SQA Advanced Unit Specification

General information for centres

Unit title: Supply Chain: Total Quality Management (SCQF level 8)

Unit code: HP65 48

Superclass: VD

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Version: 01

Unit purpose

This Unit introduces learners to the principles of; elements of; techniques used in; and planned implementation of a Total Quality Management programme.

It is primarily intended for learners who aspire to take up a management role in a supply chain environment with any manufacturing, service or logistics organisation. It is also appropriate for those involved in the various functions associated with planning, procurement, distribution, marketing and finance.

It is one of the Units from the SQA Advanced Supply Chain Management Group Award but may also be taken as an individual Unit.

Candidates who successfully complete the SQA Advanced Supply Chain Management Group Award may be able to articulate to an appropriate Degree Course.

Outcomes

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

1 Evaluate how the fundamental principles of Total Quality Management will be advantageous in a Supply Chain.
2 Analyse why Total Quality Management should be an integral part of a business.
3 Assess why Performance Measurement is important, in a Supply Chain, and what is likely to be measured.
4 Evaluate why Process Management is fundamental to Total Quality Management.
5 Evaluate the importance of total employee involvement to Total Quality Management.
6 Analyse how an organisation would plan and implement a Total Quality Management programme.

Credit points and level

2 SQA Credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

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 a manufacturing, service or logistics organisation. It is not necessary that learners hold a team leader, supervisory or management position.

Learners are also expected to have competency in numeracy and communication skills to at least SCQF level 5 of the Core Skills framework. 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.

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.

Unit specification: statement of standards

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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.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Evaluate how the fundamental principles of Total Quality Management will be advantageous in a Supply Chain.

Knowledge and/or Skills

- Definition of Total Quality Management
- The four 'Ps' and three 'Cs' of Total Quality Management
- The Total Quality Management Approach

Outcome 2

Analyse why Total Quality Management should be an integral part of a business.

Knowledge and/or Skills

- Business strategy
- Supply Chain partnerships
- Collaborative working using appropriate standards
- Designing for quality using Quality Function Deployment (QFD)

Outcome 3

Assess why Performance Measurement is important, in a Supply Chain, and what is likely to be measured.

Knowledge and/or Skills

- Performance measurement
- Continuous improvement
- Cost of quality
- Self Assessment
- Audits

Outcome 4

Evaluate why Process Management is fundamental to Total Quality Management.

Knowledge and/or Skills

- Process Management
- Process Flowcharts
- Redesign/re-engineering
- Quality management systems
- Process improvement
- Taguchi
- Six Sigma

Outcome 5

Evaluate the importance of total employee involvement to Total Quality Management.

Knowledge and/or Skills

- Training and development
- Team working — Belbin, or similar
- Employee involvement through Kaizen, or similar
- Communication

Outcome 6

Analyse how an organisation would plan and implement a Total Quality Management programme.

Knowledge and/or Skills

- A framework for implementing a Total Quality Management programme
- Stages of implementation
- Sustaining improvement

Evidence Requirements for this Unit

The Outcomes for the Unit will be assessed under open-book conditions either individually through a series of short reports or restricted response questions or by an integrated approach where all Outcomes are assessed via an on-going project.

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills across all Outcomes by showing that they can:

Outcome 1

- Evaluate a core definition of Total Quality Management and possible advantages for a supply chain.
- Assess each of the Four ‘Ps’ and Three ‘Cs’ that provide a framework for Total Quality Management.

- Analyse the Total Quality Management approach in terms of **two** of the following:
  - customer focus
  - competitive advantage
  - a philosophy of prevention
  - involvement of all employees.

Outcome 2

- Evaluate why an organisation should include Total Quality Management as part of their business strategy.
- Assess the key considerations when establishing supply chain partnerships.
- Evaluate the advantages of using a Standard such as BS 11000 Collaborative Business Relationships.
- Demonstrate in detail, using an actual example, how Quality Function Deployment (QDF) works.

Outcome 3

- Evaluate why it is important to measure performance and in general terms what should be measured.
- Assess the need for all functions within a supply chain to strive for continuous improvement.
- Analyse the elements of cost associated with **four** of the following:
  - Quality planning
  - Quality assurance
  - Training
  - Quality audits
  - Supply chain and vendor rating
  - Scrap
  - Rework
  - Repair (in the field)
  - Warranty claims
  - Returns
  - Liability
  - Loss of goodwill
- Evaluate a process of self-assessment including the criteria to be examined.
- Explain the difference between 'First Party', Second Party', and 'Third Party' audits.
- Assess the purpose of audits.
- Compare two audit standards and why an organisation may be required to be audited against them.

Outcome 4

- Evaluate why it is important that all the processes in an organisation are well managed.
- Create a process flowchart, using appropriate symbols, and explain how the completed flowchart may be used.
- Justify how the argument that Business Process Re-engineering (BPR) and Total Quality Management (TQM) are complementary.
- Describe the key categories of an ISO 9001 quality management system.

- Select **three** tools/methodologies, **one** from each section, and evaluate their use in Process Improvement:

— DRIVE	)	
— Process mapping	)	
— Force field analysis	)	1
— Cause and effect diagrams	)	
— CEDAC	)	
— Brainstorming	)	
— Pareto analysis	)	
— Statistical process control (SPC)	)	2
— Control charts	)	
— Check sheets	)	
— Bar charts	)	
— Scatter Diagrams	)	
— Matrix analysis	)	3
— Dot plot or tally chart	)	
— Histograms	)	

- Analyse the basic principles of **either** the Taguchi **or** Six Sigma methodology.

Outcome 5

- Evaluate a training and development process that could be implemented in relation to Total Quality Management.
- Analyse the skills required for carrying out team roles.
- Evaluate employee involvement in an organisation.
- Explain how the introduction of a Total Quality Management Programme could be communicated to the workforce.

Outcome 6

- Develop a framework for implementing a Total Quality Management programme.
- Analyse the stages for implementing a Total Quality Management programme.
- Critically examine an approach to ensuring sustained improvement.

Unit specification: support notes

Unit title: Supply Chain: Total Quality Management (SCQF level 8)

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 provide candidates with an understanding of how Total Quality Management will achieve business success by providing customer satisfaction in terms of the business' products and/or services, processes and culture in terms of employee involvement.

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

Alternatively they should be able to access such experience on a temporary or a work place experience basis.

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.

The Outcomes cover a variety of topics associated with Total Quality Management but some topics that may have been expected to appear have been deliberately omitted. This is to avoid a repeat of topics that appear in other Units and in particular Unit HP5K 47 *Supply Chain: Business Excellence* which is closely aligned to Total Quality Management.

Outcome 1 — Covers the fundamental principles of Total Quality Management and introduces the learner into the thinking behind a Total Quality Management Approach.

Outcome 2 — Total Quality Management is not a tool that can be used in isolation and this Outcome considers why *Total Quality Management* should be an integral part of any business.

Outcome 3 — A major aspect of Total Quality Management is continuous improvement in all aspects of a business and therefore the business requires a mechanism that will indicate whether or not this is being achieved and this Outcome will explain performance measurement and what it is that needs to be measured.

Outcome 4 — Because most, if not all, of the activities carried out in an organisation can be described as a process it is essential that the learner understands process management and is able to illustrate why this process thinking is fundamental to Total Quality Management.

Outcome 5 — Another major feature of Total Quality Management is the need to involve employees in the programme. This is not just specific employees but **ALL** employees and this Outcome will allow the learner to evaluate the importance of this involvement.

Outcome 6 — It is important that, once the requirements of Total Quality Management are understood, a Total Quality Management programme is properly implemented and this Outcome will allow the learner to analyse how an organisation would plan and implement such a programme.

Guidance on approaches to delivery of this Unit

This Unit may be delivered as one of the Units within the SQA Advanced Diploma in Supply Chain Management but in certain circumstances may be delivered as an individual Unit.

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, but also a common approach to Total Quality Management.

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 other various sources of information available.

For this Unit industrial visits, or preferably work placements, should be organised and guest speakers should be invited to speak to learners, especially where the learners do not have industrial experience.

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.

The Outcomes could be assessed holistically by generating one project or report based on candidate research covering all Knowledge and Skills and Evidence Requirements. This assessment may be managed by identifying a number of stages based on the Outcomes contained in the Unit. For example each stage could represent more than one Learning Outcome as the Learning Outcomes tend to follow a progression through the requirements for Total Quality Management. Outcomes 1 and 2 are setting the scene and determining how Total Quality Management fits into an organisation's Business Strategy. Outcomes 3 and 4 are about measuring how the Total Quality Management programme is performing and the techniques used to enable an organisation to continually improve. Outcomes 5 and 6 focus on employee involvement and team working and using these skills to be able to implement a Total Management Programme.

Candidates would be expected to submit each stage by a designated date and time. Candidates must identify sources of information used in the compilation of the report.

Where options appear, as in Outcome 4 for example, the options should change each time the assessment is offered.

The candidate's report should not just be copied from a text book(s) or from the internet but, wherever possible, should relate to actual companies where information is gleaned through visits, guest speakers or short work placements.

The assessment task will be carried out in the candidate's own time and will comprise a final report of approximately 3,000 to 4,000 words or equivalent.

Candidates must complete a form to say that what they are submitting has been done by them and this should be countersigned by the tutor/assessor, or some similar documented arrangement.

An alternative method of assessment, for learners who have no industrial experience, could be to provide the learners with appropriate case study material about which a set of questions can be asked. The questions must cover all the specified Evidence Requirements. The case study may be issued 2–3 weeks in advance of the assessment with the questions being issued at the assessment event. The assessment should be carried out under open-book supervised conditions. As above it would be possible to have more than one assessment event covering two or more Outcomes per event.

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.

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.

Opportunities for developing Core and other essential skills

Core Skill	SCQF level	Opportunities for development
Communication Written Communication (Reading) Written Communication (Writing)	 Level 6 Level 6	All six Outcomes can contribute to the reading and writing aspects of this Core Skill. Candidates are expected to read and understand complex written information. There are opportunities to develop written communication where candidates produce written responses as these have to be well-structured and clear, addressing the Evidence Requirements. Evidence is required in the form of the production of a structured report.
Problem Solving	Level 6	In researching an organisation and the analysis and evaluation of its activities, relating to a Total Quality Management programme there are opportunities to develop the following Core Skill components: Problem Solving (Critical Thinking), Problem Solving (Planning and Organising) Problem Solving (Reviewing and Evaluating)
Information and Communication Technology (ICT)	Level 5	Candidates are likely to use Information Technology when undertaking research into their chosen organisations. Finished reports may include graphics, tables or spreadsheets to illustrate points.
Numeracy	Level 5	Candidates may be able to gain Numeracy skills throughout the Unit but particularly in Outcome 4 and perhaps Outcome 5.
Working with Others	Level 6	Group work is a key attribute of Total Quality Management and as such candidates will be Reviewing and Evaluating throughout and gathering evidence.

Administrative information

Version	Description of change	Date

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: Total Quality Management (SCQF level 8)

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.

In order for an organisation to be competitive, especially in a global market supply chain, organisations need to be aware of the importance of Total Quality Management. It is a management system which is customer focused and involves all employees in continual improvement.

This Unit is designed to enable you to understand why Total Quality Management is important and why it should be an integral part of an organisation's Business Strategy.

On Completion of the Unit you should be able to:

1 Evaluate how the fundamental principles of Total Quality Management will be advantageous in a Supply Chain.
2 Analyse why Total Quality Management should be an integral part of a business.
3 Assess why Performance Measurement is important, in a Supply Chain, and what is likely to be measured.
4 Evaluate why Process Management is fundamental to Total Quality Management.
5 Evaluate the importance of total employee involvement to Total Quality Management.
6 Analyse how an organisation would plan and implement a Total Quality Management programme.

You will develop an understanding of the role and operation of a Total Quality Management programme and will be able to recognise its importance to organisations.

You will also develop an understanding of the process involved in implementing a Total Quality Management programme.

Assessment of the Unit is likely to be conducted one project or report which covers all knowledge, skills and Evidence Requirements contained in the Unit. This project may be broken down into subsections which will be explained fully by you tutor. Assessments are likely to require you to undertake research in your own time.

Over the course of this Unit, there may be opportunities for you to develop Core Skills, in the areas of *Communication*, *Problem Solving*, *Numeracy, Working with Others,* and *ICT*.

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