

part one

introducing to your companion



This SAGE Course Companion offers you an insider's guide into how to make the most of your undergraduate course, and extend your understanding of key concepts covered in the course. It will provide you with essential help in revising for your course exams, preparing and writing course assessment materials, and enhancing and progressing your knowledge and thinking skills in line with course requirements. It isn't intended to replace your textbooks or lectures – it is intended to save you time when you are revising for your exams or preparing coursework. Note that RE-vision implies that you looked at the subject the first time round!

The Companion will help you to anticipate exam questions, and gives guidelines on what your examiners will be looking for. It should be seen as a framework in which to organise the subject matter, and to extract the most important points from your textbooks, lecture notes, and other learning materials on your course.

This book should direct you to the key issues (and key thinkers) in the operations management field. Whichever textbook you are using, the basics are the basics: we have given some guidance on where topics are covered in specific books, but you should read the Companion in parallel with your textbook and identify where subjects are covered in more detail in both your text and in your course syllabus.

There is also a study and revision skills guide in Part Three which will help you to learn more efficiently. Learning is best accomplished by seeing the information from several different angles – which is why you attend lectures and tutorials, read the textbook, and read around the subject in general. This book will help you to bring together these different sources.

How to use this book

This book should be used as a supplement to your textbook and lecture notes. You may want to glance through it quickly, reading it in parallel with your course syllabus and textbook, and note where each topic is

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covered in both the syllabus and this Companion. Ideally, you should have already bought this book before your course starts, so that you can get a quick overview of each topic before you go into the lecture – but if you didn't do this, all is not lost. The Companion will still be equally helpful as a revision guide, and as a way of directing you to the key thinkers and writers on operations management.

The next part of this section provides an introduction to the subject area of operations management and its relevance to people in organisations. The next section goes into the curriculum in more detail, taking each topic and providing you with the key elements. Again, this does not substitute for the deeper coverage you will have had in your lectures and texts, but it does provide a quick revision guide, or a 'primer' to use before lectures.

You can use this book either to give yourself a head start before you start studying operations management, in other words give yourself a preview course, or it can be used as a revision aid, or of course both. Each section contains within it the following features:

- Tips on handling the information in exams, or reminders of key issues: these will help you to anticipate exam questions, and to remember the main points to bring in when answering them.
- Examples: These are useful for putting the theory into a 'real-world' context, and can of course be used in exams to illustrate the points you make.
- Running themes: the areas that will always be of interest to an operations manager. You will find that these can almost always be brought into an exam question, and you will be expected to do so.
- Input from key thinkers in the field: this will be useful to quote in exams, as well as providing you with the main influences in the development of operations management.
- Sample exam questions with outline answers: these should help you be better prepared for the actual questions, even though they will (of course) be different.
- Taking it Further section: this is about taking your thinking a stage beyond simply laying out the current 'received wisdom'. The Taking it Further section introduces some criticality, often from 'sharp end' academic thinking, and will help you to take a broader conceptual view of the topic: on a practical level, this is the type of thinking that moves you from a pass to a first!

Part Three of this Companion is a study guide which will help you with getting more from your lectures, remembering more when you are sitting exams, and with writing essays.

Part Four includes a glossary of the key terms that are used in the book and an index.

Introduction to operations management

Operations management is about the management of the processes that produce or deliver goods and services. Not every organisation will have a functional department called 'operations', but they will all undertake operations activities because every organisation produces goods and/or delivers services.

The operations manager will have responsibility for managing the resources involved in this process. Positions involved in operations have a variety of names, and may differ between the manufacturing and service sectors. Examples of job titles involved in manufacturing include logistics manager and industrial engineer. Examples in the service industry include operations control manager (scheduling flights for an airline), quality manager, hotel manager and retail manager.

People involved in operations participate in a wide variety of decision areas in an organisation, examples of which are given below.

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| 1 | Service Operations Management | How do we ensure customers receive a prompt service? |
| 2 | Operations Strategy | What strategy should be followed? |
| 3 | Operations Performance Objectives | How do we measure the performance of our operations processes? |
| 4 | Process Types | How do we configure the process which will deliver our service to customers? |
| 5 | Layout Design | How do we organise the physical layout of our facilities and people? |
| 6 | Long-term Capacity Planning | How do we ensure we have the correct amount of capacity available when needed? |
| 7 | Facility Location | What should be the location of our operations facilities? |
| 8 | Process Technologies | What role should technology have in the transformation of materials in the operations system? |
| 9 | Designing Products and Services | What products and services should the organisation provide? |
| 10 | Process Design | How do we design the service delivery process? |
| 11 | Job Design | How do we motivate our employees? |

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| 12 | Planning and Control | How do we deploy our staff day-to-day? |
| 13 | Capacity Management | How do we ensure that our service is reliably available to our customers? |
| 14 | Inventory Management | How can we keep track of our inventory? |
| 15 | Lean Operations and JIT | How do we implement lean operations? |
| 16 | Enterprise Resource Planning | How do we organise the movement of goods across the supply chain? |
| 17 | Supply Chain Management | What benefits could e-procurement bring to our operations? |
| 18 | Project Management | How do we ensure our projects finish on time and within budget? |
| 19 | Quality | How can we implement a TQM programme? |
| 20 | Operations Improvement | How do we improve our operations performance over time? |

The scale, importance and hopefully the excitement of operations management are indicated by the range of these decision areas. You will find that most texts on the subject area of operations management are structured around these decision areas, as are the 'Core areas of the curriculum' chapters in this text.

Operations management did not emerge as a formal field until the 1950s and 1960s when textbooks specifically dealing with operations management were published. Major developments up to this point impacting on the field of operations management start with the Industrial Revolution of the eighteenth century. Before this time products were made individually by skilled craftspeople in their homes and so were relatively expensive to produce. The use of inventions such as the steam engine (by James Watt in England, 1764) and concepts such as the use of interchangeable parts (Eli Whitney, 1790) and the division of labour (described by Adam Smith, 1776) led to the move to volume production. Here mechanisation (provided by steam power) was combined with the use of low-skilled labour (people were given small, simple tasks using the concept of the division of labour) to produce standard parts in high volumes which could be assembled into products. These ideas were

refined by the use of scientific management, developed by Frederick W. Taylor, who incorporated elements such as time study. The invention of the moving assembly line (first used by the car manufacturer Henry Ford in 1913) led to the era of mass production at the start of the twentieth century. This represented a major breakthrough in the ability of production systems to offer goods to a large amount of customers at a price they could afford.

An additional element in the make-up of operations management occurred during the Second World War, when a need to solve the complex problems of logistics and weapons-system design led to the development of the area of operations research. A number of the techniques developed then are still part of the operations management field today. As stated earlier, operations management as a discipline then began to emerge in the 1960s and has continued to develop since.

The 1970s saw the use of computers in Materials Requirements Planning (MRP) software for inventory control and scheduling. The 1980s saw the emergence of the just-in-time (JIT) philosophy from Japan which transformed the way businesses deliver goods and services. In response to the need to improve the quality of goods and services, the ideas of Total Quality Management (TQM) were widely adopted in the 1980s. The 1990s saw the emergence of such concepts as supply chain management and Business Process Reengineering (BPR). Most recently, the use of the internet to conduct transactions or e-commerce has changed the way operations management is performed.

The history of operations shows how the field has adapted and continues to change as it tries to respond to an ever greater range of challenges, from the needs of customers who require high quality low price goods delivered quickly to managing the impacts of global competition and addressing environmental concerns.

