The Chartered Institute of Logistics and Transport

PD05

Inventory

Standards

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Earlstrees Road

Corby

Northants

NN17 4AX

Tel: 01536 740100

Fax: 01536 740101

PD05 Inventory

Unit purpose and aim

This option unit addresses application of inventory techniques within industry and its contribution to supply chain performance. It aims to show how effective inventory strategy can lead to competitive advantage through improvements in customer service, operational efficiency and the utilisation of company assets.

Elements

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Element PD05-1

What is Inventory Management?

Learning Outcomes The learner will:	Assessment Criteria The learner can:
1.1. Understand the purpose of inventory management within a supply chain strategy.	1.1.1 Demonstrate how inventory management can contribute towards competitive advantage.
1.2. Understand the different types of inventory and the “real” cost of holding stock.	1.2.1 Demonstrate how stockholding cost may be measured.
1.3. Understand the implications of the “shrinking service window” in terms of product availability and responsiveness.	1.3.1. Evaluate different stockholding strategies for different types of organisation.

Indicative Content	
Inventory within the supply chain	The logistics environment, competitive advantage, holding inventory, de-coupling points, inventory management in the overall company.
Inventory and stock	Components of stock, the stock-time curve, average stock handling, stock investment, cost of holding stock.
Implications of the “shrinking service window”	Trade-off between cost and service level; demand lead times.

Element PD05-2

Inventory Principles

Learning Outcomes The learner will:	Assessment Criteria The learner can:
2.1. Understand the principles of the traditional fixed period and fixed quantity models of inventory control.	2.1.1. Demonstrate how to apply appropriate techniques to plan the inventory requirements of an organisation.
2.2. Understand the impact of service levels and lead times on re-order level calculations.	2.2.1. Calculate and compare the impact of different variables on re-order levels.
2.3. Understand the different types of order quantity models, their limitations and relevance to modern inventory control systems.	2.3.1. Evaluate the value of traditional inventory models for different types of operation.

Indicative Content	
Order quantity models	Principles, models: fixed order systems; period systems. Demand: classification; profile; distribution; variability. Product life cycle positioning.
Impact of service levels and lead times on reorder levels	Normal distribution patterns, service levels, safety stock, lead time variability, re-order levels, when to order
Order quantity models	Models: economic order quantity; coverage analysis; min-max ordering system; Poisson distribution; Slow moving items. Limitations: relevance to modern systems; impact of different order systems on stock investment.

Element PD05-3

Modern Inventory Systems

Learning Outcomes The learner will:	Assessment Criteria The learner can:
3.1. Understand the development of modern inventory control techniques.	3.1.1 Explain basic inventory control principles to modern systems.
3.2. Know the benefits of “dynamic” stockholding models that incorporate demand forecasts, tracking signals and seasonality factors.	3.2.1. Demonstrate the importance and impact of forecast accuracy on stock levels.
3.3. Know the different types of systems currently used by companies and the extent to which they use traditional inventory control models.	3.3.1. Compare and contrast the effectiveness of modern inventory control systems against traditional models.
3.4. Understand the difficulties in developing and maintaining current inventory control systems.	3.4.1. Develop a framework for monitoring the performance of an inventory control system.

Indicative Content	
Modern inventory techniques	Globalisation and the supply chain, inventory management, information systems.
“Dynamic” stockholding models	Forecasting principles, forecasting methods: simple average; weighted average; moving average. Smoothing: exponential; seasonal. Long term forecasting, forecast error, tracking signals.
Systems currently used	Manufacturing inventory in the supply chain, supplier and customer alignment. Developments in retail logistics.
Problems developing and maintaining current systems	Evaluation of inventory performance. Use of IT in current systems.

Element PD05-4

Managing Inventory through a Network

Learning Outcomes The learner will:	Assessment Criteria The learner can:
4.1. Understand how to organise inventory within a supply chain network to maximise customer service and operational efficiency.	4.1.1 Evaluate how inventory strategy may need to change in response to increasing service requirements, broader product ranges and increased competition.
4.2. Understand the potential advantages and disadvantages of Distribution Requirements Planning (DRP).	4.2.1. Determine how stocks can best be allocated between sites within a distribution network.
4.3. Know how current initiatives in inventory management enable the minimisation of stock within a network.	4.3.1. Demonstrate different models to minimise stock within a network.

Indicative Content	
Organising inventory within a supply chain	Strategic importance of networks, facility location theory, inventory in multilevel distribution systems, modelling network systems, effects of e-commerce on networks.
Distribution Requirements Planning (DRP)	Information requirements, schedules, fairshares allocations, advantages, disadvantages.