LEARNING OBJECTIVES

- State and explain the three major influences on pricing decisions
- Set prices of outputs using market prices with or without target costing
- Set prices in a segmented market
- Set prices using cost-plus pricing
- Set prices for the long-run and/or the short-run
- Explain the impact of Australian law on pricing
- Explain differences in a company's revenues across customers purchasing the same product
- Apply the activity-based cost hierarchy to customer costing
- Explain differences in customer-level costs across customers
- Analyze customer profitability
- Subdivide the sales-volume variance into the sales-mix variance and the sales-quantity variance
- Subdivide the sales-quantity variance into the market-share variance and the market-size variance
Major Influences of Pricing Decisions

Major influences on pricing decisions

Market positioning

- Companies position themselves in certain markets and this may influence product prices
- A firm with a reputation for very high quality and prestigious products may set a high price, consistent with that image
- An overemphasis on price cutting can damage a product’s image and reduce profitability (cont.)

Product costs

- In the long term, firms must produce at a cost below selling price
- The importance of product cost in price setting varies across industry
- Even when a firm sets a price below cost, it is still important to have an awareness of product cost (cont.)
Customer value
• Understanding customer value is a critical aspect in price setting
• The difference between the value that a customer gains by owning and using a product, and the price paid for the product is the net value to the customer
• Businesses must understand the specific aspects of a product or service that provide value to the customer

Competitors’ behaviour
• Competitors’ pricing behaviour can affect a company’s pricing decisions
• When considering the reaction of competitors and customers, management must take care to define its product and market it correctly
• Predicting competitors’ reactions to its products and pricing strategy is a difficult but important task for management

Legal, political and ethical issues
• Managers must adhere to the laws when setting prices
• The law generally prohibits companies from discriminating between customers in setting prices
• Political pressures may lead to intervention in the setting of prices
• Ethical considerations may need to be considered, including deceptive practices
Pricing decisions

Customers, competitors and costs:
How companies price a product or service ultimately depends on the demand and supply for it:
- customers – influence price through their effect on the demand for a product or service, based on factors such as quality and product features
- competitors – influence price through their pricing schemes, product features, and production volume
- costs – influence prices, because they affect supply (the lower the cost, the greater the quantity a firm is willing to supply).

Balancing customers, competitors and costs:
- competitive markets – companies have no control over setting prices and must accept the price determined by a market
- less-competitive markets – can use either the market-based or cost-based approach
- non-competitive markets – use cost-based approaches.

Economic profit-maximising models
- Economic models focus on the optimal price and sales quantity that will maximise profit
- Price elasticity is the impact of price changes on sales volume
- Cross-elasticity is the extent to which a change in a product’s price can affect the demand for a substitute product

(cont.)
Economic profit-maximising models

"Normal" Market Demand

Total revenue

- Revenue is a curve.
- Shows that a firm can only sell more if it lowers its price.
- Slope of the revenue curve is the marginal revenue.
Economic profit-maximising models

- Cost is a curve, showing that a firm's unit cost varies as volume changes.
- Slope of the total cost curve is marginal cost.
- i.e., additional cost of producing an additional unit of output.

Economic profit-maximising models

- Total cost
- Total revenue

Total profit at the profit-maximising quantity and price

Profit is maximized where MR = MC or where slopes of the R(q) and C(q) curves are equal.
Economic profit-maximising models (cont.)

- **Demand** is *elastic* if a price increase has a large negative impact on sales volume
- **Demand** is *inelastic* if a price change has little or no impact on sales quantity
- Measuring *price elasticity* is an *important* objective of market research into pricing

Limitations of the economic model

- Difficult to precisely determine the firm’s demand curve and marginal revenue curve
- Many factors affect product demand
- Not valid for all forms of markets
- Difficulty of measuring marginal cost
  - most costing systems are not designed to readily do this

Pricing approaches

**Value-based pricing**
- Where customers’ perceptions of the value of the product or service guide the pricing
- A firm need to understand customers needs and their perceptions of value

**Economic-value pricing**
- Specifically estimates the costs and benefits experienced by the customer, which extend beyond the initial purchase price
- Often used in industrial markets
Cost-plus pricing
• Most firms consider product costs, to some degree, when setting prices - Why?
• Difficult to do thorough market analysis for all products - need quick, straightforward methods to set price
• Costs give management a starting point
• Costs provide a floor below which prices cannot fall in the long run

Pricing decisions – web links
• ‘Concept Of Pricing Decision And Objectives Of Pricing Policy’ can be found at: http://accountlearning.blogspot.co.nz/2012/04/concept-of-pricing-decision-and.html
• ‘Our pricing decisions are based on … Starbucks Raising Prices’ discusses the reasoning behind Starbucks price increases, and can be found at: http://iterativepath.wordpress.com/2012/01/03/our-pricing-decisions-are-based-on-starbucks-raising-prices/

Market-based pricing
Target pricing:
• target price – estimated price for a product or service that potential customers will pay
• estimated on customers’ perceived value for a product or service, and how competitors will price competing products or services.
Market-based pricing

Understanding customers’ perceived value:
• understanding customers and competitors is important because
  • competition from lower cost producers has meant that prices cannot be increased
  • products are on the market for shorter periods of time, leaving less time and opportunity to recover from pricing mistakes
  • customers have become more knowledgeable and demand quality products at reasonable prices.

Competitor analysis:
• understand competitors’ technologies, products or services, costs and financial conditions
• helps a company to:
  • evaluate how distinctive its own products or services will be in the market, and
  • determine the prices it might be able to charge as a result of being distinctive.

Market segmentation:
• price differentiation – the practice of charging different customers different prices for the same product or service
• peak-load pricing – the practice of charging a higher price for the same product or service when the demand for it approaches the physical limit of the capacity to produce that product or service.
Market-based pricing – web link

- YouTube lecture 'Target Costing Method' can be found at:
  http://www.youtube.com/watch?v=IM3LiZ7uQ

Cost-based (cost-plus) pricing

- The general formula adds a markup component to the cost base to determine a prospective selling price.
- This is usually only a starting point in the price-setting process.
- Markup is somewhat flexible, based partially on customers and competitors.

Cost-based (cost-plus) pricing

**Cost-plus pricing formulas**

- Price = cost + (markup percentage × cost)
- Markup percentage is dependent on the definition of product cost used
- Two issues
  - What is the best definition of cost to be used in the cost-plus pricing formula?
  - How is the desired markup determined?
Cost-based (cost-plus) pricing

Cost-plus methods
- Selecting different cost bases for the 'cost-plus' calculation:
  - variable manufacturing cost
  - variable cost
  - manufacturing cost
  - full cost.
- These cost bases give four prospective selling prices that are close to each other.

Absorption cost pricing formulas
- Provide a justifiable price - perceived to be equitable to all parties
- Usually provided by a firm’s costing system
- Cost-effective to use in pricing
- Disadvantages
  - Obscures the cost behaviour patterns of the firm
  - Not consistent with CVP analysis

Variable cost pricing formulas
- Does not obscure the cost behaviour pattern by unitising fixed costs
- Variable cost data is useful for short-term pricing decisions
- Disadvantages
  - In the long term, prices must be set to cover all costs and a normal profit margin
  - Managers must use high markups when using variable cost

Product costing definitions (cont.)
Determining the markup

Return on investment (ROI) pricing

- Selling price is determined by using the required rate of return to determine the markup on cost
- The profit margin is based on the firm’s target return on investment
  - Target rate of return on investment – the target annual operating return that an organisation aims to achieve, divided by invested capital
- Average investment × target ROI = target profit

Markup percentage

\[
\text{Mark-up percentage} = \frac{\text{profit required to achieve target ROI}}{\text{total annual costs not included in cost base}} \times \frac{\text{annual volume}}{\text{cost base per unit used in cost-plus pricing formula}}
\]

Time and material pricing

Cost-plus pricing using separate labour and materials charges

- Labour charge includes a charge for labour-related overhead and profit margin
- Material charge includes a charge for material-related overhead

(continues)
Time and material pricing (cont.)

\[
\text{hourly labour cost} = \frac{\text{annual overhead excluding material handling and storage}}{\text{annual labour hours}}
\]

\[
\text{hourly charge} = \text{hourly labour cost} + \text{per hour profit margin}
\]

\[
\text{material charge} = \frac{\text{material cost incurred on job}}{\text{material cost incurred on job}}
\]

\[
\text{material charge} = \text{material cost incurred on job} + \frac{\text{annual material handling and storage costs}}{\text{annual cost of materials used in Repair Department}}
\]

\[
\text{cost} = \text{material cost} + \text{per dollar of material cost}
\]

Cost-plus pricing: summary and evaluation

- Effective price setting requires a constant interplay between market considerations and cost awareness.
- Cost-plus pricing may be used to establish a starting point for setting prices.
- Cost-plus pricing formulas
  - Simple
    - Can be applied mechanically to update prices for multiple products.
    - Can be used with a variety of cost definitions.
- Most firms use full cost for their cost-based pricing decisions because it:
  - allows for full recovery of all costs of the product
  - allows for price stability
  - is a simple approach.
Product cost distortion and pricing: the role of activity-based costing

- **Conventional** volume-based product costing systems may overstate some product costs and understate other product costs
- **ABC**
  - Measures the extent to which each product consumes costs of key support activities
  - Will provide more accurate product costs to inform prices

Cost-based (cost-plus) pricing

Comparison of cost-plus pricing and target pricing:

- **Cost-plus** selling prices are prospective prices and are set after balancing the trade-offs among costs, mark-up and customer reactions.
- The **target-pricing** approach sets the target price after assessing customer preferences, expected competitor responses, and the target cost.

Cost-based (cost-plus) pricing – web links

- YouTube lecture ‘Setting Prices: Cost-Plus Pricing versus Target Pricing’ can be found at: [http://www.youtube.com/watch?v=Tdca6ReCX0Q](http://www.youtube.com/watch?v=Tdca6ReCX0Q)
Strategic pricing: Costing and pricing for the long run

- Long-run pricing decisions have a time horizon of one year or longer, and include decisions such as:
  - Pricing a product in a major market where there is some leeway in setting price.
- Costs that are often irrelevant for short-run policy decisions, such as fixed costs that cannot be changed, are generally relevant in the long run, because costs can be altered in the long run.
- Profit margins in long-run pricing decisions are often set to earn a reasonable return on investment — prices are decreased when demand is weak and increased when demand is strong.

Strategic pricing of new products

**Product Life Cycle Stages Explained**
- The product life cycle has 4 very clearly defined stages, each with its own characteristics that mean different things for business that are trying to manage the life cycle of their particular products.
- **Introduction Stage**
- **Growth Stage**
- **Maturity Stage**
- **Decline Stage**
Strategic pricing of new products

Product Life Cycle Stages Explained (Cont)

- **Introduction Stage** – This stage of the cycle could be the most expensive for a company launching a new product. The size of the market for the product is small, which means sales are low, although they will be increasing. And upstream costs can be very high.

- **Growth Stage** – The growth stage is typically characterized by a strong growth in sales and profits, and because the company can start to benefit from economies of scale in production.


- **Maturity Stage** – During the maturity stage, the product is established and the aim for the manufacturer is now to maintain the market share they have built up. This is probably the most competitive time for most products and businesses need to maintain competitive advantage.

- **Decline Stage** – Eventually, the market for a product will start decline. This decline could be due to the market becoming saturated (i.e. all the customers who will buy the product have already purchased it), or because the consumers are switching to a different type of product. While this decline may be inevitable, it may still be possible for companies to maintain some competitive advantage.


Strategic pricing of new products

- **Product Life Cycle Stages Explained (Cont)**

- **Maturity Stage** – During the maturity stage, the product is established and the aim for the manufacturer is now to maintain the market share they have built up. This is probably the most competitive time for most products and businesses need to maintain competitive advantage.

- **Decline Stage** – Eventually, the market for a product will start decline. This decline could be due to the market becoming saturated (i.e. all the customers who will buy the product have already purchased it), or because the consumers are switching to a different type of product. While this decline may be inevitable, it may still be possible for companies to maintain some competitive advantage.


Strategic pricing of new products

- The newer the concept of the product, the more difficult is the pricing decision

- **Skimming pricing**
  - A high initial product price to reap high short-term profits on a new product
  - Over time, the price will be lowered

- **Penetration pricing**
  - A low initial price of a new product to attract market share

Competitive bidding

- Two or more companies submit sealed bids (or prices) for a product or project, to a potential buyer
- **Cost analysis** involves similar issues to that of accepting or rejecting a special order
- **Spare capacity**
  - If price exceeds the incremental costs of producing the product, this will contribute towards covering the company’s fixed cost and generating a profit

Competitive bidding (cont.)

- **No spare capacity**
  - Incremental costs still relevant
  - Opportunity costs must be assessed
  - A bid price should cover the opportunity cost
  - The bid price may be higher than when spare capacity exists
- Marketing and strategic issues need to be considered

Costing and pricing for the short run

**Short-run pricing** decisions have a time horizon of less than one year and include decisions such as:
- pricing a one-time-only special order with no long-run implications
- adjusting product mix and output volume in a competitive market.
Costing and pricing for the short run

Relevant costs for short-run pricing decisions

- Relevant costs include:
  - direct materials
  - direct manufacturing labour
  - fixed costs of any additional capacity required.

Costing and pricing for the long/short run

- YouTube lecture ‘Setting Prices: Cost-Plus Pricing versus Target Pricing’
  Accounting video can be found at:
  [Link](http://www.youtube.com/watch?v=Tdca6RsCX0Q)

The impact of Australian law on pricing

- The Australian Competition and Consumer Commission (ACCC) seeks to prevent:
  - predatory pricing – deliberately lowering prices below costs in an effort to drive competitors out of the market and restrict supply, and then raising prices
  - dumping – a foreign firm sells a product in Australia at a price below the market value in the country where it is produced, and this lower price materially injures or threatens to materially injure an industry in Australia
  - price fixing (illegal in Australia) – occurs when companies in an industry conspire in their pricing and production decisions to achieve a price above the competitive price, and so restrain trade
  - Resale price maintenance - It is illegal for suppliers to: put pressure on businesses to charge their recommended retail price or any other set price

[ACCC website link](https://www.accc.gov.au/business/pricing/setting-prices)
Customer profitability analysis

- **Customer-profitability analysis** is the reporting and analysis of revenues earned from customers and costs incurred to earn those revenues.
- An analysis of customer differences in revenues and costs can provide insight into why differences exist in the operating income earned from different customers.

Customer profitability analysis

**Customer-revenue analysis**

- A price discount is the reduction of selling prices to encourage increases in customer purchases.
  - lower sales price is a tradeoff for larger sales volumes.
- Discounts should be tracked by customer and salesperson to help improve profitability.

Customer profitability analysis

**Customer-cost analysis**

- Customer-cost hierarchy categorises costs related to customers into different cost pools on the basis of different:
  - types of drivers
  - cost-allocation bases
  - degrees of difficulty in determining cause-and-effect or benefits-received relationships.
Customer profitability analysis

- Categories of indirect costs in a customer-cost hierarchy:
  - customer output unit-level costs
  - customer batch-level costs
  - customer-sustaining costs
  - distribution-channel costs
  - organisation-sustaining costs.

Customer-profitability analysis

Presenting a customer-profitability analysis

- Factors to be considered in allocating resources among customers include:
  - likelihood of customer retention
  - potential for sales growth
  - long-run customer-profitability
  - increases in overall demand from having well-known customers
  - ability to learn from customers.
Customer-profitability analysis – web links

- YouTube lecture ‘Customer Profitability Analysis’ can be found at: http://www.youtube.com/watch?v=iaGjeVBkNki

Using the five-step decision-making process to manage customer profitability

- The five-step decision-making process, discussed in topic10, is used to guide the allocation of resources across customers:
  - **identify** the problem
  - **collect** relevant information
  - **determine** possible courses of action and consider the consequences of each
  - **evaluate** each possible course of action and select the best one
  - **implement** the decision, evaluate performance, and learn
Appendix 11-1: Further variances
Flexible-budget variances and sales-volume variances

• **Flexible-budget variances:**
  - flexible-budget variance = Actual result – Flexible-budget amount

• **Sales volume variance:**
  - The difference between the static budget amount and flexible budget amount is called the sales-volume variance
  - by using the budgeted selling price and standard costs, the sales-volume variance considers the impact of the change in sales volume as if those standards had all been achieved.

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Flexible-budget variances and sales-volume variances

**Absorption Costing Formula**

Sales Volume Variance = \((AQ \times SP) – (SQ \times SP)\)

OR

= \((AQ – SQ)\times SP\)

**Marginal / Variable Costing Formula**

Sales Volume Variance = \((AQ \times SC) – (SQ \times SC)\)

OR

= \((AQ – SQ)\times SC\)

Sales Volume Variance = \((SP - SC)\times(AQ – SQ)\)

**Notation:**
- \(SC\) = Standard / Budgeted Contribution Margin per unit
- \(AQ\) = Actual Quantity Sold
- \(SQ\) = Standard Quantity Sold
- \(SP\) = Standard Sales Price
- \(SV\) = Standard Variable Cost

---

Flexible-budget variances and sales-volume variances

• **Sales Volume variances:**
  - if actual volume is greater than budgeted volume,
    - the variance is favourable (F)
  - if actual volume is lower than budgeted volume,
    - the variance is unfavourable (U)
  - it is important to seek out the root cause for the variance.

**Remember:**
- Favourable variance (F) has the effect of increasing operating profit relative to the budget amount
- Unfavourable variance (U) has the effect of decreasing operating profit relative to the budget amount
Flexible-budget variances and sales-volume variances

- **Sales Volume Variance**
  - The difference between a flexible budget amount and the corresponding static-budget amount.

- **Sales Mix Variance**
  - Indicates the impact on revenues of the change in sales mix, assuming there was no change in contribution margin.

- **Sales Quantity Variance**
  - Measures the change in standard profit or contribution arising from the difference between actual and anticipated number of units sold during a period.

Sales Volume Variances - Sales Mix and Sales Quantity Variances

- **Sales Mix Variance**
  - The sales-mix variance is best understood in terms of a **composite unit** - a hypothetical unit with weights based on the mix of individual units. A favourable sales mix variance arises when the actual sales mix shifts toward the products having the largest contribution margins.

- **Sales Quantity Variance**
  - Arises because the number of units sold varies from the budget. A favourable sales-quantity variance indicates that the actual number of all products sold exceeds the budgeted units of all units sold.
Sales Volume Variances - Sales Mix and Sales Quantity Variances

Sales-mix and sales-quantity variances:

- **the sales-mix variance** is the difference between
  - budgeted contribution margin for the actual sales mix, and
  - budgeted contribution margin for the budgeted sales mix

- **the sales-quantity variance** is the difference between
  - budgeted contribution margin based on actual units sold of all products at the budgeted mix, and
  - contribution margin in the static budget (which is based on budgeted units of all products to be sold at budgeted mix).

---

**Sales Volume Variances - Sales Mix Variance**

- **Sales Mix variance** indicates the impact on revenues of the change in sales mix, assuming there was no change in contribution margin.

\[
\Delta SM = (AS_{\text{Mix}} - BS_{\text{Mix}}) \times AQ_{\text{Sold}} \times BC_{\text{unit}}
\]

OR ...

\[
\Delta SM = (AS_{\text{Mix}} - BS_{\text{Mix}}) \times BCm
\]

- \(SM\) – Sales Mix Variance
- \(BS\) – Budgeted Sales Mix
- \(AQ\) – Actual Quantity Sold
- \(BC\) – Budgeted Contribution Margin per Unit

---

**Sales Volume Variances - Sales Quantity Variance**

- **Sales Quantity variance** indicates the impact on revenues of the change in sales mix, assuming there was no change in contribution margin.

\[
\Delta SQ = (AQ_{\text{Sold}} - BQ_{\text{Sold}}) \times BS_{\text{Mix}} \times BC_{\text{unit}}
\]

- \(SQ\) – Sales Quantity Variance
- \(AQ\) – Actual Quantity Sold
- \(BQ\) – Budgeted Quantity Sold
- \(BC\) – Budgeted Contribution Margin per Unit
Sales Quantity Variances – Market Share and Market Size Variances

**Market-share and market-size variances**

The sales-quantity variance gives an indication about the number of units sold in comparison to budgeted amounts, and can be subdivided to give additional information.

- The **market-share variance** is the difference in the budgeted contribution margin for actual market size in units caused solely by actual market share being different from budgeted market share.
- The **market-size variance** is the difference in the budgeted contribution margin at budgeted market share caused solely by actual market size in units being different from budgeted market size in units.

Sales Quantity Variances – Market Share Variance

The **market-share variance** is the difference between budgeted contribution margin for actual market share in units caused by the actual market share being different from the budgeted market share. A favourable market-share variance indicates that the company achieved a larger share of the market than anticipated.

\[
\Delta M_{\text{Share}} = (AM_{\text{Share}} - BM_{\text{Share}}) \times AM_{\text{Size}} \times BC_{\text{unit}}
\]

- \(\Delta M_{\text{Share}}\) - Market Share Variance
- \(AM_{\text{Share}}\) - Actual Market Share
- \(BM_{\text{Share}}\) - Budgeted Market Share
- \(BC_{\text{unit}}\) - Budgeted Contribution Margin per Unit

Sales Quantity Variances – Market Size Variance

The **market-size variance** is the difference in budgeted contribution margin at budgeted market share caused solely by actual market size in units being different from the amount budgeted. A favourable market-size variance indicates that the entire market for the product was larger than budgeted.

\[
\Delta M_{\text{Size}} = (AM_{\text{Size}} - BM_{\text{Size}}) \times BM_{\text{Share}} \times BC_{\text{unit}}
\]

- \(\Delta M_{\text{Size}}\) - Market Size Variance
- \(AM_{\text{Size}}\) - Actual Market Size
- \(BM_{\text{Size}}\) - Budgeted Market Size
- \(BM_{\text{Share}}\) - Budgeted Market Share
- \(BC_{\text{unit}}\) - Budgeted Contribution Margin per Unit
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Input yield and mix variances

- Mix variance
- Yield variance
- Efficiency variance

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Not examinable