

Unit 35: Supply Chain and Stock Management

Unit code:	K/502/5493
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

The aim of this unit is to examine the main principles, concepts and practices of supply chain management in relation to stock.

● Unit introduction

The unit addresses the definition of a supply chain, supply chain planning, why it is important in any business, how the supply chain operates and the principles for supply chain improvement.

Learners will examine the components of supply chains and how they vary within different organisations in relation to stock. Learners will learn how organisations manage and control their supply chain functions to gain both competitive and cost advantage.

Next learners will consider the processes undertaken to integrate supply chains. This includes linking functions, managing inventory, setting up monitoring and tracking systems and developing information systems.

Learners will examine the advantages and potential disadvantages of integrating supply chains from an organisational perspective.

Much of the learning will be based on the analysis of a range of organisations either through visits, or visiting speakers or case studies. The learners will be encouraged to use their knowledge to make recommendations for action in a range of business situations.

● Learning outcomes

On completion of this unit a learner should:

- 1 Understand the meaning of supply chain management
- 2 Know the process of supply chain integration
- 3 Know the advantages of an integrated supply chain to an organisation
- 4 Know the disadvantages of an integrated supply chain to an organisation.

Unit content

1 Understand the meaning of supply chain management

Supply chain management: definition of a supply chain in relation to stock; main components; variations within different organisations; the 'upstream' buy-side and the 'downstream' sell-side; linear and networked configurations; 'supply chain' as added value; 'push and pull' supply chain models; importance in meeting expectations of marketing function

The supply chain: producers and processors; suppliers; customers; consumers; distribution organisations; delivery (centralised, decentralised)

2 Know the process of supply chain integration

Process: links with company objectives; linking/integrating production planning; sourcing and procurement; materials handling; inventory management; manufacturing/processing; single process of distribution and after-sales service; speeding up delivery; mini service staff in call centres dealing with supply exceptions

3 Know the advantages of an integrated supply chain to an organisation

Advantages: implications for human resource management; implications for organisational rationalisation; re-visioning staff to strategic goals rather than functional ones; opportunity for dramatically higher volume and speed of transactions; opportunity to maintain/increase market position; reduced supply chain complexity; potential for smooth process operations following complex initial set-up; enhanced, lean and agile systems

Opportunities for greater reliability: implications for use of just-in-time (JIT) production techniques; implications for negotiation of purchase contracts with suppliers; opportunities for improvement in payment and cash flow; advantages of integration such as lower operating costs and online order tracking as a marketing point eg global courier industry

4 Know the disadvantages of an integrated supply chain to an organisation

Vulnerability: external unforeseen shocks; changes to supply chains from e-business; difficulty of meeting raised customer expectations for delivery reliability; risks of increased dependence on linked supply chain processes; difficulties of partnership negotiations; need for real-time databases for effective logistics management and online tracking facilities; complexities of implementing in an industry-specific manner eg integrating buyer systems with supplier systems; security problems (billing and payment procedures)

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 explain the meaning of supply chain management		
P2 explain how supply chains for three different products have been developed		
P3 describe ways in which a supply chain for a selected product has been integrated	M1 explain how the integration of the supply chain for a selected product could be further improved	
P4 describe the potential advantages of an integrated supply chain over conventional non-integrated approaches for a selected organisation [IE]	M2 explain how an integrated supply chain may contribute to the increased effectiveness for a selected organisation	D1 evaluate the degree of organisational change necessary to exploit the advantages of an integrated supply chain in two selected businesses [IE]
P5 describe the potential disadvantages of dependence on an integrated supply chain with reference to a selected organisation. [IE]	M3 explain the circumstances under which supply chain integration may fail to enhance organisational effectiveness with reference to a selected organisation.	D2 evaluate and justify the case for abandoning integrated supply chain management with reference to a selected organisation. [IE]

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills which are embedded in the assessment of this unit. By achieving the criteria, learners will have demonstrated effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

The areas of procurement, stock keeping and logistics are likely to be new to learners who have no experience of working in these areas so it is advisable to introduce learners to the simple buying and goods handling processes through investigating how procurement and inventory are managed in the school or college. This would then form a basis upon which an understanding of supply chain management can be built.

There is a need to explain clearly the nature of the supply chain with its upstream or buy-side and downstream or sell-side. Throughout the unit learners should be introduced to examples of how the models are applied and examples with which they are familiar would be helpful, eg case studies of Waterstones and Amazon, together with Tesco and Sainsbury's (www.tesco.com; www.sainsburystoyou.com). An understanding of the complexities of business operations, the connections between production and related procurement, inventory (stock) and distribution activities should be developed incrementally through analysing case studies. There will be a need to introduce the learners to theoretical concepts but this should be interspersed with learning activities such as producing graphical representations of supply chains, estimating the costs of inventory holdings and making recommendations for improving supply chains. The tutor could also draw on any experiences learners may have of integrated supply chains perhaps through their part-time jobs.

The importance of organising supply chain management to deliver the level of logistical service promised by marketing initiatives cannot be overstated. Learners should visit, or see DVDs, of a sophisticated integrated supply chain and evaluate the benefits, cost savings and competitive advantages. Learners could also analyse well-known instances of supply chain failure such as Sainsbury's empty supermarket shelves, the fence panel shortage of 2007 and instances involving the armed forces. At the time of writing business leaders are being challenged by unforeseen, large scale changes, brought about by the "credit crunch" so learners can consider the dilemma faced by businesses in deciding how interdependent and complex a supply chain to set up. Learners should be able to see both sides of the argument: on the one hand the potential advantages of increased efficiency and reduced costs, and on the other hand the greater vulnerability to unforeseen changes.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan demonstrates one way in planning the delivery and assessment of this unit.

Topic and suggested assignments/activities and/assessment
Introduction to unit and programme of learning
Whole group teaching – basic procurement and stock holding processes based on the school/college – visit from a buyer
Small group work – learners identify advantages and disadvantages of methods used on own school/college and share with rest of group
Whole group teaching – supply chain – upstream, downstream
Individual exercise – learners draw supply chain based on case study
Visit to a production environment with some level of integration of supply chain
Individual exercise – learners draw chart showing supply chain(s) from the visit
Whole group teaching – watch DVD on very integrated supply chain, identifying features

Topic and suggested assignments/activities and/assessment
Small group work – learners discuss whether practices in DVD example could be applied to production environment from the visit and make recommendations
Whole group teaching based on case studies – supply chain management and marketing – the interface and the chance to add value
Pair work based on case study with data – learners work out the amount a company could save through reducing stockholdings
Whole group – visit to production environment using ERP, or DVD showing how system works leading to pairs of learners identifying processes and benefits
Whole group teaching based on case study of supplier partnerships leading to discussion on advantages and risks
Whole group teaching – ECR and other SCM models using case studies and discussions
Whole group teaching – visit to information specialist for input on setting up and maintaining an appropriate information system
Pair work – based on case study of poor introduction of information system – learners highlight what went wrong and make recommendations for remedying it.
Assignment 1: Supply Chains and Products – based on a visit or case study with extra independent research
Whole group teaching – implications of introducing integrated SCM for human resource management
Small group work based on case study of organisation introducing integrated SCM. Learners devise methods of introducing change to staff
Whole group teaching on marketplace and efficiency advantages of integrated SCM
Pair work based on case study – learners define and estimate tangible benefits such as lead times, savings from reduced handling and reduced inventory etc. – Plenary
Small group work based on selection of news items that may have relevance to supply chains – learners identify possible implications and industries at risk and share results with others (could be a competition)
Whole group teaching based on risks not covered by learners and using case studies
Assignment 2: Supply Chain for the Organisation – based on a visit or case study with extra independent research
Supervised assignment time
Non-supervised study time and completion of assignments

Assessment

For the first two learning outcomes the assessment is based on explanations and descriptions of the supply chains for different products. The products can be from the same organisation or from different organisations but the supply chains themselves should be different. It would be helpful to learners if there is some identifiable scope for further integration of the supply chain.

For P1, learners need to explain the meaning of supply chain management; as always explanations should be in the learners' own words and use examples.

P2 will be achieved if learners explain how supply chains for three different products have been developed. Learners are not expected to write lengthy descriptions, but should cover the breadth of the supply chain. This could be achieved by an oral presentation. Evidence of this should include an individual observation record supplemented by other evidence such as learner's notes and/or visual aids.

For P3, learners can use one of the products from P2. The description should include relevant items from the unit content applied to the selected product.

To achieve M1 learners should build on P2 and P3 and explain how the integration of the supply chain for a selected product could be further improved. The learners should explain how at least three methods or models such as linking production planning and sourcing, minimising inventory, using ERP or introducing a VPN could be used to improve integration for the selected product. Generic information on the techniques will not satisfy the criterion.

For the remaining learning outcomes the focus is on the organisation rather than the product. It may be possible for learners to use the same organisation as they did for the previous learning outcomes or it may be beneficial to use a different organisation. It may also be advantageous for learners to select different organisations for learning outcomes 3 and 4. If the same organisation is used the learners could be presented with a different set of external circumstances for learning outcome 4. Whatever is decided it is important that the learner has sufficient access to information about the organisation(s) to fully address the criteria.

To achieve P4 learners should describe the advantages of an integrated supply chain over conventional approaches. The advantages must be specific to the organisation and should include the relevant parts of unit content.

For M2, the learners develop P4 into a full explanation where they link the advantages to the needs of the organisation.

For D1, this is further developed into an evaluation of the degree of change necessary to exploit the advantages of an integrated supply chain

For P5, learners should describe the potential disadvantages of dependence on an integrated supply chain and as for P4 it is important that these are specific to the organisation, rather than generic. The learners' responses should include consideration of the items of content listed under 'Vulnerability'.

For M3, learners show a greater ability to apply the unit content through explaining the circumstances in which an integrated supply chain may not produce the anticipated improvements for the organisation.

For D2, this is further developed into an evaluation and justification of the case for abandoning integrated supply chain management for the selected organisation.

Programme of suggested assignments

The table below shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3, M1	Supply Chains and Products	Learners work for an organisation with varying levels of supply chain integration and they are asked to analyse supply chains of products in the same industry.	Learners use case studies to analyse supply chains for three different products and for one product they explain how it could be improved.
P4, P5, M2, D1	Supply Chain for the Organisation	Learners work for an organisation considering integrating its supply chain.	Learners produce a report describing the advantages and disadvantages of an integrated supply chain and evaluating the impact on the organisation.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Business sector suite. This unit has particular links with the following unit titles in the Business suite:

Level 3
The Business Environment
Introduction to Marketing
The Impact of Communications Technology on Business
Website Design Strategy.

This unit links to the National Occupational Standards for Marketing and Sales Non-specialists Unit 1 and 4.

Essential resources

For this unit learners should have access to a suitable business teaching environment with access to the internet to carry out research. Tutors may consider building a bank of resource materials to ensure there is a sufficient supply of relevant information across a range of business types and sectors.

Learners can generate evidence from a work placement or work experience. Other students may have access to information related to family owned and run businesses.

Employer engagement and vocational contexts

For this unit learners should select an organisation and specific products. This will enable them to conduct research. Visiting speakers from local organisations would provide learners with a wider understanding of the range of products that are used and managed in different sectors. Visits to organisations to observe at first hand the way in which supply chains operate would complement the input from visiting speakers. Centres should develop links with local businesses. Many businesses and chambers of commerce want to promote local business so are often willing to provide work placements, visit opportunities, information about businesses and the local business context and visiting speakers.

The website www.businessbritainuk.co.uk provides information about business in Britain and has extensive links to other business and business news sites.

The Federation of Small Businesses (www.fsb.org.uk) provides information support and guidance about small businesses in the UK.

Indicative reading for learners

Textbooks

Bowersox D, Closs D and Bixby-Cooper M – *Supply Chain Logistics Management* (McGraw-Hill, 2006) ISBN 0071254145

Christopher M – *Logistics and Supply Chain Management* (FT Prentice Hall, 2004) ISBN 0273681761

Emmett S – *Supply Chain in 90 minutes* (Management Books 2000 Ltd, 2005) ISBN 1-85252-476-6)

Gattorna J – *Living Supply Chains: How to Mobilize the Enterprise Around Delivering What Your Customers Want* (FT Prentice Hall, 2006) ISBN 0273706144

Journal

Logistics & Transport Focus (The Chartered Institute of Logistics and Transport (UK))

Websites

www.ciltuk.org.uk	The Chartered Institute of Logistics and Transport (UK)
www.cips.org	The Chartered Institute of Purchasing and Supply
www.conspectus.com	Independent monthly IT reports on a range of different topics
www.dell.com	Dell computers and technology solutions
www.itoi.com	Web resources and information
www.rswww.com	Europe-wide distribution of industrial maintenance and repair products
www.sainsburystoyou.co.uk	Sainsbury's online shopping
www.shellchemicals.com	Shell Chemicals
www.tesco.co.uk	Tesco
www.waterstones.co.uk	Waterstones page on Amazon.com

Delivery of personal, learning and thinking skills

The table below identifies the opportunities for personal, learning and thinking skills (PLTS) that have been included within the pass assessment criteria of this unit.

Skill	When learners are ...
Independent enquirers	<p>describing the potential advantages of an integrated supply chain over conventional non-integrated approaches for a selected organisation</p> <p>describing the potential disadvantages of dependence on an integrated supply chain with reference to a selected organisation</p> <p>evaluating the degree of organisational change necessary to exploit the advantages of an integrated supply chain in two selected businesses</p> <p>evaluating and justifying the case for abandoning integrated supply chain management with reference to a selected organisation.</p>

Although PLTS are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	planning and carrying out research into supply chains
Creative thinkers	looking at advantages and disadvantages of supply chains
Reflective learners	<p>setting goals with success criteria</p> <p>inviting feedback on their own work and dealing positively with praise, setbacks and criticism</p> <p>evaluating their experiences and learning to inform future progress</p>
Team workers	<p>Working in small groups to discuss improving supply chains</p> <p>managing activities to reach agreements and achieve results</p>
Self-managers	<p>seeking out challenges or new responsibilities and showing flexibility when priorities change</p> <p>dealing with competing pressures, including personal and work-related demands</p> <p>responding positively to change, seeking advice and support when needed</p>
Effective participators	taking part in group activities, working with others.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	researching supply chains
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	tabulating information about supply chains
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	finding illustrative materials for presentations and tabulations about supply chains creating diagrams, presentations and tabulations about supply chains
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	exploring, extracting and assessing the relevance of information from websites about organisations
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	bringing together a variety of materials gathered through research preparing information to present to other about supply chains
Select and use ICT to communicate and exchange information safely, responsibly and effectively including storage of messages and contact lists	communicating with other members of a group
Mathematics	
Understand routine and non-routine problems in a wide range of familiar and unfamiliar contexts and situations	using numerical data in relation to supply chains
Identify the situation or problem and the mathematical methods needed to tackle it	
Select and apply a range of skills to find solutions	
Use appropriate checking procedures and evaluate their effectiveness at each stage	
Interpret and communicate solutions to practical problems in familiar and unfamiliar routine contexts and situations	
Draw conclusions and provide mathematical justifications	

Skill	When learners are ...
English	
Speaking and listening – make a range of contributions to discussions and make effective presentations in a wide range of contexts	<p>carrying out group work investigating supply chains and their structure</p> <p>working with others in investigating supply chains</p> <p>making presentations about supply chains</p>
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	<p>reading about supply chains and their structures</p> <p>reading about organisations to obtain data to compare business supply chains</p>
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	<p>writing materials to provide information about organisations</p> <p>producing labelled charts and diagrams showing the structure of supply chains and the links between sections within organisations.</p>