

Supply Chain Management: Lean and Agile Approaches

HIGHER NATIONAL DIPLOMA

物流管理：精益与敏捷的方法

【英】苏格兰学历管理委员会 (SQA)

英文原版

Unit Student Guide

SUPPLY CHAIN



中国时代经济出版社

SCOTTISH
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AUTHORITY

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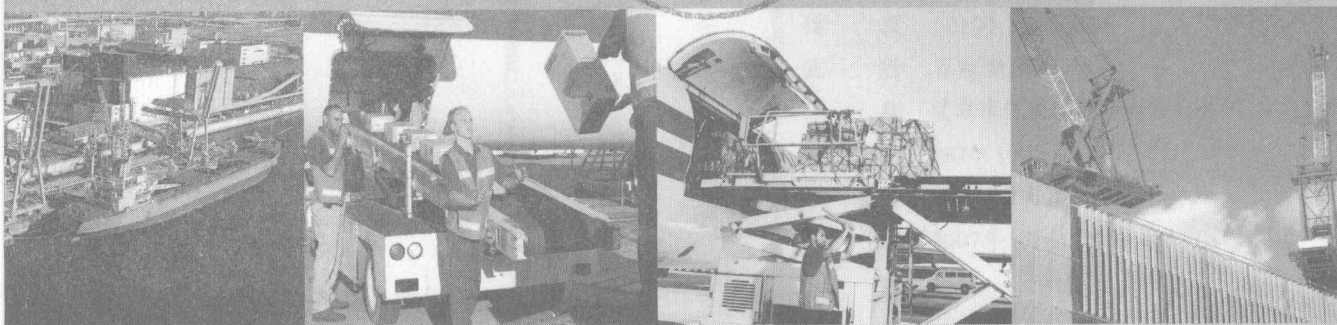
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[英] 苏格兰学历管理委员会 著

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1

Introduction to the Scottish Qualifications Authority

This Unit **Supply Chain Management: Lean and Agile Approaches** has been devised and developed by the Scottish Qualifications Authority (SQA). Here is an explanation of the SQA and its work:

The SQA is the national body in Scotland responsible for the development, accreditation, assessment, and certification of qualifications other than degrees.

Its website can be viewed on: www.sqa.org.uk

SQA's functions are to:

- devise, develop and validate qualifications, and keep them under review
- accredit qualifications
- approve education and training establishments as being suitable for entering people for these qualifications
- arrange for, assist in, and carry out, the assessment of people taking SQA qualifications

- quality assure education and training establishments which offer SQA qualifications
- issue certificates to candidates.

In order to pass SQA units, students must complete prescribed assessments. These assessments must meet certain standards.

The Unit Specification outlines the **three** Outcomes that students must complete in order to achieve this unit. The Specification also details the knowledge and/or skills required to achieve the outcome or outcomes. The Evidence Requirements prescribe the type, standard and amount of evidence required for each outcome or outcomes.

2

Introduction to the Learning Resource Pack

2.1 Introduction to the Unit

The purpose of this unit is to provide you with detailed knowledge and a comprehensive overview of methods, techniques and factors concerned with lean and agile approaches in supply chain management.

On completion of this unit you should be able to take up a management position in an organisation where the supply chain will play a major role. It will also be appropriate for those involved in various functions associated with service, retail, public and manufacturing organisations, including inventory, stores, production, distribution planning, demand management and purchasing.

There are three Outcomes for the Unit.

Outcome 1

Determine the objectives of a lean and agile approach to supply chain management.

Outcome 2

Critically evaluate the methods, techniques and

management tools used in that accomplishment of lean and agile supply chain management.

Outcome 3

Identify the resultant benefits in working a lean and agile approach to supply chain management.

The approximate study time that you should allocate for the completion of the unit is 40 hours.

2.2
Learning
Material
Required for
this Unit

The Learning Pack will provide you with the knowledge and understanding to complete the Outcomes for this Unit successfully, but it would be helpful if you have access to the Internet in order to supplement information and understanding on some topics.

You also need access to at least one company to see how they approach some of the situations described in the Learning Pack. In order to successfully complete the assessment for this unit, you will need to be able to discuss your findings in each of your individual companies in order to compare the lean and agile approaches.

It is recommended that they spend at least one day per week in the company, but this will increase during the periods of the assignments where you may be expected to follow a process within the organisation that may take several days.

2.3 Using the Learning Resource Pack

The Learning Resource Pack is designed to lead you through a series of learning activities that will allow you to consolidate your understanding on the topic areas included in the pack for **Supply Chain Management: Lean and Agile Approaches**.

As you work through the Pack you will encounter symbols. These symbols indicate that you are expected to do a task. **These tasks are not Outcome Assessments.** They are exercises designed to consolidate learning or encourage thought, in preparation for the Outcome Assessment.

Activity



1

This symbol indicates an Activity (A). Usually, activities are used to improve or consolidate your understanding of the subject in general or a particular feature of it.

As you work through the Pack there will be considerable scope for discussion and you are encouraged to contribute fully from your own knowledge and experience. The activities are intended to focus ideas on your own workplace and local industry. When participating in a group activity you should give full and free rein to their imagination concerning different types of supply chain. Knowledge of the operating environment of the company you work for, or a business

you have some experience of, will be useful when participating in some of the activities and discussions.

As you work through the Pack you will encounter the following symbol which indicates that you should answer a Self-Assessment Question.



Usually, Self-Assessment Questions are used to improve or consolidate your understanding of the subject in general or a particular feature of it. Where suggested responses to Self-Assessment Questions are provided in the Learning Resource Pack, students are strongly discouraged from looking at these before attempting the activity. The Self-Assessment Question throughout the Learning Resource Pack will help you to prepare yourself for the formal assessments, and to identify topic areas in which you will require clarification. The Self-Assessment Question will not serve this purpose if you look at the answers before trying them!

2.4
What Do I
Have to Do to
Achieve this
Unit?

You will be required to successfully complete this Learning Resource Pack to achieve the Unit. To achieve the Unit you will also be required to successfully complete the integrated assessment for all three Outcomes, which will be an open book report. You must present evidence in your assessments that you

have met all the evidence requirements for the Unit, as identified in the Unit Specification.

Task 1

Task 1 will be the first part of an integrated report covering all three outcomes. This first part will allow you to demonstrate the knowledge and skills, by showing an understanding of the concept of modern manufacturing methods in lean and agile manufacturing, the techniques and systems used and the resultant benefits gained.

Specifically in Task 1 you will be required to provide evidence that you can:

- Explain the concept of modern lean and agile methods
- Explain the concept of just-in-time manufacturing and Kanban operation
- Critically evaluate a minimum of four areas of focus in waste reduction
- Evaluate lean and agile approaches in different industries
- Describe economic benefits to both supplier and customers using the lean and agile approaches.

Task 2

Task 2 will be the second part of an integrated report that requires you to critically evaluate the methods, techniques and management tools used in the accomplishment of lean and supply chain management.

Specifically in Task 2 you will be required to provide evidence that you can:

- Critically evaluate the just-in-time and kanban concepts
- Critically evaluate a minimum of four tools, techniques and problem-solving techniques used for lean and agile management
- Compare lean and agile approaches for a minimum of two different industries
- Describe the cultural requirements for flexible teamwork implementation.

Task 3

Task 3 will be the third and final part of an integrated report that requires you to identify the resultant benefits in working a lean and agile approach to supply chain management, both economical and practical.

Specifically in Task 3 you will be required to provide evidence that they can:

- **Describe the economic benefits of lean and agile manufacturing in the supply chain**
- **Evaluate the effects of production improvements and customer satisfaction caused by changing work methods**
- **Identify and describe the competitive edge realised for organisations through the lean and agile approach.**

3

Learning Material

3.1 Lean and Agile Approach to Supply Chain Management

This section is concerned with finding out what is meant by the terms ‘lean’ and ‘agile’, the concepts used to achieve lean and agile approaches, what the outcomes of these approaches mean to industry and who the beneficiaries will be. By the end of this study section you will be able to:

- explain the concept of modern lean and agile methods
- explain the concept of just-in-time methods and the Kanban operation
- critically evaluate the areas of focus in waste reduction
- evaluate lean and agile approaches within different industries
- describe economic benefits to both supplier and customer using the lean and agile approaches.

Section 3.1 is made up of 5 parts:

- 3.1.1 *Concept of Modern Lean and Agile Methods*
- 3.1.2 *Concept of Just-in-Time Manufacturing and Kanban Operations*
- 3.1.3 *Areas of Waste Reduction*
- 3.1.4 *Lean and Agile Approaches in Different Industries*
- 3.1.5 *Economic Benefits to the Supplier and Customer using Lean and Agile Approaches*

3.1.1 Concept of Modern Lean and Agile Methods

Before we look at the concept of modern lean and agile methods we should briefly look at where the terms lean and agile originated. The concept of lean production is attributed to the Japanese motor manufacturer Toyota. They identified certain *wastes* in the organisation and wet about to eliminate them, for example, having to repair faulty goods, high levels of inventory and idle workers. Most large manufacturing organisation now employ lean concepts but it does not just apply to manufacturing organisations it applies to many different types of industries, logistics, and indeed the whole supply chain.

The *agile* concept followed on later, especially as the importance of supply chains grew and was based on the flexibility of an organisation to respond to the changing market's needs.

A recent example of lean and agile is an electronics company based in central Scotland whose traditional manufacturing base was being eroded as competitors were moving their manufacturing units to lower labour cost locations. The decisions facing the company were to either close the manufacturing unit in Scotland or do something about it. They chose the latter, carried out an extensive survey into their manufacturing process, tackled their 'waste' problems and as a result changed their customer base which meant manufacturing to a much smaller batch production system, which in some cases meant manufacturing a single item.

This is one example of agility and it was achieved by applying the lean manufacturing principles that we will visit later. The result for the organisation was that they were now flexible, or agile, enough to compete in a specialist market with very low batch quantities where each customer's requirements were different.

There were also some strange side effects to this example that you may wish to think about later in this outcome. The company's revenue decreased, not a desirable outcome you may think, but their costs also decreased but at a considerably higher rate so the net effect was excellent. They are now starting to increase their customer base because of their growing reputation and a lean and agile organisation.

Hopefully that has set the scene and we will now look in more detail at lean and agile concepts.