

Practitioner information

Introduction

This resource introduces learners to some of the most common methods for costing and pricing products or services. Learners explore direct/indirect and variable/fixed costs, and use the **Product costing and pricing online interactive tool** to model how changes in production and external costs alter the direct, marginal, and absorption cost of a unit of production. They are introduced to the basics of activity-based costing before considering advantages and disadvantages of cost-plus, value, and feature pricing in engineering.

Topic links

- Enterprise
- Financial concepts
- Direct, indirect, variable, and fixed costs
- Direct (prime), marginal, and absorption costing
- Activity-based costing
- Cost-plus, value, and feature pricing models/strategies

Suggested learning outcomes

Learners will be able to:

- name the four types of engineering and business cost, and describe how they add to the cost of a product unit

- explain how to calculate marginal and absorption costings, and when to use each method
- name some applications, advantages, and disadvantages of pricing models.

Why this topic is relevant for engineers

Cost control and pricing strategy are essential components of a successful startup or scaleup enterprise. Many new enterprises fail due to an incomplete understanding of their true product and operating costs, or a failure to set an effective price point that balances profit per unit with sales volume. This topic introduces learners to these key concepts.

Delivering the theory: Understanding costs

- Learners could first consider some costs involved in their own lives, especially those background costs of which they may not always be aware, like household expenses or insurance.
- Explore and highlight the definitions of each type of cost in the matrix so learners understand how a cost can be both direct and variable, for example. Learners can suggest other examples of each type of cost that might be associated with software or service provision. Organise these ideas in a table on the board to which the whole class can contribute.

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- Expand on this by considering machining a block of material in your workshop to produce a finished part. Learners can identify all the activities needed and the background (overhead) costs, and which vary or are fixed.
- Emphasise that cost control is one half of creating profit. Budgeting is introduced here but is not explored in detail.

Delivering the theory: Marginal and absorption costing

- Follow the simple example to explore how each type of cost is added to the cost of the part in each form of costing. Discuss how, for example, some labour is direct (such as machining) and some may be indirect (such as labour for maintenance) but both contribute to making the unit of product.
- Take time to consider how marginal costing can determine a price for a product, for example, when offering a discount, where all the variable costs need to be covered but the 'contribution' (the selling price minus the variable costs) towards overheads can be chosen. Contrast this with absorption costing, which determines the overall or 'true' profit each part makes and therefore fixes how much overhead each unit covers.

Delivering the theory: Pricing models for enterprise

- Highlight that many enterprises fail because their selling price cannot cover their costs, despite this being an obvious need. An effective price point balances profit per unit with sales volume to deliver the greatest overall profit.
- Explore the examples and ask learners to add more, then discuss the advantages and disadvantages.
- Highlight the distinction between pricing and revenue models.

Delivering the case study: Costing decisions

- This case study uses the **Product costing and pricing online interactive tool**. Learners do not need to make specific production decisions but will explore and consider the costing data that would inform them.
- Discuss how long-term changes in material, energy, and rent will influence costs and therefore longer-term revenue and profit projections (this can link to the resource **10. Valuing startups and scaleups**).