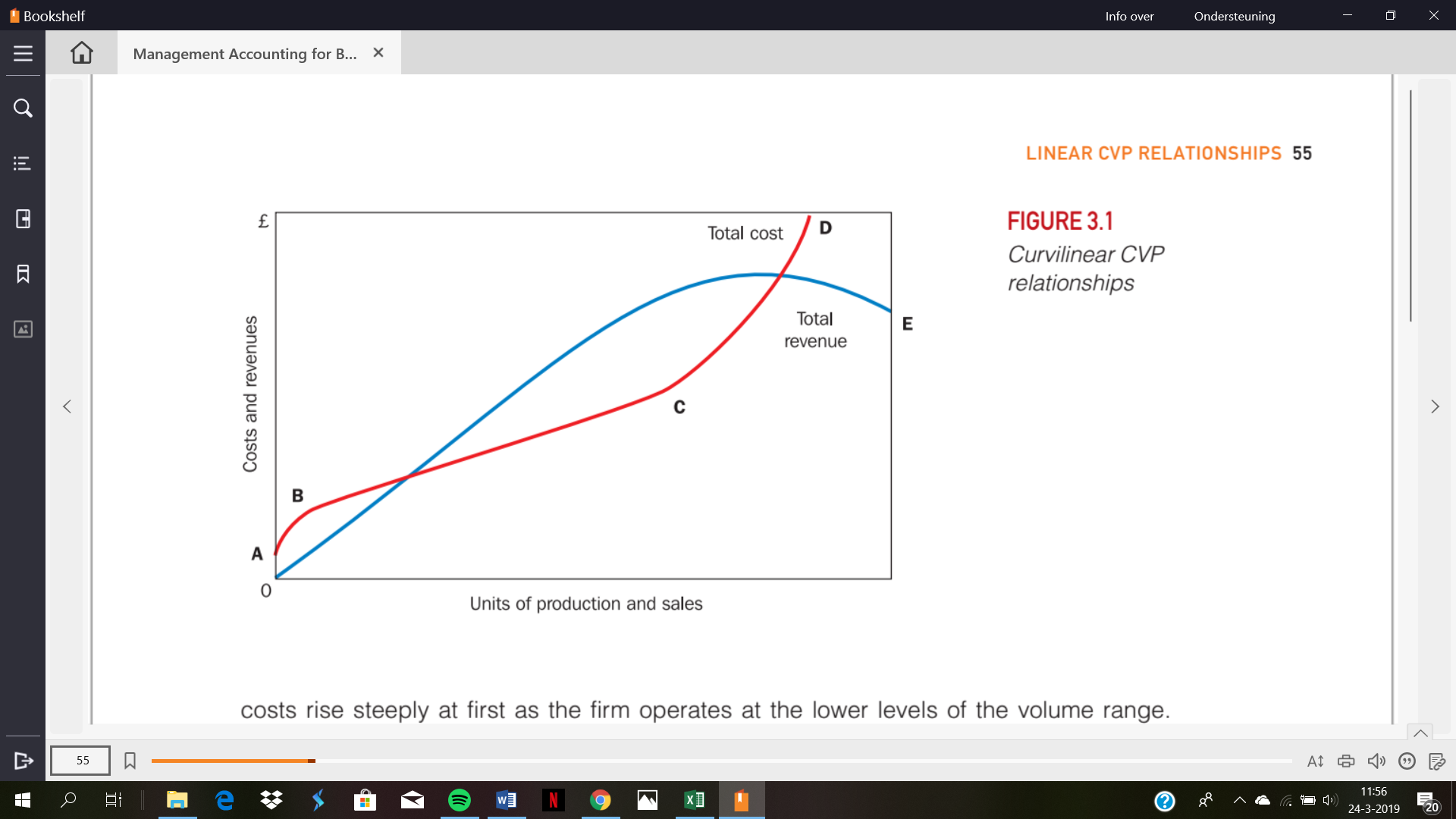
# Chapter 3: cost-volume-profit analysis

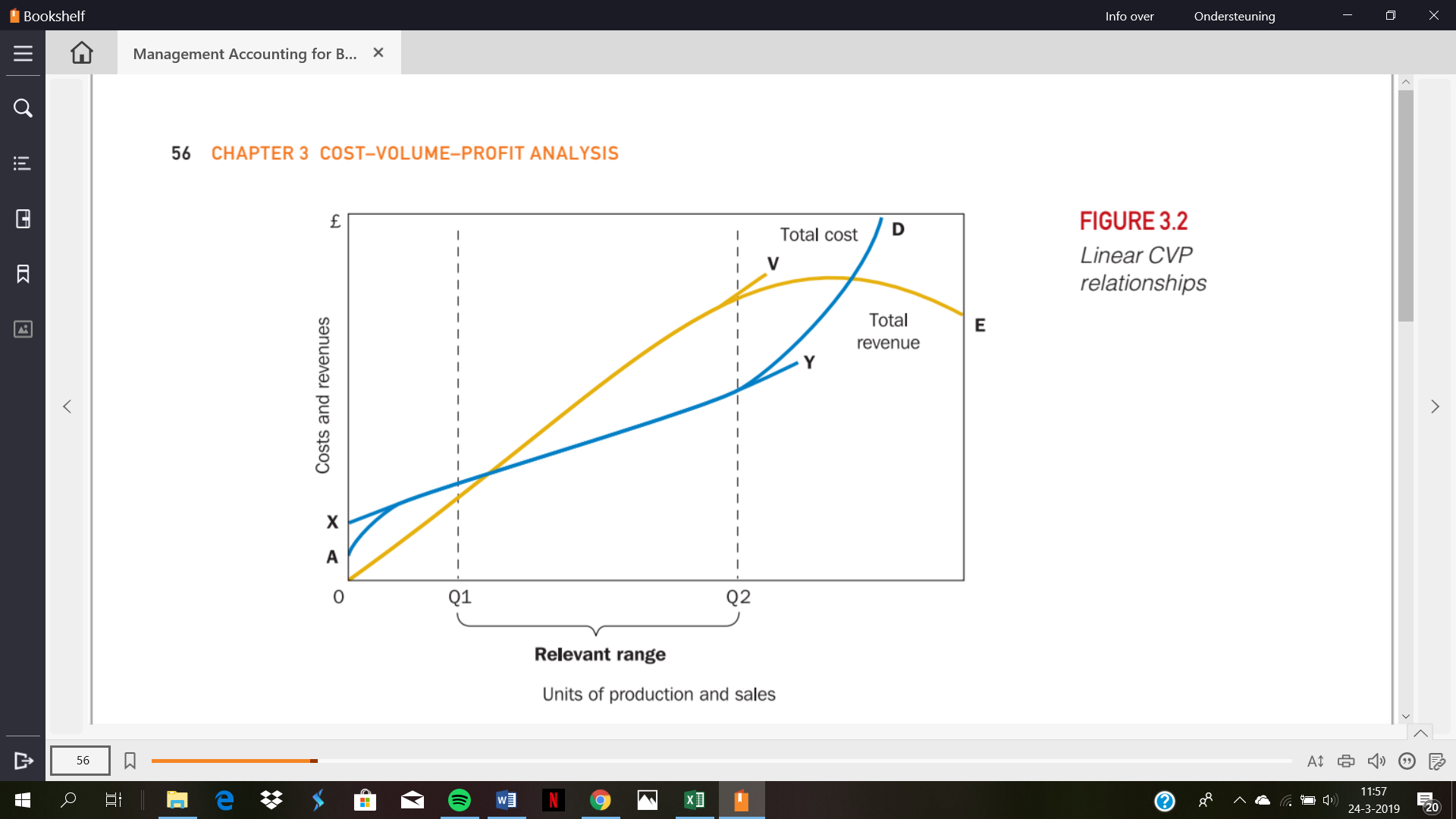
**CVP-analysis** 🡪 examines the relationship between changes in activity and changes in total sales revenue, costs and net profit

* Will enable management to identify critical output levels, e.g **break-even point**)

**Increasing returns to scale**: taking advantage of economies of scale

**Decreasing returns to scale**: operating beyond capacity





## Numerical approach to CVP-analysis

**Contribution margin** = sales revenue – variable costs

**Break-even** = fixed costs / contribution per unit

**Units sold for target profit** = (fixed costs + target profit) / contribution per unit

**Total profit** = total contribution – fixed costs

**Total required revenue** = (fixed costs + total variable costs + target profit)

**Required selling price** = total required revenue / sales volume

**Additional required sales volume** = increase in fixed costs / contribution per unit

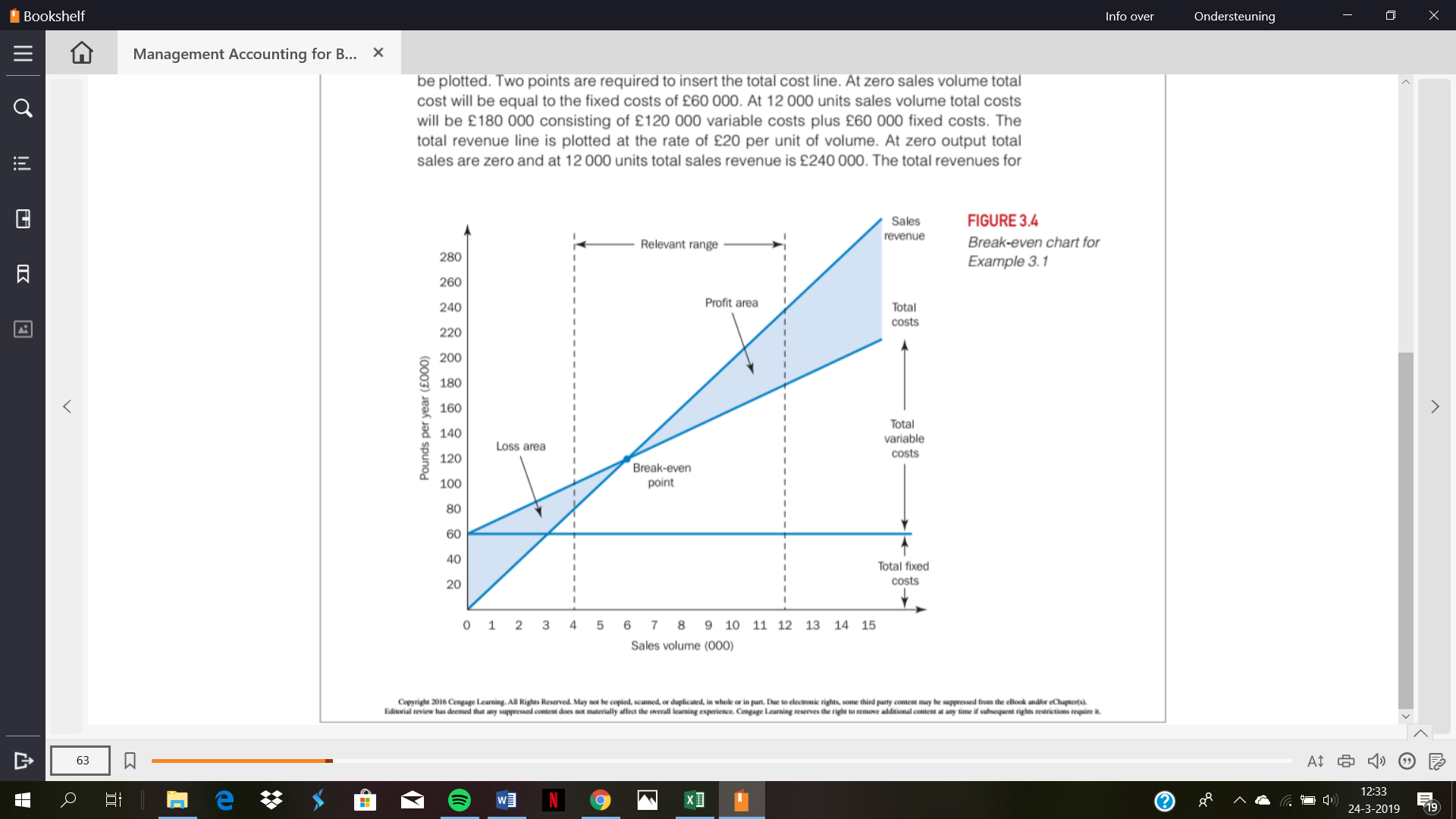
**Contribution margin ratio (profit-volume ratio)** = contribution / sales

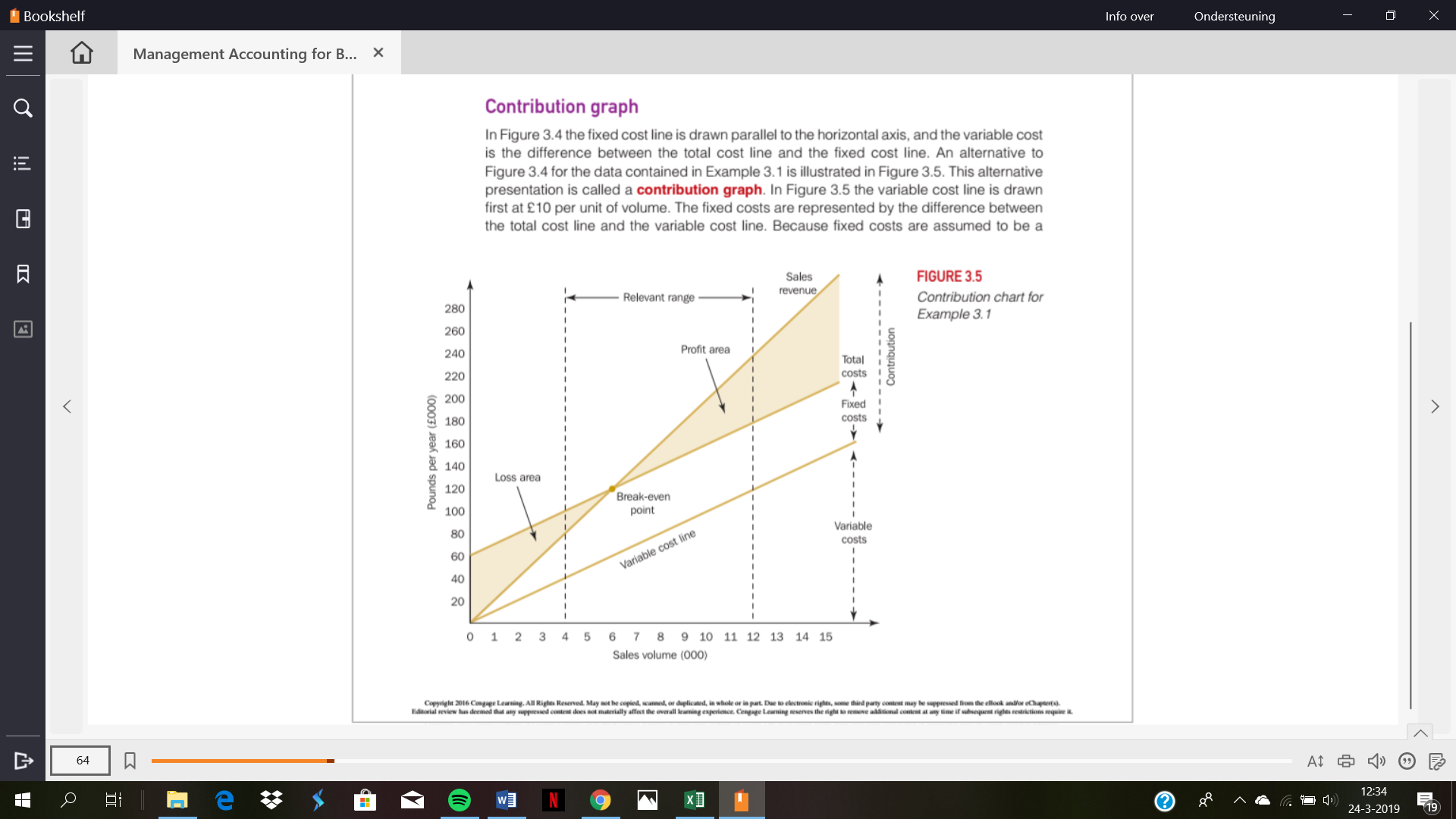
* Represents the proportion of each 1 pound of sales available to cover fixed costs and provide for profit

**Profit** = (sales revenue \* PV-ratio) – fixed costs

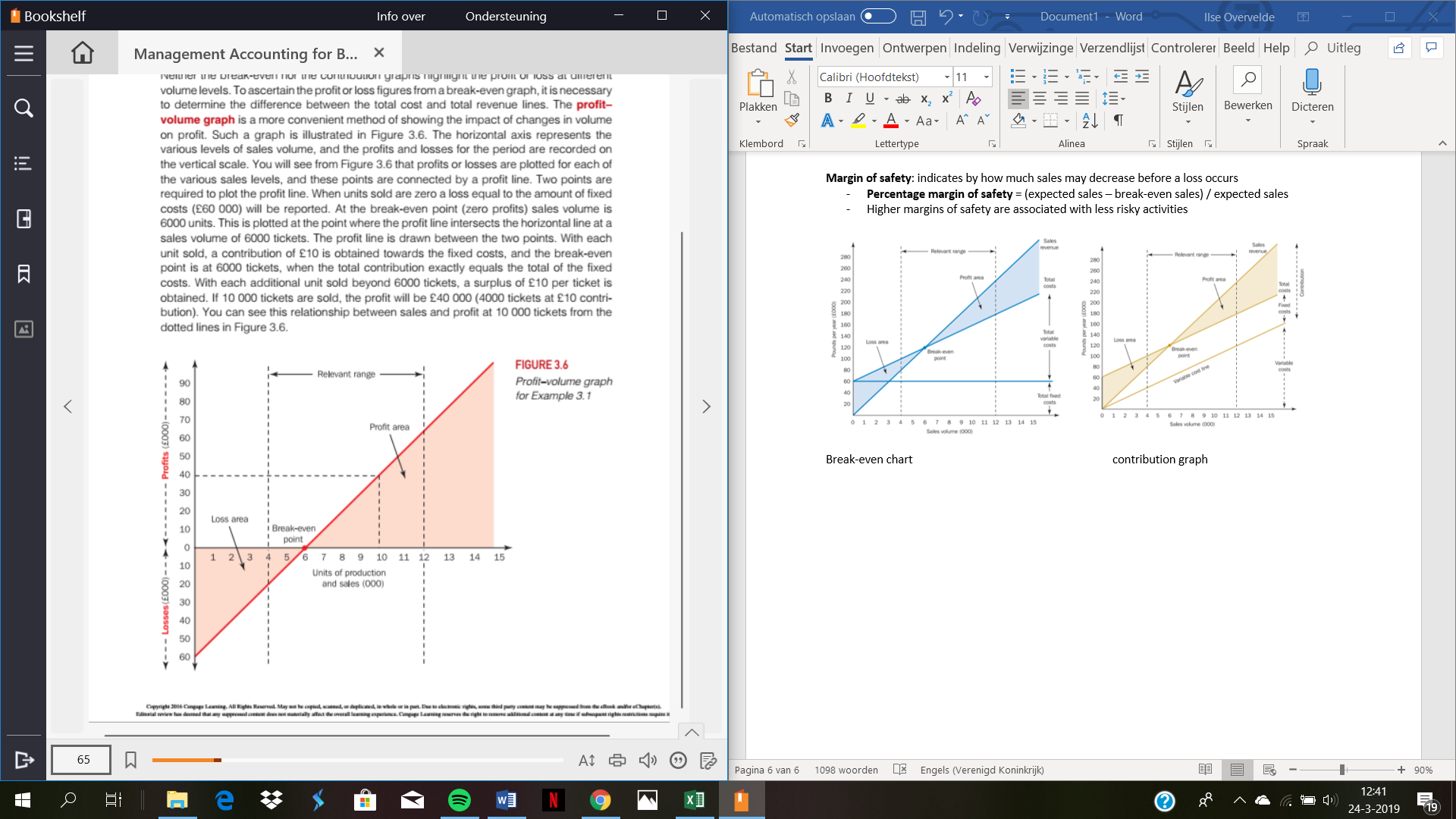
**Break-even sales revenue** = fixed costs / PV-ratio

**Margin of safety**: indicates by how much sales may decrease before a loss occurs

* **Percentage margin of safety** = (expected sales – break-even sales) / expected sales
* Higher margins of safety are associated with less risky activities



Break-even chart contribution graph



Profit-volume graph

## Multi-product CVP-analysis

**Note**: the break-even point is not a unique number: it varies depending upon the composition of the sales mix

* In general, an increase in the proportion of sales of higher contribution margin products will decrease the break-even point, whereas increases in sales of the lower margin products will increase the break-even point

**Operating leverage** 🡪 measure of sensitivity of profits to changes in sales

* The greater the degree in operating leverage, the more that changes in sales activity will affect profits
  + High operating leverage leads to higher risk arising from the greater volatility of profits and higher break-even point
* **Degree of operating leverage** = contribution margin / profit

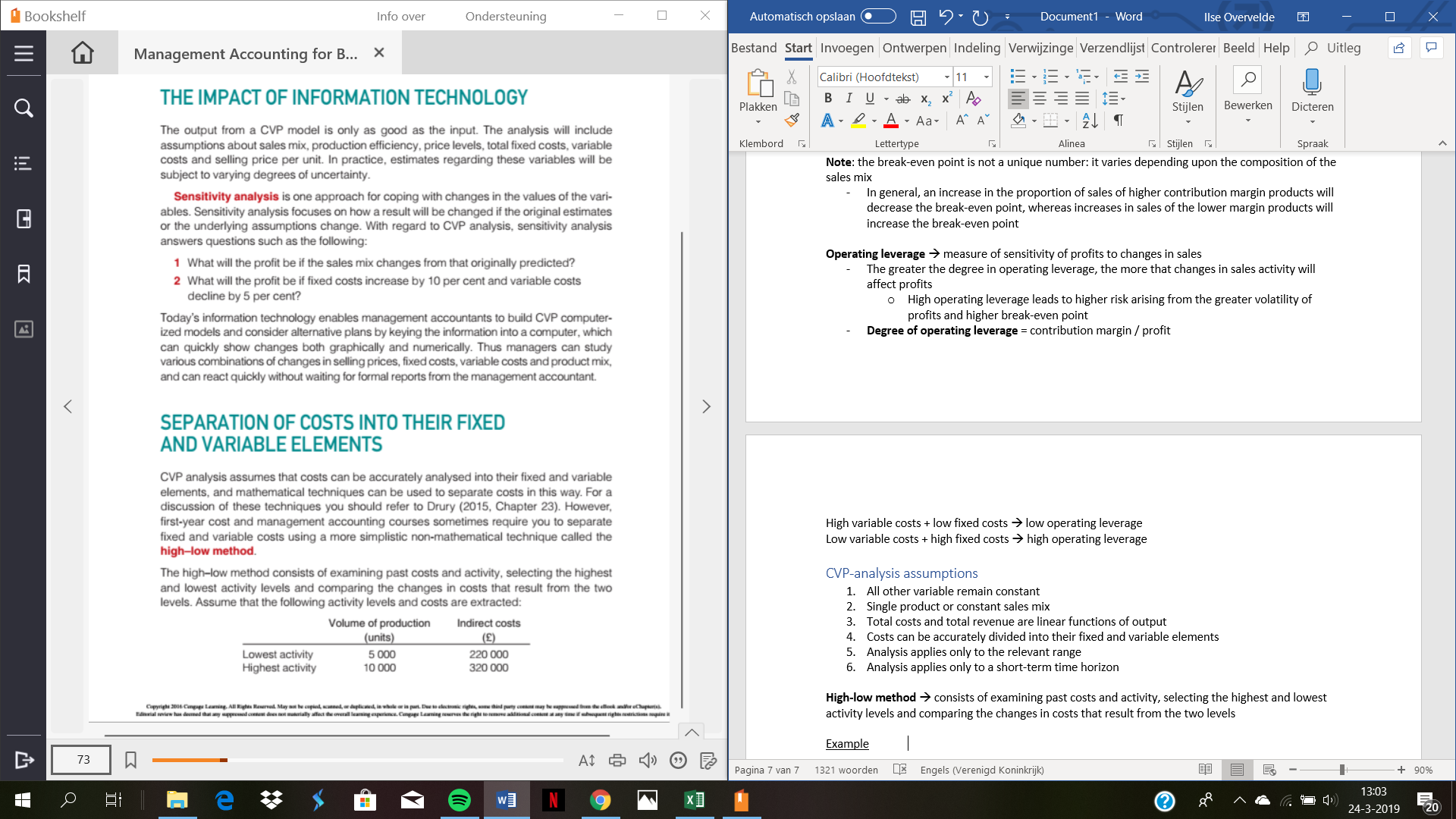
High variable costs + low fixed costs 🡪 low operating leverage

Low variable costs + high fixed costs 🡪 high operating leverage

## CVP-analysis assumptions

1. All other variable remain constant
2. Single product or constant sales mix
3. Total costs and total revenue are linear functions of output
4. Costs can be accurately divided into their fixed and variable elements
5. Analysis applies only to the relevant range
6. Analysis applies only to a short-term time horizon

**High-low method** 🡪 consists of examining past costs and activity, selecting the highest and lowest activity levels and comparing the changes in costs that result from the two levels

Example

If variable costs are constant per unit and the fixed costs remain unchanged, increase in costs will be due entirely to an increase in variable costs:

**Variable costs** = difference in cost / difference in activity = 100000 / 5000 = 20

**Fixed costs** = total cost – variable cost portion = 220000 – 100000 = 120000

# Chapter 4: measuring relevant costs and revenues for decision-making

Decision making 🡪 only **differential (incremental) cash flows** should be taken into account

* Past costs (**sunk costs**) are not relevant
* Allocated common fixed costs are also irrelevant (e.g **facility sustaining costs**)

**Qualitative/non-financial factors**: factors that cannot be expressed in monetary terms; should also be taken into account

Short term order 🡪 4 factors that must be considered before recommending acceptance of an order 🡪

* Future selling price will not be affected by selling some of the output at a price below the going market price
* No better opportunities will present themselves during the period
* Company has unused resources that have no alternative uses that will yield a contribution to profits
* Direct labour force and fixed overheads cannot be reduced in the short term

Long term order 🡪 fixed costs might change, since direct labour and fixed overheads can be reduced

When sales demand is in excess of a company’s productive capacity, the resources responsible for limiting the output should be identified (**limiting factors**) 🡪 often limited in short-term

* Calculate contribution per limiting factor, rank possibilities in order of profitability

Replacement of equipment 🡪 **written down value** of old equipment is irrelevant

* When not buying a new machine, written down value will be written of as depreciation costs. When buying a new machine, old machine will be written off as a lump sum

**Outsourcing** = the process of obtaining goods or services from outside suppliers instead of producing the same goods or providing the same services within the organization 🡪 **make or buy decisions**

* Keep in mind whether or not capacity has an alternative use when outsourcing or not

Relevant costs of direct materials 🡪

* When purchased at a later date 🡪 estimated purchase price
* When taken from existing inventory 🡪 future replacement cost

Relevant cost of direct labour 🡪

* When causal labour is used (hired on daily basis) 🡪 labour cost will be relevant in short-term
* When full capacity exists 🡪 hourly labour rate + opportunity cost consisting of the contribution per hour that is lost by accepting the order

# Chapter 5: pricing decisions and profitability analysis

**Price takers**: firms that have little or no influence over their products or services

* Commodity markets, small firms operating in industry where prices are set by dominant market leaders

**Price setters**: firms that have some discretion over setting the selling price of their products or services

* Highly customized or differentiated products, market leaders

## Price-setting firm facing short-run pricing decisions

* One-time special order in competition with other suppliers 🡪 only incremental costs
  + Extra materials
  + Extra part-time labour, overtime, etc.
  + Extra energy and maintenance costs
* Must meet following conditions 🡪
  + Sufficient capacity available (if fully utilized, opportunity costs of scarce resources must be covered)
  + Bid price will not affect future selling prices
  + Order will utilize unused capacity for only a short period and capacity will be released for use on more profitable opportunities

## Price-setting firm facing long-run pricing decisions

Pricing customized products/services 🡪

* Usually one/few customers 🡪 volume is known
* **Cost-plus pricing**: approach to pricing customized products and services that involves calculating product costs and adding the desired profit margin
  + high demand = high mark-up
  + more competition = lower mark-up
* cost-base pricing provides target price 🡪 may be altered by management

pricing non-customized products/services 🡪

* many different customers 🡪 both price and volume is unknown
* cost-plus selling prices are estimated for a range of potential sales volumes
  + management must assess likelihood of selling the volumes at the prices
  + market research

pricing non-customized products/services using target costing 🡪

* **target costing**: reverse of cost-plus pricing, starting point is the determination of the target selling price
  + first selling price, deduct profit margin, target cost is calculated
  + aim for future cost that will not be higher than the target cost
* marketing factors and customer research provide basis for selling price
* most suited for setting prices for non-customized and high sales volume products

## price-taking firm facing short-run product mix decisions

* accepting short-term business where the incremental sales revenues exceed incremental short-run costs will provide a contribution towards committed fixed costs 🡪 same as price-setting firm facing short-term pricing decisions

## price-taking firm facing long-run product mix decisions

* use **periodic profitability analysis**
  + derive contribution to product line fixed costs for each individual product 🡪 sales revenue – direct variable-fixed costs
  + derive total contribution for each product line 🡪 contribution to product line fixed costs (1) – avoidable fixed costs per product line (not per product)
  + compute profit for company as a whole 🡪 sum of the product line contributions (2) – costs of sustaining the business (not per product/product line)
* used to highlight products/services that require more detailed special studies; not used for decision-making directly!
* Based on **direct costing** principles**:** all costs can be identified with a cost objective at a particular level
* **Absorption costing system**: product line fixed costs and business facility costs are allocated to individual products

Limitations of cost-plus pricing

* Demand is ignored
* Not a pricing ‘floor’ that shields seller from a loss; if sales demand falls below activity level that was used to calculate fixed costs, total sales revenue may be insufficient to cover the total fixed costs

Reasons for using cost-plus pricing

* Plausible prices can be found with ease and speed, no matter how many products
* Computations look factual and precise
* May help a firm to predict prices of other firms
  + If all firms do this, it may encourage price stability

Final price will depend upon **pricing policy**

* **Price skimming policy** = attempt to exploit sections of the market that are relatively insensitive to price changes
  + Should not be adopted when close substitutes are already being marketed
* **Penetration pricing policy** = charging low prices initially with the intention of gaining rapid acceptance of the product
  + when close substitutes are available or market is easy to enter

**Product life cycle**: introductory, growth, maturity, decline

**Customer profitability analysis**: provides important information that can be used to determine which classes of customers should be emphasized/de-emphasized + which price to charge

**Pareto analysis**: analysis based on the observation that a very small proportion of items account for the majority of the value

# Chapter 7: cost assignment

Direct costs 🡪 **direct tracing**

Indirect costs 🡪 **Cost allocations** = process of assigning costs when the quantity of resources consumed by a particular cost object cannot be directly measured

* **cost driver/allocation base** = the basis used to allocate to cost objects
  + allocation base is a significant determinant 🡪 **cause-and-effect allocation/driver tracing**
  + allocation base is not a significant determinant 🡪 **arbitrary allocation**

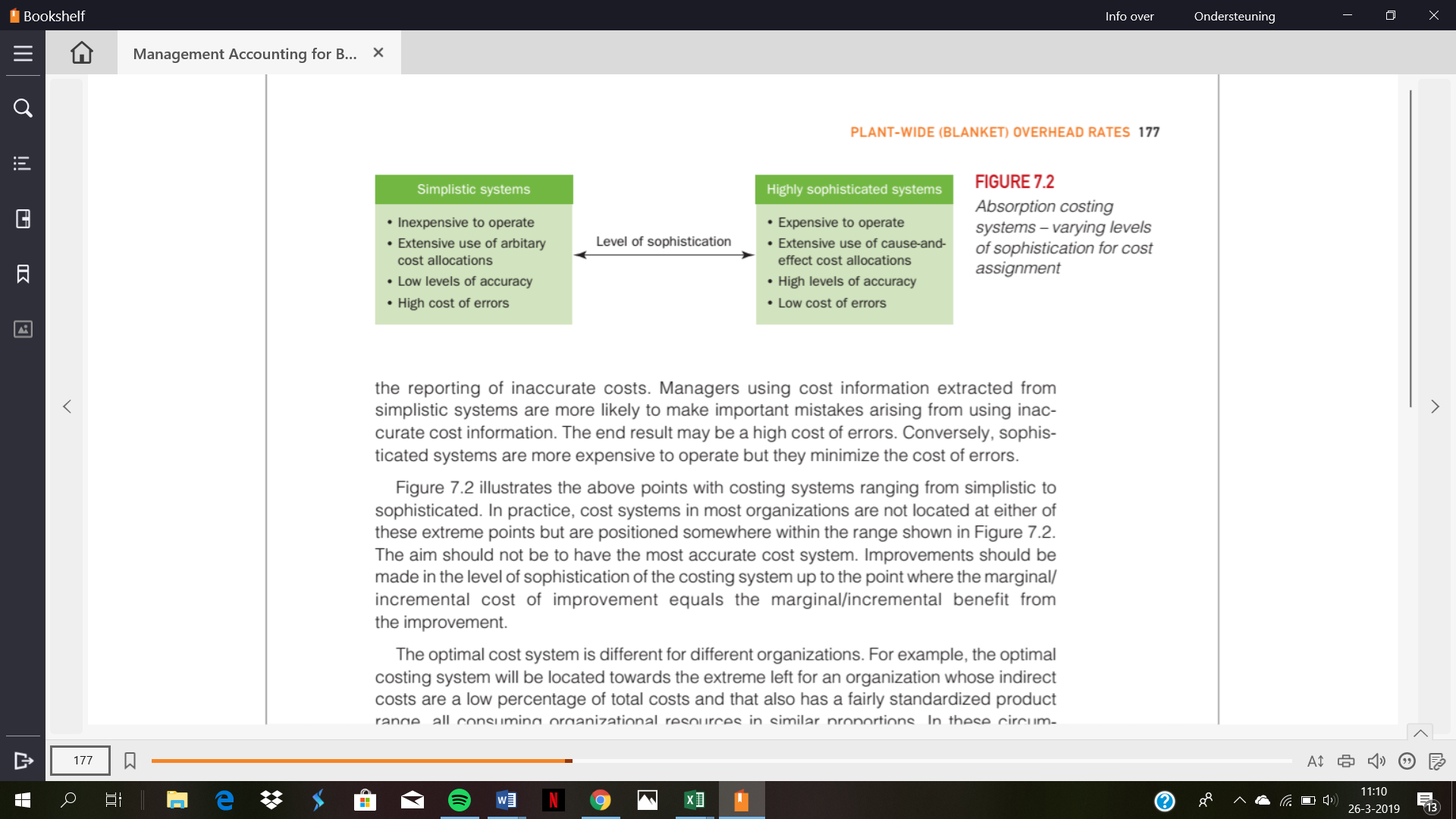
2 types of cost allocation systems 🡪

* **direct** (only direct costs)
* **absorption** (both direct and indirect costs)
  + **traditional costing systems** (ch. 7)
  + **activity-based-costing (ABC) systems** (ch. 8)

Meeting external financial accounting requirements 🡪 only manufacturing costs are assigned

decision making 🡪 also non-manufacturing costs

General idea: traditional systems tend to be simplistic whereas ABC systems tend to be sophisticated



## Traditional costing systems (from left (simplistic) to right)

**Plant-wide (blanket) overhead rate**: single overhead rate that is established for the organization as a whole

* cost allocation:

1. overheads are accumulated in one single plant-wide pool for a period
2. plant-wide rate is computes 🡪 total overheads accumulated / selected allocation base
3. cost assignment 🡪 plant-wide rade \* units of selected allocated base used by each product

* Distinguish between plant-wide and departmental rate
  + Plant-wide only when all products consume same proportions

**Two-stage allocation process**: departmental overhead rates

* First stage 🡪 overheads assighned to **cost centres (cost pools)**

1. Assign manufacturing overheads to production/service cost centres
   * + **Overhead analysis sheet**
     + **First-stage allocation bases**
2. Reallocating costs assigned to service to production cost centres

* Second stage 🡪 costs accumulated in cost centres are allocated to cost objects using selected allocation bases

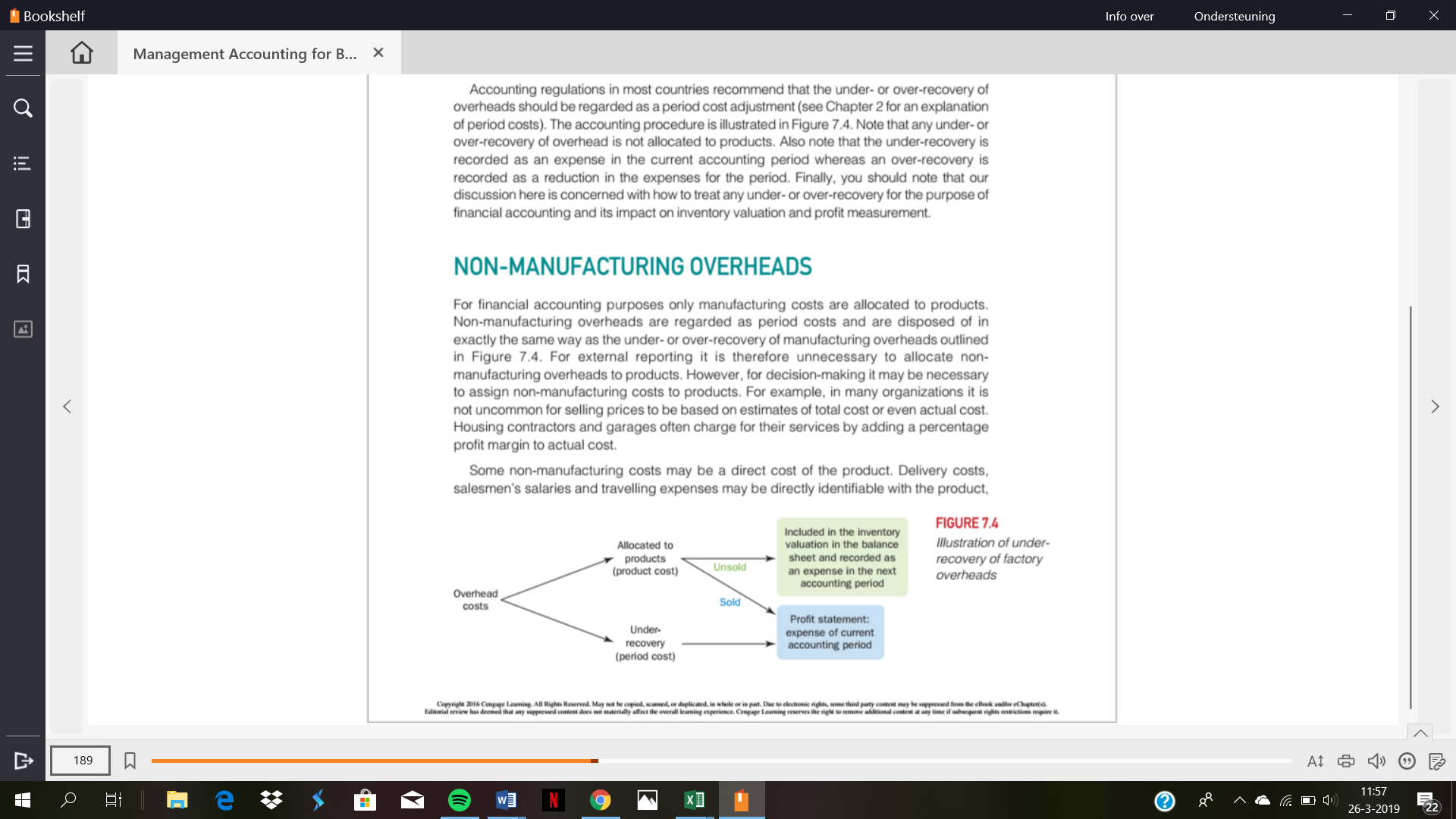
1. Computing separate overhead rates for each production cost centre
   * + **Machine hour rate**  and **direct labour hour rate**  as bases
     + Overhead rate = cost centre overheads / cost centre direct labour hours/machine hours
2. Assigning cost centre overheads to product/cost objects

* More cost centres = more accuracy

Cost computations above represent costs that should be generated for meeting inventory valueation and profit measurements requirements 🡪 for decision-making, non-manufacturing costs should also be taken into account, as well as the fact that some costs might not be relevant for certain decisions

Average, annualized rate based on the relationship of total annual overhead to total annual activity is more representative than a montly rate 🡪 **budgeted overhead rate** based on annual estimated overhead expenditure and activity

* Results in **under- or over-recovery of overheads** whenever actual activity/overhead expenditure is different from budgeted overheads and activity (**volume variance/fixed overhead expenditure variance**)

Allocation of non-manufacturing overheads 🡪

* Select allocation base that corresponds most closely to non-manufacturing overheads e.g based on the ability of the products to bear such costs (manufacturing costs)
  + Non-manufacturing overhead = estimated non-manufacturing overhead / estimated manufacting cost

**job-order system** is inappropriate for many non-manufacturing organizations for the following reasons 🡪

* No unique services for customers
* No need to assign costs to individual customers to determine prices since prices are determined by market forces rather than costs
* No inventory valuation needed really

Above organizations require costing systems that support profitability analysis rather than job-order costing systems/suitable allocation bases

# Chapter 8: Activity-based costing

Major differences between ABC and traditional systems 🡪

* ABC has overall more **activity cost centres**  than traditional systems
* ABC uses many different types of second-stage cost drivers rather than only direct labour and machine hours
* ABC establishes separate cost driver rates for the support activities instead of reallocating them to production cost centres

ABC is therefore more accurate than traditional cost systems.

ABC 🡪 uses both volume-based and non-volume-based cost drivers (traditional systems use only volume-based)

* **Volume-based cost drivers**: assume that a product’s consumption of overhead resources is directly related to units produced
  + Activites are performed each time a unit of the product/service is produced
* **Non-volume-based cost drivers**: cost objects use alternative measures instead of assuming that product’s consumption of overhead resources is directly related to the number of units performed
  + e.g machine set-up

product cost distortion might result with traditional costing systems when 🡪

* non-volume-related overhead costs are a large proportion of total overhead costs
* **product diversity** applies 🡪 when products consume different overhead actvities in dissimilar proportions

Traditional and ABC use the same basic approach 🡪 they represent a single cost assignment system rather than two separate systems

* ABC-system is just more sophisticated/complex
  + p.206-p.211 🡪 illustration of the two-stage allocation process for ABC (good example!)

4 steps in designing ABC/sophisticated costing systems 🡪

* first stage 🡪

1. identifying activities
   * + At a reasonable level of aggregation based on costs vs benefits
     + E.g materials procurement can be divided into purchasing, receiving and issuing of materials
     + Choice of activities is influenced by factors such as cost of activity centre and ability to provide a satisfactory determinant
2. assigning costs to cost centres for each activity
   * + no use of arbitrary allocations 🡪 rather use **resource cost drivers** (cause-and-effect cost drivers)

* second stage 🡪

1. determining cost driver for each activity
   * + cost driver should provide a good explanation of costs and should be easily measurable (cost of measurement should be taken into account!)
     + **transaction drivers**: count the number of times an activity is performed (least expensive but less accurate)
     + **duration drivers**: represent the amount of time required to perform an activity (more expensive but more accurate)
2. assigning costs to products according to the product’s demand for activities

Activity hierarchies 🡪 manufacturing activities can be classified along a cost hierarchy dimension 🡪

1. unit-level activities
   * performed each time a unit is produced
   * expenses include direct labour, direct materials, energy costs and expenses in proportion to machine processing time (e.g maintenance)
   * cost drivers include labour hours, machine hours and quantity of materials
2. batch-level activities
   * performed each time a batch of goods is produced
   * cost varies with the number of batches, but is fixed for all units within the batch
   * traditional costing systems treat batch-related expenses as fixed costs, but ABC assumes that they vary with the number of batches
3. product-sustaining activities
   * performed to enable the production and sale of individual products
   * costs are incurred irrespective of the number of units/batches; expenses will tend to increase as the number of products manufactured increases
   * ABC uses product-level bases (e.g number of active part numbers) to assign costs
4. facility sustaining activities
   * performed to support general manufacturing process and include general administrative staff, plant management and property costs
   * unavoidable and irrelevant for most decisions and should therefore not be assigned to products
   * regarded as common costs for ALL products and deducted as a lmp sum from the total of the operating margins for ALL products

|  |  |
| --- | --- |
| Traditional system when | ABC-system when |
| Low levels of competition | Intensive competition |
| Non-volume-related indirect costs are low proportion of total indirect costs | Non-volume-related indirect costs are high proportion of total indirect costs |
| Low product diversity | High product diversity |

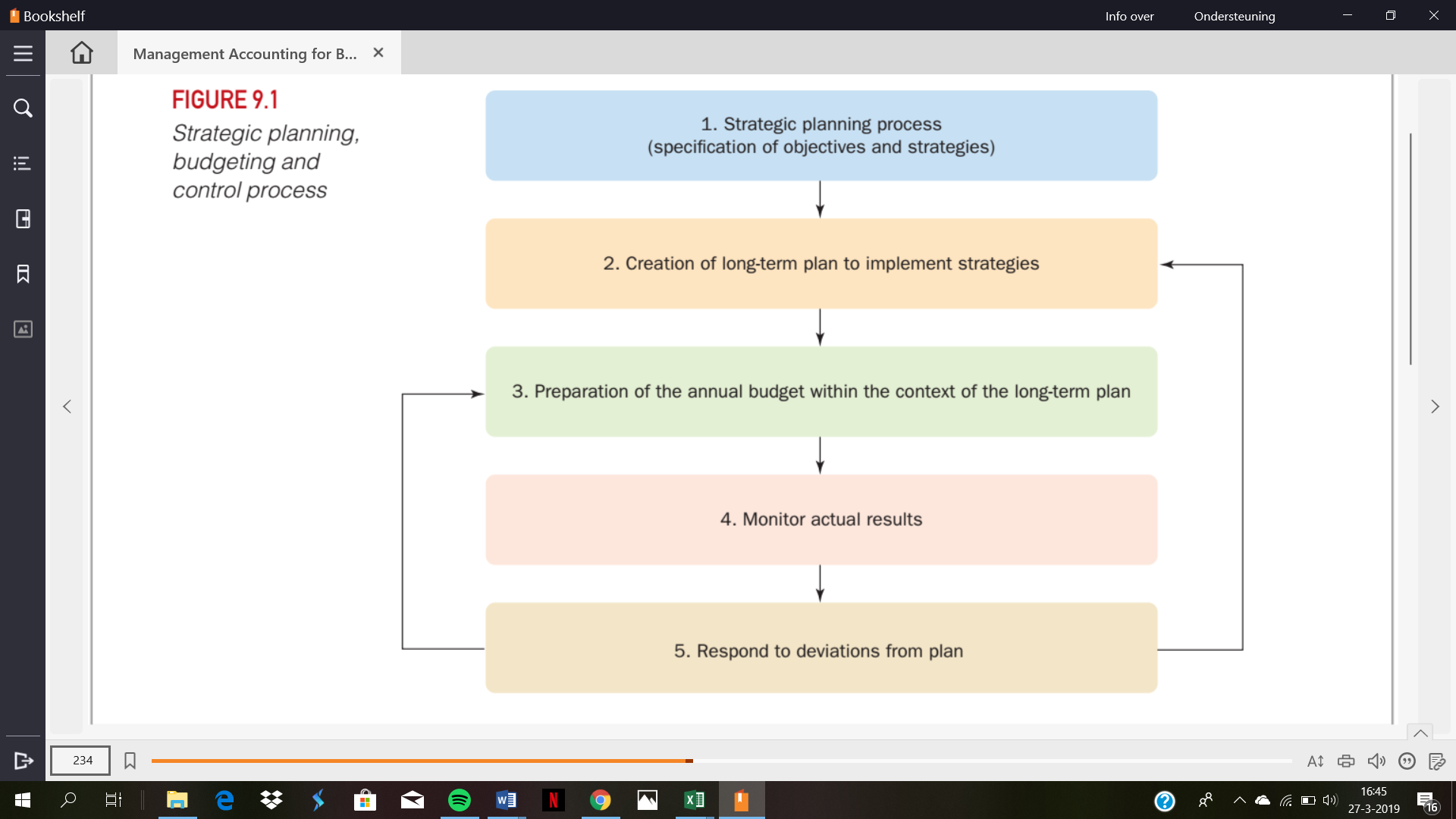
# Chapter 9: the budgeting process

**Budgets** = preparation of plans of actions for future periods

**Strategic plan**: specification of vision, mission and objectives

* **vision statement**: clarifies the beliefs and governing principles of an organization
* **mission statement**: description of what the organization does to achieve its vision

**corporate objectives**  are set for the organization as a whole and are then translated into **unit objectives**



## Functions of budgets

Planning 🡪

* encourages managers to anticipate problems before they arise, and to respond to changing conditions with reasoned judgement

Coordinating 🡪

* compels managers to examine the relationship between their own operations and those of other departments + identify and resolve conflicts

Communicating 🡪

* through the budget, management communicates its expectation to lower level management, so that all members of the organization may understand these expectations

Motivating 🡪

* influencing managerial behaviour and motivating managers to perform in line with the organizational objectives

Controlling 🡪

* by comparing the actual results with budgeted amounts, managers can identify costs that do not conform to the original plan and thus require their attention
  + **management by exception**: manager’s attention and effort can be concentrated on significant deviations from the expected results

Evaluating performance🡪

* measuring success in meeting the budget

**continuous/rolling budgeting**: ensures that a 12-month budget is always available by adding a quarter in the future as the quarter just ended is dropped

* opposed to budgets that are published once a year; in this case, budget will shorten until budget of next year is prepared
  + rolling budgets ensure that planning is not something that takes place once a year
  + with rolling budgets, actual performance will be compared with a more realistic target
  + a disadvantage of a rolling budget is the fact that it can create uncertainty for managers

Stages in the budgeting process

1. communicating details of the budget policy
2. determining the factor that restricts performance
   * this factor will determine the point at which the annual budgeting process should begin
3. preparation of the sales budget
   * most important
4. initial preparation of budgets
   * ‘bottom-up’ process: originate at the lowest level management and coordinated at higher levels
5. Negotiation of budgets
6. Coordination and review of budgets
7. Final acceptance of budgets
   * All budgets are summarized into a **master budget** consisting of a budgeted profit and loss account, balance sheet and cash flow statement
8. Ongoing review of budgets

## Conventional budgeting

Illustration of procedure constructing budgets (example 9.1)

* **Sales budget** 🡪 shows quantities of each product that the company plans to sell and the intended selling price
  + Foundation of all other budgets
* **Production budget and budgeted inventory levels** 🡪 ensure that production is sufficient to meet sales demand and that economic stock levels are maintained
* **Direct materials usage budget** 🡪 materials required to meet the production budget
* **Direct materials purchase budget** 🡪 purchase materials at the right time at the planned purchase price
* **Direct labour budget** 🡪 estimates of departments labour hours required to meet the planned production
* **Factory overhead budget** 🡪 will depend on the behaviour of the costs of the individual overhead items in relation to the anticipated level of production
* **Selling and administration budget**
* **Departmental budgets** 🡪 used for judging how effective managers are in controlling the expenditure for which they are responsible
* **Master budget** 🡪 budgeted profit and loss account and balance sheet provide the overall picture of the planned performance for the budget period
* **Cash budgets** 🡪 ensure that sufficient cash is available at all times to meet the level of operations that are outlined in the various budgets
* **Final review** 🡪 budgeted profit and loss account, balance sheet and cash budget will be submitted by the accountant to the budget committee to request approval

**Incremental budgeting**: budget process is concerned mainly with the increment in operations or expenditure that will occur during the forthcoming budget period

## Activity-based budgeting (exhibit 9.2)

**ABB:** authorize supply of only those resources that are needed to perform activities required to meet budgeted production and sales volume. 5 stages 🡪

1. Estimate production and sales volume by individual products and customers
   * Identical to conventional budgeting
2. Estimate demand for organizational activities
   * E.g number of purchase orders, set-ups, etc.
3. Determine resources that are required
   * Type of resources + quantities required
4. Estimate for each resource the quantity that must be supplied to meet demand
   * Estimate of total resources that must be supplies for each type of resource used by an activity
5. Take action to adjust capacity of resources to match the projected supply

## Zero-based budgeting

Also known as **priority-based budgeting**: attempt to overcome limitations of incremental budgets

* Requires that projected expenditure for existing activities should start from base zero rather than last year’s budget (so all expenditure rather than just changes from previous year)
* Focuses on programmes or activities instead of functional departments
* Best suited to **discretionary costs** and support activities
* Three stages 🡪

1. Description of each organizational activity in a decision package
   * **Decision package**: represents the operation of a particular programme with incremental packages reflecting different levels of effort that may be expended on a specific function
2. Evaluation and ranking of decision-packages in order of priority
3. Allocation of resources based on order of priority up to the spending cut-off level

* Benefits of ZBB over conventional methods 🡪
  + Level of previous funding is not taken for granted
  + Questioning attitude rather than one that assumes that current practice represents value for money
  + Attention on output in relation to value for money

Criticisms of budgeting 🡪

* Encouraging rigid planning and incremental thinking
* Time-consuming
* Ignoring key drivers of shareholder value by focusing too much on short-term financial numbers
* Impedes firms from being flexible and adaptive
* Typing the company to a 12-month commitment
* Meeting only the lowest targets and not attempting to beat the targets
* Spending what is in the budget even if this is not necessary
* Being disconnected from strategy

# Chapter 10: management control systems

**Controls**: measurement and information

**Control**: direction

**Strategic control** 🡪 external focus, emphasis on how a firm can compete with other firms in the same industry

**Management control** 🡪 aim to influence employee behaviours in desirable ways

## Different types of controls

**Action (behavioural) controls** 🡪 involve observing the actions of individuals as the go about their work

* Behavioural constraints
* Preaction reviews
* Action accountability

**Personnel, cultural and social controls** 🡪

* **Social controls**: selection of people who have already been socialized into adopting particular norms and patterns of behaviour to perform particular tasks
* **Personnel controls**: helping employees do a good job by building on employees’ natural tendencies to control themselves
  + selection and placement
  + training and job design
  + provision of necessary resources
* **cultural controls**: set of values, norms and beliefs that are shared by members of the organization and that influence their actions

**results or output controls** 🡪 collecting and reporting information about the outcomes of work effort

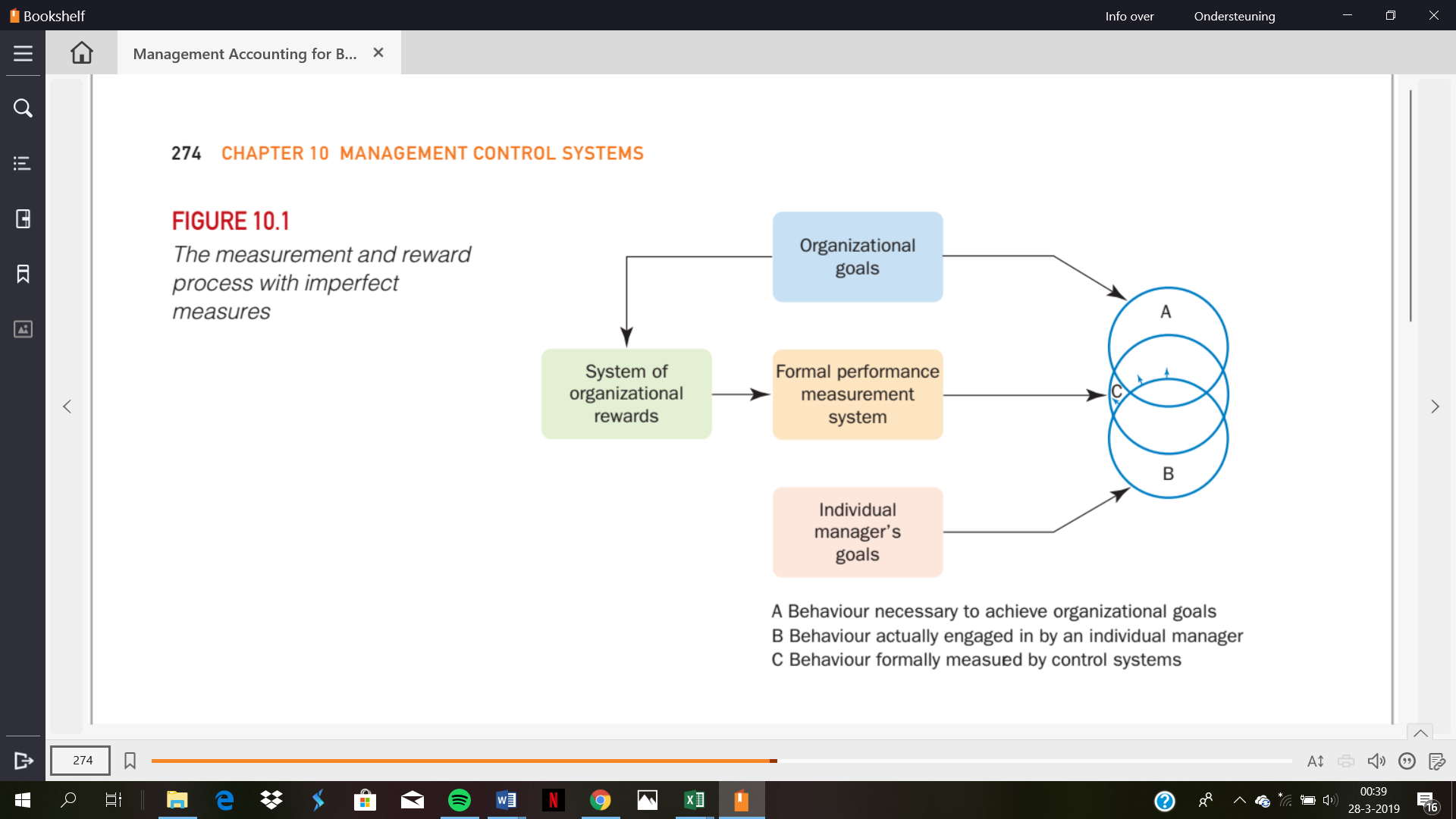
* several stages 🡪

1. establishing results measures that minimize undesirable behaviour
2. establishing performance targets
3. measuring performance
4. providing rewards or punishment

**feedback and feed-forward controls** 🡪

* **feedback control**: monitoring outputs achieved against desired outputs and taking corrective action if deviation exists
* **feed-forward control**: predictions are made of what outputs are expected to be; actions will be taken if expectations differ from what is desired

control systems should not lead to a lack of **goal congruence** 🡪 result controls can lead to lack of goal congruence; employees will only concentrate on what is monitored



management accounting control systems need decentralization 🡪 responsibility centres

* **cost or expense centres**: managers are accountable for only those costs that are under their control
  + **standard cost centres**: output can be measured and input can be specified
    - control compares standard cost with actual costs
  + **discretionary cost centres**: output cannot be measured and no clearly visible relationships between inputs and outputs
    - control ensures actual expenditures adheres to budgeted expenditure and tasks have been successfully accomplished
* **revenue centres**: managers are accountable for financial outputs in the form of generating sales revenue
* **profit centres**: managers are accountable for both revenues and costs
* **investment centres**: managers are responsible for both sales revenue and cost, and have authority to make capital investment decisions

management accounting control systems 🡪 2 core elements

1. formal planning process e.g budgeting and long-term planning
2. **responsibility accounting**: accumulate costs and revenues for each individual responsibility centre so that the deviations can be attributed to the individual who is accountable.

## Items involved in responsibility accounting

Distinguishing between items that managers can control (should be held accountable) and cannot control (should not be held accountable)

* **controllability principle 🡪** 
  + deal with distorting effect of uncontrollable factors *before* measurement period 🡪 either exclude uncontrollable items of make them clearly identifiable
  + deal with distorting effect of uncontrollable factors *after* measurement period 🡪 4 methods of removing effects of uncontrollable factors from results:

1. **Variance analysis**: analyse factors that cause actual results to differ from pre-determined budgeted targets
2. Flexible performance standards
   * + **flexible budgets**: uncontrollable volume effects on cost behaviour are removed from performance reports (example 10.1)
     + **Ex post budget adjustments**: managerial exposure to uncontrollable risks from forecasting errors are removed
     + **Relative performance evaluation**: performance is evaluated relative to performance of similar centres
   * Guidelines for controllability principle 🡪
     + Manager can control quantity and price paid for a service 🡪 responsible
     + Manager can control quantity but not the price 🡪 only responsible for difference between actual and budgeted expenditure due to usage
     + Manager cannot control either quantity or price 🡪 not responsible

Setting financial performance targets + determining how challenging the targets should be

* Three approaches 🡪
  + **Engineered targets:** when there are clearly defined and stable input-output relationships s.t the inputs required can be estimated directly from product specifications
  + **Historical targets**: no clear input-output relationship; previous results + increase for expected price changes form the basis for setting the targets
  + **Negotiated targets**: set based on negotiations between superiors and subordinates

Participation in the budgeting and target setting process

* **Participation**: the extent that subordinates/budgetees are able to influence the figures that are incorporated in their budgets/targets (**bottom-up budget setting**)
  + **Top-down budget setting**: non-participatory approach whereby subordinates have little influence
* Participation has several advantages 🡪
  + Individuals are more likely to accept targets and be committed to achieving them
  + Participation can reduce information asymmetry gap which enables more effective targets to be set
  + Imposed standards can encourage negative attitudes and result in demotivation and alienation

# Chapter 11: standard costing and variance analysis

**Standard costs** 🡪 provides costs expectation per *unit of activity*

**Budgeted costs** 🡪 provides cost expectation for the *total activity*

Standard costing 🡪

* Common or repetitive operations (input can be specified)
* Number of different products doesn’t matter, as long as common operations are used
  + Costs are developed for operations and product standard costs can by derived by combining costs from necessary operations
  + IMPORTANT: no point in comparing actual costs of a product with standard costs of a product, since different control centres are responsible for different activities. Only by comparing total actual costs with total standard costs for each operation or responsibility centre for a period can control be effectively achieved.

Establishing cost standards 🡪

* Based on **engineering studies:** involves detailed study on specification of materials, labour and equipment, and controlled observations of operations
  + Direct material standards 🡪 based on intensive study of input quantity necessary; standard material product cost = standard quantities \* standard prices
    - Standard prices 🡪 obtained from purchasing department
  + Direct labour standards 🡪 analyse each operation to eliminate unnecessary elements and to determine most efficient production method (standardize operations); estimated number of standard hours to complete the job
  + Overhead standards 🡪 unitize fixed overheads for inventory valuation purposes
    - Product overhead cost = hourly overhead rates \* standard hours (hours that should have been used)
    - Standard cost card
  + Standard hours produced 🡪 output measure that can act as a common denominator for adding together the production of unlike items

Purposes of standard costing 🡪

* Prediction of future costs that can be used for decision-making purposes
* Providing challenging target (motivation)
* Assisting in setting budgets and evaluating performance
* Control device; highlighting activities that do not conform to plan and thus alerting managers
* Simplifying task of tracing costs to products for profit measurement and inventory valuation purposes

## Variance analysis

Material variances 🡪

* **Material price variance** = (standard price – actual price) \* actual quantity purchased
  + When there is a delay in material usage, there are two options:

1. Full amount is reported in period 1 with quantity being defined as *actual quantity purchased* (recommended)
2. Price variance is calculated with quantity being defined as the *actual quantity used* and reported for every period

* **Material usage variance** = (standard quantity – actual quantity used) \* standard material price
* **Total material variance** = standard material cost – actual cost

Wage variances 🡪

* **Wage rate variance** = (standard wage rate per hour – actual wage rate) \* actual number of hours worked
* **Labour efficiency variance** = (standard labour hours for actual production – actual labour hours) \* standard wage rate per hour
* **Total labour variance** = standard labour cost – actual labour cost

Variable overhead variances 🡪

* **Variable overhead expenditure variance** = budgeted flexed variable overheads – actual variable overheads costs
* **Variable overhead efficiency variance** = (standard hours of output – actual hours of input) \* standard variable overhead rate
* **Total variable overhead variance** = standard variable overheads – actual variable overheads

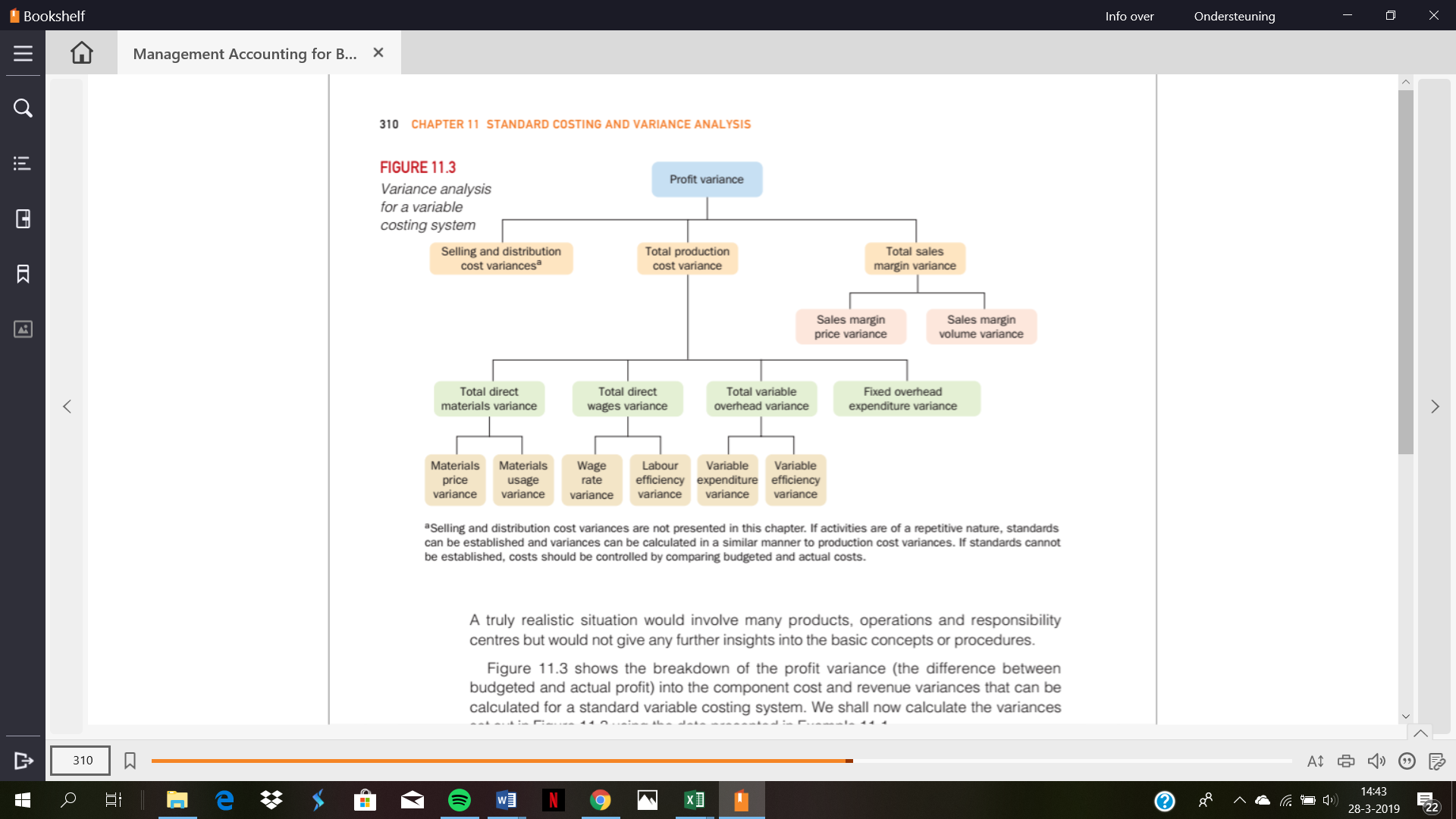
Generic routine approach to variance analysis (instead of using formulae) 🡪 exhibit 11.4

* No theoretical inside, but:
  + All price variances derived from differences between columns 1 and 2
  + All quantity variances derived from differences between columns 2 and 3
  + All total variances derived from difference between columns 1 and 3
* Other way around from theoretical approach:
  + Positive difference represents adverse variances
  + Negative difference represents favourable variances

Fixed overhead expenditure/spending variance 🡪

* **Fixed overhead expenditure variance** = budgeted fixed overheads – actual fixed overhead

Sales variances 🡪 calculated in terms of profit contribution margins rather than sales values

* **Total sales margin variance** = (actual sales revenue – standard variable cost of sales) – budgeted contribution
* **Sales margin price variance** = (actual selling price – standard selling price) \* actual sales volume
* **Sales margin volume variance** = (actual sales volume – budgeted volume) \* standard contribution margin

# Chapter 12: divisional financial performance measures

**Divisionalized organizational structure**: split up into divisions in accordance with the products that are made

* **investment centre**: when divisional managers also have responsibility for making capital investment decisions
* **profit centre**: when divisional managers are only responsible for profits from operating the assets assigned to them
* **cost centre**: only responsible for costs but not profits

divisionalization 🡪

* Advantages
  + Can improve decision-making process (quality and speed)
  + Providing more responsibility to managers will increase motivation
* Disadvantages 🡪
  + Danger that decisions may compete with each other

Types of measuring divisional profitability 🡪

* Managerial performance
  + **Controllable profit** = divisional revenues – controllable costs
    - measure of managerial performance
* Economic performance
  + **Divisional profit contribution** = controllable profit – non-controllable avoidable costs
    - Most appropriate for measuring economic performance since it is not distorted by arbitrary actions
  + **Divisional net profit before taxes** = divisional profit contribution – allocated corporate expenses
    - Including costs of services performed by head office

**Return on investment**: expresses divisional profit as a percentage of the assets employed in a division

* Advantages
  + Measure whether returns being earned on the capital invested exceed the division’s opportunity cost of capital
  + Common denominator for comparing returns of dissimilar business since it is a ratio
* Disadvantages
  + Might not encourage goal congruence

**Residual income**:

* Managerial purpose: controllable profit – cost of capital charge on investment controllable by divisional manager
* Economic performance: divisional profit contribution – cost of capital charge on total investment in assets employed by the division
* Advantages:
  + Greater possibilities to encourage goal congruence
* Disadvantages:
  + Absolute measure, so difficult to compare performance with other divisions/companies of different size

**Economic value added**:

* Concentrate of delivering shareholder value (**value-based management**)
* EVA = Conventional divisional profit ± Accounting adjustments – Cost of capital charge on divisional assets
  + Companies only create shareholder value when they generate a return in excess of return of capital
  + Managers are made aware that capital has a cost
* Calculating EVA 🡪 example 12.1

Dysfunctional consequences of short-term financial performance measures

* Reported economic income (difference between present value future cash flows beginning and end of measurement period) represents theoretical insight
  + Lacks precision and objectivity
  + Inconsistent with external financial accounting information
* Backward looking and short-term oriented
  + Risks not included

# Chapter 13: transfer pricing in divisionalized companies

**Transfer pricing 🡪**  the costs to the receiving division and revenue to the supplying division (one division buys from the other division)

A transfer pricing system can be used to:

1. Provide information for better decision-making
2. Provide information for evaluating performances
3. Ensure that divisional autonomy is undermined
4. Intentionally move profits between divisions or locations

Six different transfer pricing methods:

1. Market-based transfer prices
   1. Base prices on the market (perfectly competitive)
2. Cost plus a profit mark-up transfer prices
   1. Adding a mark-up to the cost, to arrive at the selling price
3. Marginal/variable cost transfer prices
   1. Base prices on the marginal/variable costs
4. Full cost transfer prices without a mark-up
   1. Base prices on the total costs, without a mark-up
5. Negotiated transfer prices
   1. Price is negotiated
6. Marginal/variable cost-plus opportunity cost transfer prices
   1. Price set at the variable cost + opportunity costs

**Mark-up** 🡪 fixed amount of money, added to the price, to make a profit

**Two-part transfer pricing system 🡪** a fixed fee is charged over the transferred goods, so that the supplying division can make a profit

# Chapter 14: Strategic cost management

Strategic cost management focuses on cost reduction and continuous improvement on an *ad hoc* basis (implement if the opportunity occurs). Cost is reduced to maximize profit or to supply goods for the lowest price, to outcompete competitors.  
  
**Committed-/ locked-in costs 🡪** Costs that occur, due to a decision in the past

**Target costing 🡪** A technique that focuses on managing costs in the planning and design phase, done in 4 stages:

1. Determine the target price, which customers will be prepared to pay for the product (willingness to pay (WTP)).
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.

If a target cost could not be reached, the product should not be launched. It should neither eliminate desired product functions to reduce costs.

**Reverse engineering (tear down analysis) 🡪** examining a competitor’s product to identify opportunities

**Value analysis (Value engineering) 🡪** an examination of factor which affect the cost to (i) identify improved products designs to reduce the cost (without sacrificing functionality) and (ii) eliminating unnecessary functions.

**Functional analysis 🡪** determine if each function/element of the product has enough value for the customer

**Activity-based (cost) management (AB(C)M) 🡪** cost management corresponding to ABC-method

To implement an ABM the first three stages of designing an ABC are required:

1. Identify the major activities that take place in an organization (activity analysis)
2. Assigning costs to cost centres for each activity
3. Determine the cost driver for each major activity

**Value added activity** 🡪 customers perceive an activity useful

**Non-value-added activity 🡪** an activity which could be left out, without reducing the customers satisfaction

Both could be identified by benchmarking

**Business process re-engineering 🡪** examining business processes and make changes to improve how the organization operates

**Just-In-Time system 🡪** a process with eliminate “unnecessary” activities (focus on avoiding storing and WIP)

Major features of JIT are (i) the rearrangement of the production process into production cells, (ii) the reduced set-up times, (iii) the emphasis on TQM, (iv) employees become multi-taskers, (v) the delivery of materials immediately precedes demand or use and (vi) the modification of MA performance measures and product costing systems.

To reduce set-up and cycle times, products are produced in great batch sizes. This causes less work-in-progress, less manufacturing time and less transportation time.

Many different products are divided in families. Dissimilar machines are grouped, so that a product can move from one machine to another (product flow line), which reduces work-in-progress. Risk: if one machine is defect, the process cannot proceed.

Using a *pull* manufacturing system, JIT-systems only produce products when demanded. This pull system is implemented by monitoring the consumption in each stage of the production and using types of signalling systems (Kanbans). Traditional systems are *push* manufacturing systems, which produces regardless of the demand.

Total Quality Management come with certain costs (cost of quality report):

1. Prevention costs: costs to prevent defects/mistakes.
2. Appraisal costs: costs to ensure that materials, products and services achieve its standards
3. Internal failure costs: costs incurred when products or services do not meet its standard.
4. External failure costs: costs incurred when products or services fail to satisfy the customer, after delivery.

**Environmental cost management 🡪** reduce environmental costs, such as waste and pollution. 4 types of environmental costs:

1. Environmental *prevention* costs: costs to prevent waste and pollution
2. Environmental *detection* costs: costs to detect waste and pollution
3. Environmental *internal failure* costs: costs incurred to eliminate/reduce waste
4. Environmental *external failure* costs: costs incurred with activities of cleaning the environment after pollution

**Value-chain analysis 🡪** increase customer satisfaction and managing costs in a supply chain management

# Chapter 15: Strategic performance management

Five issues which needs to be addressed in order to set up a performance framework:

1. What are the key objectives for the future and what are its measurements?
2. What strategies and plans has the organization adopted and how are they going to implement them?
3. What level of performance is required and what target will be set?
4. What rewards/penalties will employees receive?
5. What are the information and feedback flows?

Three main strategies:

1. Cost leadership strategy: an enterprise focuses on becoming the lowest cost producer and provider within the industry
2. Differentiation strategy: an enterprise seeks for a product which is considered superior or unique.
3. Focusing strategy: an enterprise focuses on a narrow market segment

**Strategic positioning** 🡪 choose the optimal mix of the above-mentioned strategies

**Defenders strategy 🡪** an enterprise focuses on the product price, quality and customer service

**Prospector strategy 🡪** an enterprise seeks for a new/innovative product

**Balanced scoreboard 🡪** integration method for financial and non-financial performance measures, based on four perspectives:

1. Financial perspective: how do we look to shareholders?
2. Customer perspective: how do customers see us?
3. Internal business perspective: what must we excel at? What is our focus?
4. Learning and growth perspective: can we improve/create more value?

**Lag measures 🡪** evaluation as a measurement

**Lead measures 🡪** prediction as a measurement