

## **SQA Advanced Unit Specification**

### **General information for centres**

**Unit title:** Supply Chain Fundamentals

**Unit code:** HP5R 47

**Superclass:** VB

**Publication date:** August 2017

**Source:** Scottish Qualifications Authority

**Version:** 01

### **Unit purpose**

This Unit will introduce learners to Supply Chain Fundamentals. The objective of the Unit is to allow learners to gain an understanding of how supply chains operate and how they are managed in order to meet the needs of customers.

This is a specialist Unit primarily intended for learners who aspire to take up a career in a supply chain related position where the integration of the supply chain will play a pivotal role in the organisation achieving both financial and non-financial targets. It would also be appropriate for those involved in service, retail, public and manufacturing organisations, including inventory, stores, production, logistics, distribution planning, demand management and purchasing where an understanding of the importance of supply chains will be crucial to the success of the organisation.

The Unit will also be useful for those expecting to embark on further studies in a supply chain related discipline. It is also relevant for those already in the workplace who wish either to enhance their qualifications or progress in their chosen career.

### **Outcomes**

On successful completion of the Unit the learner will be able to:

- 1 Describe the three main types of industry within a supply chain and their interaction.
- 2 Devise a suitable supply chain model to include three major flows.
- 3 Explain the effect of customer needs on inventory levels.
- 4 Describe the basic management requirements of a supply chain.
- 5 Explain the importance of supply chain relationships.

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### Credit points and level

2 SQA Credits at SCQF level 7: (16 SCQF credit points at SCQF level 7\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from National 1 to Doctorates.*

### Recommended entry to the Unit

Access to this Unit is at the discretion of the centre. However, learners are expected to have work experience relevant to the activities of the supply chain. It is not necessary that learners hold a team leader, supervisory or management position.

Learners that do not have relevant work experience may be accepted on the understanding that they will be able to access work experience through a work placement in an appropriate supply chain discipline.

Learners are also expected to have competency in numeracy and communication skills to at least SCQF level 5. This may be evidenced by possession of the Core Skills Units in *Numeracy* and *Communication* or similar qualifications or experience.

### Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

### Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

The Assessment Support Pack (ASP) for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

### Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements).

### Unit specification: statement of standards

#### Unit title: Supply Chain Fundamentals

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

#### Outcome 1

Describe the three main types of industry within a supply chain and their interaction.

#### Knowledge and/or Skills

- ◆ Supply chain concept
- ◆ The manufacturing transformation process
- ◆ The role of primary industries
- ◆ The role of secondary industries
- ◆ The support role of tertiary industries

#### Evidence Requirements

Learners will need evidence to demonstrate all aspects of their Knowledge and/or Skills in this Outcome by showing that they can:

- ◆ define the supply chain concept making reference to the structure and purpose
- ◆ describe the concept of 'upstream' suppliers and 'downstream' customers
- ◆ explain **one** transformation process of manufacturers in the supply chain from:
  - Unit, or 'one-off' requirements (project)
  - intermittent (discontinuous or batch)
  - flow/continuous (mass or process)
- ◆ describe the role of **one** primary industry within the supply chain from:
  - mining
  - quarrying
  - farming
  - oil extraction
  - fishing
  - forestry
- ◆ describe the role of **one** secondary industry within the supply chain from:
  - chemical
  - engineering
  - electronics
  - automotive
  - food
- ◆ identify the support roles of **one** tertiary industry within the supply chain from:
  - finance
  - insurance
  - legal
  - communications
  - administration
  - transport

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### Outcome 2

Devise a suitable supply chain model to include three major flows.

#### Knowledge and/or Skills

- ◆ Relationships within a supply chain
- ◆ Customer needs
- ◆ Material flow
- ◆ Financial flow
- ◆ Information flow
- ◆ Transformation processes

#### Evidence Requirements

Learners will need evidence to demonstrate all aspects of their Knowledge and/or Skills in this Outcome, by devising a suitable supply chain model for a specific organisation showing that they can:

- ◆ explain **three** relationships within the supply chain from:
  - customers
  - suppliers
  - sales and marketing
  - manufacturing
  - distribution
  - customer service
  - finance
  - information flow
- ◆ describe the flow of materials within the supply chain
- ◆ describe the requirements of the financial information flow illustrating the effects of value adding
- ◆ describe the requirements of information flow within the supply chain
- ◆ explain how the transformation process affects the flow of materials and financial information

### Outcome 3

Explain the effect of customer needs on inventory levels.

#### Knowledge and/or Skills

- ◆ Customer needs
- ◆ The economic order quantity calculation and application
- ◆ Re-order point procedure and application
- ◆ Make-to-stock environment

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### Evidence Requirements

Learners will need evidence to demonstrate all aspects of their Knowledge and/or Skills in this Outcome by showing that they can explain:

- ◆ the actions required and possible consequences of failing to meet customer needs, making reference to **three** of the following:
  - appropriate service level
  - technical and non-technical support and advice
  - timeous response
  - accurate quantities
  - quality products
  - 'Bullwhip' effect
- ◆ the process of calculating the economic order quantity and its application making reference to **three** of the following:
  - annual usage
  - cost of holding stock
  - processing cost
  - ABC analysis
- ◆ the re-order point procedure and application making reference to **three** of the following:
  - order quantity
  - lead time demand
  - order level
  - order point
  - safety stock
  - class 'C' items
- ◆ **three** features of a make-to-stock environment from:
  - forecasts
  - finished goods stock
  - customer demand
  - high service level

### Outcome 4

Describe the basic management requirements of a supply chain.

### Knowledge and/or Skills

- ◆ Supply chains — internal and external
- ◆ Supply chain logistics
- ◆ 'Supply Chain Operations Reference' (SCOR)

### Evidence Requirements

Learners will need evidence to demonstrate all aspects of their Knowledge and/or Skills in this Outcome by showing that they can, using a suitable model:

- ◆ describe the management of an internal supply chain covering **three** of the following:
  - sales and marketing
  - purchasing
  - goods received
  - stores
  - point of use
  - quality

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- manufacturing
- dispatching
- internal transport
- customer service
- packing
- ◆ describe the management of the external supply chain covering **three** of the following:
  - customers
  - suppliers
  - distribution
  - warehousing
  - export agents

In addition learners should:

- ◆ describe how the SCOR model can assist an organisation to manage its supply chain

## Outcome 5

Explain the importance of supply chain relationships.

### Knowledge and/or Skills

- ◆ Co-ordination
- ◆ Impact of lack of co-ordination
- ◆ Theoretical management levers
- ◆ Practical management levers

### Evidence Requirements

Learners will need evidence to demonstrate all aspects of their Knowledge and/or Skills in this Outcome by showing that they can:

- ◆ explain the importance of co-ordination of the supply chain and the potential impact of lack of co-ordination
- ◆ identify **two** theoretical management levers used to achieve co-ordination from:
  - strategic component
  - process component
  - operational component
- ◆ identify **two** practical management levers that could be used to achieve co-ordination from:
  - information systems
  - inventory control
  - contracts
  - make or buy decision-making

The learner evidence presented requires a satisfactory response to all of the above Evidence Requirements for each Outcome.

### Unit specification: support notes

#### Unit title: Supply Chain Fundamentals

Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

#### Guidance on the content and context for this Unit

This Unit is likely to form part of an SQA Advanced Supply Chain Management Group Award. It is designed to enable learners to understand the definitions and concepts of supply chain management. Learners will be able to construct a supply chain clearly identifying the major flows and be able to explain the effect that customers' needs may have on inventory levels.

The Unit covers the management requirements for a supply chain and the importance of ensuring good relationships throughout the supply chain.

It is recommended that the learners should have experience of working in a supply chain or associated function.

There may be opportunities for learners who successfully achieve this Unit to gain exemptions from a number of professional bodies. Learners should contact the relevant professional bodies to ascertain their current exemption policies.

Outcome 1 covers the main constituents of a supply chain and their roles.

- ◆ primary, secondary and tertiary industries
- ◆ supply chain concepts
- ◆ suppliers and customers
- ◆ transformation process

Outcome 2 involves the construction of a supply chain model.

- ◆ material, financial and information flows
- ◆ supply chain relationships
- ◆ customer needs
- ◆ effect of the transformation process on the three flows

Outcome 3 examines the effect of customer need on inventory levels.

- ◆ meeting customer needs
- ◆ calculating economic order quantities
- ◆ re-order point
- ◆ make-to-stock environment

Outcome 4 covers the management requirements of a supply chain.

- ◆ internal and external supply chains
- ◆ supply chain logistics
- ◆ Supply Chain Operations Reference (SCOR)

Outcome 5 examines the importance of supply chain relationships.

- ◆ co-ordination within the supply chain
- ◆ theoretical management levers
- ◆ practical management levers

### Guidance on approaches to delivery of this Unit

It is recommended that this Unit be one of the first delivered within the SQA Advanced Supply Chain Management Group Award. The Outcomes for this Unit should be delivered in order as this will represent a logical progression in knowledge and skills for learners.

It is anticipated that this Unit may be delivered to a variety of learner groups and, wherever possible, teaching and research should be slanted towards their individual needs. The latest materials and examples from current and business practice should be used to highlight and illustrate the differences between organisations.

In addition to the classroom explanations and discussions that this Unit provides, learners should be encouraged to make use of relevant websites to gather information for themselves. Direction may be required on the location of useful information sources, however, learners should be encouraged to use their initiative to discover the other various sources of information available.

### Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of Instruments of Assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

To achieve this Unit, learners must produce satisfactory assessment evidence that shows they have achieved all of the Unit Outcomes. This Unit could be assessed by a report based on the learner's workplace experience or by questions based on a case study.

Where a workplace situation is used, care should be taken to ensure that it would provide learners with sufficient opportunity to meet the Evidence Requirements for the Unit. Reports can be supplemented by additional questions to ensure all aspects of the Evidence Requirements are met. The report may be presented in any suitable way.

Where evidence is presented as a written report it is recommended that each of the five sections covering each Outcome is approximately 800 words in length. Where appropriate, diagrams may be included.

It is recommended that the report be submitted in stages, ie after each Outcome, so that the individual learner's progress can be monitored and, where necessary, remediation can take place before progressing to the next stage.

However, it is recognised that not all learners will have the necessary industrial experience when embarking on the Course, and where this is the case learners can be assessed using an appropriate case study. Learners will be required to answer questions based on the case study covering all Evidence Requirements for all five Outcomes. Where a case study is used this may be issued to the learners 2–3 weeks in advance of the assessment event at which the questions will be distributed. The assessment should be carried out under open-book supervised conditions.

### Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [www.sqa.org.uk/e-assessment](http://www.sqa.org.uk/e-assessment).

### Opportunities for developing Core and other essential skills

There are no Core Skills embedded in this Unit. However, there are opportunities for developing the Written Communication component of the Core Skill of *Communication* at SCQF level 5 and the Core Skill of *Numeracy* at SCQF level 5 in this Unit.

#### **Communication — Written Communication at SCQF level 5**

All five Outcomes provide learners with the opportunity to develop their written communication skills.

Opportunities will occur where learners present written responses as part of their work throughout the Unit, but especially in the assessment which may be a written project or responses to questions based on a specific case study. Learners will, therefore have to analyse information and organise the content of their report/responses into a logical and effective structure.

#### **Numeracy — Using Number at SCQF level 5**

In Outcome 3 learners will be expected to calculate various outcomes and become familiar with forecasting. They will also have the opportunity to use numbers as part of their project report. They will apply a range of numerical skills to solve work-related problems.

#### **Numeracy — Using Graphical Information at SCQF level 5**

In Outcome 2 learners will have the opportunity to show graphically their skills by developing a supply chain model, and through its expansion to show graphically the various flows.

They will again have the opportunity to use these skills as part of their project report by selecting an appropriate graphical form to communication information.

## Administrative information

Version	Description of change	Date

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced Qualifications.

**FURTHER INFORMATION:** Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our [Centre Feedback Form](#).

### General information for learners

#### Unit title: Supply Chain Fundamentals

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit introduces you to the basic fundamentals of supply chain management and may be studied as a standalone Unit or as part of an SQA Advanced Certificate/Diploma in Supply Chain Management and is designed to enable you to gain knowledge and develop practical skills related to supply chain management.

Outcome 1 covers the three main types of industry and how they are organised to form a supply chain. You will learn about the definition of a supply chain and the role of each type of industry within the supply chain. You will also learn about the transformation process in the manufacturing activities within the supply chain.

Outcome 2 allows you to develop the supply chain so that you can devise a simple supply chain which will allow you to illustrate the three major flows. The aspect of customer needs will be introduced along with the various relationships that exist with supply chains. The transformation process will be explored further to look at the effect it has on the three major flows.

Outcome 3 looks at the effects customer needs have on inventory levels, and you will learn how the customer requirements will impact on the inventory levels that will be required at different stages in the supply chain including the 'Bullwhip' effect. Different types of manufacturing structures will be looked at for different types of customer needs and how the inventory levels will be determined.

Outcome 4 looks at the management requirement of a supply chain, and you will learn about the different factors involved in both the internal and external supply chains. For the external supply chain you will learn about the basic requirements of logistics. A major element in this Outcome will be the use of the 'Supply Chain Operations Reference' (SCOR) model and how it can assist organisations to manage their supply chain.

Outcome 5 will focus on the importance of supply chain relationships and the potential impact on an organisation where these relationships lack co-ordination. You will learn about the management levers, both theoretical and practical that can be used to achieve co-ordination.

This Unit could be assessed in a variety of ways. If you have industrial experience in a supply chain environment you may be assessed by means of an integrated report which covers **all** the Evidence Requirements for all five Outcomes. Where you do not have the relevant industrial experience, you may be assessed through the use of a relevant case study with associated questions.

If you achieve this Unit there may be opportunities for you to gain exemption from a number of professional bodies. It will be your responsibility to ascertain from the professional body what is included in their current exemption policies.