Unit 23: Engineering Procurement

Unit code: F/601/1500
QCF level: 4
Credit value: 15

• Aim

This unit examines procurement or purchasing strategies and their importance in engineering management. The unit shows how procurement contributes to profit and how it helps to maintain a competitive edge.

• Unit abstract

Procurement involves the input of goods and services and the interface between the supplier and the client. Large companies organise themselves with a purchasing or materials department to carry out the procurement function. Since the cost of manufacture is mostly made up of material spend as opposed to labour or overhead, companies need to focus on the amount spent on materials. This in turn puts an onus on engineers to design products, organise manufacturing processes and layout a factory with the use of materials in mind. For example, engineers ought to design products with standard sized components to take advantage of lower costs. In fact, many companies deploy engineers into their purchasing departments in order to capitalise on opportunities for cost savings. This unit gives learners an understanding of procurement strategies and their importance in engineering management. The unit also shows how procurement contributes to profit and how it helps to maintain a competitive edge.

The unit starts with an introduction and development of the principles and applications of resource (materials and equipment) management in an engineering operation. It then takes the learner into the strategies for procurement such as systems, roles, risks and managing procurement. Learners then consider the procurement issues of contract, sourcing and evaluation of communications, finance and delivery.

• Learning outcomes

On successful completion of this unit a learner will:

1. Understand the principles of resource management and its application to an engineering operation
2. Understand how the procurement strategy contributes to the achievement of an engineering operation’s objectives
3. Understand the importance of the procurement contract and its application to engineering operations
4. Understand procurement pricing and management strategies within an engineering organisation
5. Be able to review and evaluate procurement strategies within an engineering organisation.
Unit content

1. Understand the principles of resource management and its application to an engineering operation

   Methods: selection; acquisition; maintenance; replacement criteria

   Principles: procurement strategy; specification; supplier identification; selection criteria; working with specialist suppliers; stock control

2. Understand how the procurement strategy contributes to the achievement of an engineering operation’s objectives

   Systems and processes: standard specification; tendering; estimating/quoting; methods of procurement eg centralised, contract, lease, Pareto analysis, ‘just in time’ (JIT); equipment; materials; services; terms and conditions

   Procurement officer role: assessing operational needs; selecting suppliers; quality and quantity control; timing; company policies; budgetary restrictions eg discounts, receipt and control of purchases, wastage factors

   Risks: financial; physical; task duplication; direct and indirect costs; effect on the internal and external customer eg quality issues, legal implications; effect on process and outcome activities of organisations

   Managing procurement: profit opportunities; direct and indirect cost saving opportunities; minimising risk; maximising profit; approved supplier lists; evaluating the ‘best deal’; performance indicators and benchmarking

3. Understand the importance of the procurement contract and its application to engineering operations

   Contract: definition; different forms; parties; essentials for a valid contract; rules of offer and acceptance; terms eg express/implied, conditions/warranties; vitiating factors eg misrepresentation, fundamental mistake, breaches, fraud

   Sourcing issues: method of supply eg buying products/services, tendering, sub-contracting/outourcing; value for money; hygiene factors; range; choice; service guarantee; legal and contractual compliance; trace origin data; yield; methods of payment; credit and price; negotiating skills

   Evaluation: communication; finance; delivery; compliance with specified requirements; packaging; industrial relations; attitude to customers; sample testing and defect elimination
4 Understand procurement pricing and management strategies within an engineering organisation

Pricing management: techniques; negotiating price reductions; controlling or resisting price increases; quantity discounts; prompt payment discounts

Management strategies: competition between suppliers; developing profit margins to increase financial returns; releasing cash and capital by minimising stock; negotiating extended credit; determining the right quality for the right application; negotiating and developing delivery schedules

5 Be able to review and evaluate procurement strategies within an engineering organisation

Review: standard specifications; terms and conditions; monitoring; redeveloping strategy; contemporary developments; comparing and contrasting purchasing options

Evaluate: cost models eg return on investment (ROI), productivity gain, human resource benefits
## Learning outcomes and assessment criteria

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<thead>
<tr>
<th>Learning outcomes</th>
<th>Assessment criteria for pass</th>
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<tr>
<td><strong>On successful completion of this unit a learner will:</strong></td>
<td><strong>The learner can:</strong></td>
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<tr>
<td></td>
<td>1.1 assess the methods available for managing materials</td>
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<tr>
<td>LO1 Understand the principles of resource management and its application to an engineering operation</td>
<td>1.2 explain the principles involved when procuring equipment and the ongoing requirements over the life of that equipment</td>
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<td>2.1 recommend procurement systems and processes with related performance indicators and benchmarking for an engineering operation</td>
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<tr>
<td>LO2 Understand how the procurement strategy contributes to the achievement of an engineering operation’s objectives</td>
<td>2.2 analyse the risks involved in a procurement strategy</td>
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<td>2.3 examine the role of the procurement officer within an engineering operation</td>
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<td>3.1 explain the importance of a procurement contract</td>
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<td>LO3 Understand the importance of the procurement contract and its application to engineering operations</td>
<td>3.2 evaluate the sourcing issues for a procurement situation using a range of suppliers</td>
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<td>3.3 review the management techniques used to appraise and evaluate the suppliers of an engineering management operation</td>
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<td>4.1 explain the management strategies that can be used to maximise the purchasing power of the procurement officer</td>
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<td>LO4 Understand procurement pricing and management strategies within an engineering organisation</td>
<td>4.2 compare pricing management techniques used in an engineering procurement situation</td>
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<td>5.1 plan a review and evaluation to measure the success of a company’s procurement strategy</td>
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<td>LO5 Be able to review and evaluate procurement strategies within an engineering organisation</td>
<td>5.2 conduct a review and evaluation for a procurement scenario in an engineering operation.</td>
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Guidance

Links
This unit can be linked to Unit 7: Business Management Techniques and Unit 11: Supply Chain Management.

This unit can be linked to the SEMTA Level 4 National Occupational Standards in Engineering Management, particularly Unit 4.17: Obtain Resources for the Implementation of Engineering Activities.

Essential requirements
There are no essential requirements for this unit.

Employer engagement and vocational contexts
Centres should try to work closely with industrial organisations to bring realism and relevance to the unit.

Access to procurement sections of local organisations, if possible, provides a useful information source. Part-time learners working in procurement can be used as a resource by sharing their experiences of different company approaches to procurement.