

Chapter 10 revision notes

Decision-making

The scope of decision-making

Decision-making is of fundamental importance to organisations, and includes areas of problem solving, planning, control and investment.

Decisions are made by managers not by the management accountant and the levels of authority within the management hierarchy are determined by company policy. Companies normally establish limits at each management level for each type of decision, and the level of expenditure allowed. The approval of one or more directors is normally required for all capital expenditure. Strategic decision-making is carried out at board level. Operational decisions are normally made at the middle manager level, and tactical decisions made at the junior manager level.

Problem solving decisions

Decision-making relating to problem solving considers relevant costs (and revenues), which are the costs (and revenues) appropriate to a specific management decision. These include incremental or differential costs and benefits, sunk costs and opportunity costs.

Planning, forecasting and planning decisions

Planning, forecasting and budgeting decisions require best estimates of costs and the use of cost-volume-profit (CVP) analysis.

Long-term planning decisions

Longer-term planning decisions assume that in the long run all costs are variable and that scarce resources, and over or under-capacity, are problems that can be overcome.

Control decisions

Control decisions use historical information and comparisons such as variance analysis and actual/budget comparisons.

Investment decisions

Investment decisions tend to be longer term and cash flow and the time value of money are important appraisal factors.

The decision-making process

The decision-making process comprises seven steps:

First, the objectives, either long-term or short-term, need to be identified.

Second, alternative opportunities must be identified which might contribute to achieving the company's objectives. The ability to identify opportunities, or things to do to which might help the company reach its objectives, is a major test of how good management is. Failure to recognise opportunities that exist may result in decisions not taken or opportunities missed.

Third, the relevant data about each of the alternatives must be collected and analysed. For example, this may relate to decisions on whether to manufacture or buy from an external supplier, or to use an existing site or establish a new site.

Fourth, the decision must then be made and the expected outcome stated. If a board of directors, for example, makes a decision, then the minute of that decision should formally refer back to the various documentation, forecasts, etc., that were an integral part of that decision.

Fifth, the decision must be implemented. The minutes of meetings of the board of directors should confirm that a specific decision has been implemented, along with an overview of progress to date.

Sixth, data needs to be obtained about actual results following implementation of the decision.

Finally, the actual results are compared with the expected outcome and the achievements that have resulted from the decision evaluated.

In practice things rarely work out as planned, and in such an orderly way. In reality the decision-making process usually appears to be overtaken by events, requiring very quick response and without the time for perhaps a more considered response.

Relevant costs

Relevant costs, or incremental or differential costs, arise as a direct consequence of a decision, which may differ between alternative options.

Accounting information, for example that used in absorption costing, may be different from relevant information used in decision-making. Relevant information may relate to costs or revenues; compared with accounting information, it may be qualitative as well as quantitative.

Relevant costs are costs that arise as a direct consequence of a decision. These may differ between the alternative options.

Relevant costs are future costs not past costs. A decision is about the future and it cannot alter what has been done already. A cost incurred, or committed, in the past is irrelevant to any decision that is made now.

Relevant costs are cash flows not accounting costs. All decisions are assumed to maximise the benefit of the shareholders. The time value of money impacts on longer-term decisions but all short-term decisions are assumed to improve shareholder wealth if they increase net cash flows.

Relevant costs may also include opportunity costs.

Unless there is some evidence to the contrary, it is always assumed that variable costs are relevant costs and that fixed costs are not relevant to a decision. However, some variable costs may include some non-relevant costs. For example, direct labour costs are normally accounted for as variable costs, but if the workforce is paid a fixed rate per person per week, in some circumstances this may be a committed cost and therefore not relevant to decision-making.

Depreciation cost per hour may be accounted for as a variable cost. But, depreciation is never a relevant cost because it is a past cost and does not represent cash flow that will be incurred in the future.

There are a number of costs; sunk costs; committed costs; notional costs, that are termed irrelevant to decision-making because they are either not future cash flows or costs which will be incurred anyway, regardless of the decision that is taken.

A sunk cost is a cost which has already been incurred and which cannot now be recovered. It is a past cost which is not relevant to decision-making. Such costs may be, for example, the costs of dedicated fixed assets and development costs already incurred.

A committed cost is a future cash outflow that will be incurred anyway, whatever decision is taken now about alternative opportunities. Committed costs may exist because of contracts already entered into by the company.

A notional cost, or imputed cost, is an hypothetical accounting cost to reflect the use of a benefit for which no actual cash expense is incurred. Examples are notional rents charged by the company to subsidiary companies, or cost centres, for the use of accommodation that the company owns, and notional interest charged on capital employed within a cost centre or profit centre of the company.

The relevant cost of raw materials is generally their current replacement cost, unless the materials are already owned and would not be replaced if used. If the materials are already owned, the relevant cost is the higher of the current resale value and the value obtained if the materials were put to alternative use. The higher of these costs is the opportunity cost. If there is no resale value and there is no other use for the materials then the opportunity cost is zero.

The historical cost of equipment that has already been purchased is not a relevant cost for decision-making. If the capital equipment has not already been purchased, and the decision would involve such a purchase, the situation is different.

An attributable cost is the cost per unit that could be avoided, on the average, if a product or function were discontinued entirely without changing the supporting organisational structure. An attributable cost consists of:

- ◆ short-run variable costs
- ◆ divisible fixed costs
- ◆ only those indivisible fixed costs that are traceable

The relevant cost of a scarce resource to be included in a decision-making calculation is the benefit forgone (the opportunity cost) in using the resource in another way, in addition to the direct cost of purchasing the resource.

Marginal costing and shutdown or continuation decisions

Marginal costing may be used to assist in shutdown or continuation decisions.

The marginal costing approach focuses on the variable costs which are affected by the decision and separates them from the fixed costs which are unaffected by the decision and are therefore irrelevant to it.

Make versus buy decisions

Make versus buy decisions involve consideration of a wider range of factors than simply the differences in the basic cost.

Make versus buy decisions are made when a component used in one of the manufacturing processes to produce a product may either be bought in from outside suppliers or manufactured within the factory. The decision involves consideration of a number of other factors, for example:

- ◆ cost price sensitivity to changes in volumes
- ◆ accuracy of data
- ◆ reliability of bought-in and/or self-manufactured components
- ◆ supplier switching costs
- ◆ reliability of suppliers in terms of delivery and financial stability
- ◆ length of time the cost price will be held
- ◆ opportunity cost

If other manufacturing activities have to be forgone so as to make the component in-house then there is a loss of the contribution that this work would otherwise have earned. The contribution sacrificed is the opportunity cost of not carrying out the alternative activities. The opportunity cost must be added to the marginal cost of making the component to compare with suppliers prices in making a make versus buy decision. The technique usually used to determine loss of contribution is contribution per unit of a key factor of production.

Product mix decisions and limiting factors

A limiting factor is the lack of any resource which limits the activity of the organisation.

Product mix decisions are influenced by the scarcity of resources and the availability of limiting factors.

An organisation may not have access to an unlimited supply of resources to allow it to exploit every opportunity to continue indefinitely to increase contribution. Such scarce resources may be, for example:

- ◆ labour hours
- ◆ levels of labour skills
- ◆ machine capacity
- ◆ time
- ◆ market demand
- ◆ components
- ◆ raw materials
- ◆ cash
- ◆ credit facilities

The organisation has to decide what mix of products or services to provide, given the restricted resources available to it, with its volume of output constrained by the limited resources rather than by sales demand. It can do this by seeking to maximise profit by optimising the benefit it obtains from the limiting factor.

Sales pricing

Sales pricing policy is just one of the four categories of decision included in the marketing mix of price, product, place, and promotion, and is based on cost and market factors that influence demand for the product.

Pricing decisions must have some regard for cost, in order to ensure that selling price exceeds average unit costs in order to make a profit. Pricing decisions must also recognise the importance of the range of factors that comprise the general heading of 'demand'.

Various sales pricing methods that are concerned solely with cost, and assuming unlimited demand, may be used to achieve a break-even position or a targeted profit, using both the marginal and full absorption costing approach.

The cost-based approach is not market based, and includes no identification of profit potential at different output or market demand levels.

An approach to pricing may be taken using market data, which looks at a range of selling prices per unit and uses a graphical representation of profits and losses at various volume levels to determine the maximum contribution, and therefore maximum profit level.

This approach requires estimating a demand curve. Since demand estimates at any price are likely to be approximate it may be useful to show bands of profit rather than single numbers.

Sales pricing using market data may be further refined by providing a simple risk analysis through looking at the likely probabilities of demand at each selling price level.

Probabilities of occurrences may be used to weight the various estimated levels of demand at each price (and hence contribution) level to calculate expected values. The total expected values at each price level may then be compared. The optimum selling price is the one having the highest total expected value.

Pricing policy

The traditional approach to sales pricing policy is full cost plus pricing. The disadvantages are that it:

- ◆ ignores competition and the relationships between demand and price
- ◆ does not necessarily maximise profit
- ◆ requires the apportionment of shared costs when several products are produced
- ◆ may ignore the distinction between variable, fixed and opportunity costs

Other cost-based approaches may be used, for example minimum pricing.

A company may maximise profits where marginal cost equals marginal revenue.

Sales pricing may consider market data and take account of risk and uncertainty. Three other factors should also be considered:

- ◆ price elasticity: the percentage change in the quantity demanded arising from a percentage change in price:
 - elastic demand is where a fall or rise in price will increase or reduce demand such that total revenue will be higher or lower than at the current price
 - inelastic demand (for example cigarettes) is the converse
- ◆ price discrimination occurs when an organisation sells the same products at different prices in two or more different markets (note the extensive use of this practice by the oil companies that sell petrol at a range of prices throughout their garages distribution outlets in different locations)
- ◆ pricing decisions should always take account of competitive pricing

Decision trees

Decision trees enable a sequence of interrelated decisions, and their expected outcomes, to be reported pictorially.

A decision tree is a pictorial method of showing a sequence of interrelated decisions and their expected outcomes. Decision trees can incorporate both the probabilities of, and values of, expected outcomes.