

运营管理精要

(英文版)



Essentials of Operations Management

Nigel Slack

【英】 Alistair Brandon-Jones 著

Robert Johnston



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内 容 简 介

本书在系统地介绍了运营管理的基本概念、基本理论和方法的同时,力图全面反映这一学科的新进展,强调运营管理对提高企业整体竞争力的贡献。通过穿插一些制造业和服务业中的简短案例,突出运营管理的实用性,并使用了大量图表以加强读者的直观理解。每章最后均配有本章小结、思考题,以便提高学生分析和解决实际问题的能力。本书非常适合目前 MBA 运营管理 40 个学时的课程。

本书适合 MBA 学生作为运营管理课程的教材,也可供管理类学生学习使用,同时也可供实际从业者作为参考读物。

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推 荐 序

运营管理作为工商管理专业的核心课,其重要性是显而易见的。同时,运营作为社会组织的基本活动之一也日益受到重视。不仅是高校,一些企事业单位的有关运营管理的培训也呈现出一种上升的趋势。此外,在日益倡导终身学习的大环境下,适当地汲取运营管理知识,对于个人成长而言其作用也是不言自明的。

结合自己这些年来教学体会,感觉教好这门课还是有难度、有挑战性的。除了该课程自身所具有的综合性、应用性、技术性等特点外,选好教材及选择好的教材对于教学效果本身无疑也会产生较大的影响。近来,国内各个高校都在探讨教学改革问题,课堂教学都或多或少地受到网络视频课的冲击,运营管理课的教学同样也面临新的挑战,无论是教学内容、教学方式还是在课时安排上,一些高校都在进行着有益的探索与尝试,但教材的选择显然是其中无法回避的关键问题。这些年有关运营管理方面的教材,可谓层出不穷,自编与引进的都有,数量很多,良莠不齐,令人眼花缭乱。其中虽不乏较经典的版本,但凤毛麟角。

由著名运营管理教授斯莱克等写作的《运营管理精要》一书则是其中特点鲜明、较为突出的一本。该书结构清晰,围绕指挥、设计、传递、开发等运营活动模型展开,总计13章的内容,包括运营战略、服务与产品设计、流程设计、供应网络管理、产能管理、库存管理、精益生产、质量管理、运营改进等运营管理的核心内容,各章内容紧密衔接、环环相扣,清晰地阐释了运营管理活动与驱动竞争优势间的逻辑路径。此外,该书实例与例题丰富,总计55个,通过实例与短案例来阐释真实运营活动所面临的一些问题;通过例题来阐明定性与定量方法的结合应用。对于每章开始提出的关键性问题会有一些概要性的解答;章后有一些学习性练习,用于检查对于各章所阐述概念的理解程度;每章后附有进一步的阅读材料及其说明以及可进一步浏览的网站,以进一步拓展相关内容的学习。正如该书前言中所言,其战略性、概念性、广泛性、实践性、国际性、平衡性等诸多特点均有所体现。

在这些年的运营管理教学中,国内教材与外版教材我都使用过,总的感觉外版教材的内容更新、更丰富,但相伴的问题就是在有限的课时下如何更精练地进行讲解,因为外版教材一般都篇幅较长。当然也可以精讲,让学生去大量阅读,以往也是这样做的,也只能这样做。我也一直在寻找篇幅适当、内容精当的版本,由斯莱克等写作的《运营管理精要》即是具备这样特点的书,特此推荐,供大家选择。该书不仅限于课堂教学、相关培训,对于个人自学也是一个不错的选择。

简明目录:

第1章 运营管理

第2章 运营战略

第3章 社会、环境和经济绩效

第4章 服务和产品设计

第5章 流程设计

第6章 选址、布局 and 流

第7章 供应网络管理

第8章 产能管理

第9章 库存管理

第10章 计划和控制

第11章 精益同步化

第12章 质量管理

第13章 运营改进

李 季
南开大学商学院

Preface

Introduction

Operations management is *important*. It is concerned with creating the services and products upon which we all depend. And all organizations create and deliver some mixture of services and products, whether that organization is large or small, for profit or not for profit, public or private. Thankfully, most companies have now come to understand the importance of operations. This is because they have realized that effective operations management gives the potential to improve both efficiency and customer service simultaneously. In addition, operations management is *everywhere*, it is not confined to the operations function. All managers, whether they are called Operations or Marketing or Human Resources or Finance, or whatever, manage processes and serve customers (internal or external). This makes at least part of their activities 'operations'.

Operations management is also *exciting*. It is at the centre of so many of the changes affecting the business world – changes in customer preference, changes in supply networks brought about by internet-based technologies, changes in what we want to do at work, how we want to work, where we want to work, and so on. There has rarely been a time when operations management was more topical or more at the heart of business and cultural shifts.

Operations management is also *challenging*. Promoting the creativity which will allow organizations to respond to so many changes is becoming the prime task of operations managers. It is they who must find the solutions to technological and environmental challenges, the pressures to be socially responsible, the increasing globalization of markets and the difficult-to-define areas of knowledge management.

The aim of this book

This book provides a clear, authoritative, well structured and interesting treatment of the essentials of operations management. The text provides both a logical path through the activities of operations management and an understanding of their importance in driving competitive advantage.

More specifically, this text is:

- *Strategic* in its perspective. It is unambiguous in treating the operations function as being central to competitiveness.

- *Conceptual* in the way it explains the reasons why operations managers need to take decisions.
- *Broad* in its coverage of the significant ideas and issues which are relevant to most types of operation.
- *Practical* in exploring the issues and challenges of making operations management decisions. The 'Operations in practice' feature, which starts every chapter, and the short cases that appear throughout, all explore the approaches taken by operations managers in practice.
- *International* in the examples which are used. The descriptions of operations practice come from all over the world.
- *Balanced* in its treatment. This means we accurately reflect the balance of economic activity between service and manufacturing operations.

Who should use this book?

Anyone who is interested in how services and products are created, delivered, and improved.

- *Undergraduates* on business studies, technical or joint degrees should find it sufficiently structured to provide an understandable route through the subject (no prior knowledge of the area is assumed).
- *MBA students* should find that its practical discussions of operations management activities enhance their own experience.
- *Postgraduate students* on other specialist masters degrees should find that it provides them with a well-grounded and critical approach to the subject.

Distinctive features

Clear structure

The structure of the book uses a model of operations management which distinguishes between direct, design, deliver and develop activities.

Illustrations-based

Operations management is a practical subject and cannot be taught satisfactorily in a purely theoretical manner. Therefore, we have used examples and short cases which explain some issues faced by real operations.

Worked examples

Operations management is a subject that blends qualitative and quantitative perspectives; where appropriate, 'worked examples' are used to demonstrate how both types of technique can be used.

Critical commentaries

Not everyone agrees about what is the best approach to the various topics and issues with operations management. This is why we have included 'critical commentaries' that pose alternative views to the one being expressed in the main flow of the text.

Summary answers to key questions

Each chapter is summarized in the form of a list of bullet points. These extract the essential points which answer the key question posed at the beginning of each chapter.

Learning exercises

Every chapter includes a set of problem type exercises. These can be used to check out your understanding of the concepts illustrated in the chapter. These activities can be done individually or in groups.

Want to know more?

Every chapter ends with a short list of further reading which takes the topics covered in the chapter further, or treats some important related issues. The nature of each further reading is also explained.

Useful websites

A short list of web addresses is included in each chapter for those who wish to take their studies further.

Ten steps to getting a better grade in operations management

We could say that the best rule for getting a better grade is to be good! However, there are plenty of us who, while fairly good, don't get as good a grade as we really deserve. So, if you are studying operations management, and you want a really good grade, try following these simple steps:

Step 1 Practice, practice, practice. Use the key questions and the learning exercises to check your understanding. Use the study plan feature in MyOMLab and practice to master the topics which you find difficult.

Step 2 Remember a few key models, and apply them wherever you can. Use the diagrams and models to describe some of the examples that are contained within the chapter. You can also use the revision pod casts on MyOMLab.

Step 3 Remember to use both quantitative and qualitative analysis. You'll get more credit for appropriately mixing your methods: use a quantitative model to answer a quantitative question and vice versa, but qualify this with a few well chosen sentences. Both the chapters of the book, and the exercises on MyOMLab, incorporate qualitative and quantitative material.

Step 4 There's always a strategic objective behind any operational issue. Ask yourself, 'Would a similar operation with a different strategy do things differently?' Look at the operations in practice and short cases in the book.

Step 5 Research widely around the topic. Use websites that you trust – we've listed some good websites at the end of each chapter and on MyOMLab. You'll get more credit for using references that come from genuine academic sources.

Step 6 Use your own experience. Every day, you're experiencing an opportunity to apply the principles of operations management. Why is the queue at the airport check-in desk so long? What goes on behind the 'hole in

the wall' of your bank's ATM machines? Use the videos on MyOMLab to look further at operations in practice.

Step 7 Always answer the question. Think 'What is really being asked here? What topic or topics does this question cover?' Find the relevant chapter or chapters, and search the key questions at the beginning of each chapter and the summary at the end of each chapter to get you started.

Step 8 Take account of the three tiers of accumulating marks for your answers.

- (a) Firstly, demonstrate your knowledge and understanding. Make full use of the text and MyOMLab to find out where you need to improve.
- (b) Secondly, show that you know how to illustrate and apply the topic. The short cases and operations in practice sections, combined with those on MyOMLab, give you hundreds of different examples.
- (c) Thirdly, show that you can discuss and analyse the issues critically. Use the critical commentaries within the text to understand some of the alternative viewpoints.

Generally, if you can do (a) you will pass; if you can do (a) and (b) you will pass well, and if you can do all three, you will pass with flying colours!

Step 9 Remember not only what the issue is about, but also understand why! Read the text and apply your knowledge on MyOMLab until you really understand why the concepts and techniques of operations management are important, and what they contribute to an organisation's success. Your new-found knowledge will stick in your memory, allow you to develop ideas, and enable you to get better grades.

Step 10 Start now! Don't wait until two weeks before an assignment is due.

Nigel, Alistair, and Bob

About the authors

Nigel Slack is the Professor of Operations Management and Strategy at Warwick University. Previously he has been Professor of Service Engineering at Cambridge University, Professor of Manufacturing Strategy at Brunel University, a University Lecturer in Management Studies at Oxford University and Fellow in Operations Management at Templeton College, Oxford.

He worked initially as an industrial apprentice in the hand-tool industry and then as a production engineer and production manager in light engineering. He holds a Bachelor's degree in Engineering and Master's and Doctor's degrees in Management, and is a chartered engineer. He is the author of many books in the operations management area, including *Operations Management* (with Stuart Chambers and Robert Johnston) sixth edition published by Financial Times Prentice Hall in 2010, *The Manufacturing Advantage*, published by Mercury Business Books, 1991, *Making Management Decisions* (with Steve Cooke), 1991, published by Prentice Hall, *The Blackwell Encyclopedic Dictionary of Operations Management* (with Michael Lewis) published by Blackwell in 2005, *Operations Strategy* together with Michael Lewis, the third edition published by Financial Times Prentice Hall in 2011 and *Perspectives in Operations Management (Volumes I to IV)* also with Michael Lewis, published by Routledge in 2003. He has authored numerous academic papers and chapters in books. He also acts as a consultant to many international companies around the world in many sectors, especially financial services, transport, leisure and manufacturing. His research is in the operations and manufacturing flexibility and operations strategy areas.

Alistair Brandon-Jones is a lecturer in Operations and Supply Management at the University of Bath School of Management, and a visiting lecturer at Warwick Medical School. Previously, he was a Teaching Fellow at Warwick Business School and also worked in a number of logistics and retail roles. He has a Bachelor's degree in Management Science and a Doctorate in Business

from the University of Warwick and is widely published in leading operations and supply management journals. *Essentials of Operations Management* is his second text (he co-authored *Quantitative Analysis in Operations Management* with Nigel Slack, published by Financial Times Prentice Hall in 2008).

His main research interest is customer-centric service design. This work focuses on the important role which internal and external customers can have in improving service delivery. His other research focuses on supply strategy and for this work he is the UK lead member for the International Purchasing Survey (www.ipsurvey.org) which explores procurement processes and performance across the globe. Alistair has consulting and executive development experience with organizations around the world, in various sectors including petrochemicals, health, financial services, manufacturing, defence, and government.

Robert Johnston is Professor of Operations Management at Warwick Business School and its Deputy Dean. He is the founding editor of the *International Journal of Service Industry Management* and he also serves on the editorial board of the *Journal of Operations Management* and the *International Journal of Tourism and Hospitality Research*. He is the author of the market leading text, *Service Operations Management* (with Graham Clark), now in its third edition (2008), published by Financial Times Prentice Hall. Before moving to academia Dr Johnston held several line management and senior management posts in a number of service organizations in both the public and private sectors. He continues to maintain close and active links with many large and small organizations through his research, management training and consultancy activities. As a specialist in service operations, his research interests include service design, service recovery, performance measurement and service quality. He is the author or co-author of many books, as well as chapters in other texts, numerous papers and case studies.

Contents

Guide to 'operations in practice' examples and short cases	ix	Trade-offs between performance objectives	62
Making the most of this book and MyOMLab	xii	<i>Summary answers to key questions</i>	64
Preface	xvi	<i>Learning exercises</i>	65
To the Instructor . . .	xviii	<i>Want to know more?</i>	66
To the Student . . .	xix	<i>Useful websites</i>	66
Ten steps to getting a better grade in operations management	xx	Chapter 4	
About the authors	xxi	The design of services and products	67
Acknowledgements	xxii	<i>Introduction</i>	67
Chapter 1		Why is good design so important?	69
Operations management	1	The stages of design – from concept to specification	72
<i>Introduction</i>	1	The benefits of interactive design	83
What is operations management?	3	<i>Summary answers to key questions</i>	87
Operations management is important in all types of organization	5	<i>Learning exercises</i>	88
The input–transformation–output process	9	<i>Want to know more?</i>	88
The processes hierarchy	13	<i>Useful websites</i>	89
Operations processes have different characteristics	17	Chapter 5	
The activities of operations management	21	Process design	90
<i>Summary answers to key questions</i>	22	<i>Introduction</i>	90
<i>Learning exercises</i>	23	What is process design?	91
<i>Want to know more?</i>	24	Process types – the volume–variety effect on process design	94
<i>Useful websites</i>	24	Detailed process design	100
Chapter 2		Human implications for process design	112
Operations strategy	25	<i>Summary answers to key questions</i>	116
<i>Introduction</i>	25	<i>Learning exercises</i>	117
What is strategy and what is operations strategy?	27	<i>Want to know more?</i>	117
The 'top-down' and 'bottom-up' perspectives	30	<i>Useful websites</i>	117
The market requirements and operations resources perspectives	32	Chapter 6	
The process of operations strategy	39	Location, layout and flow	118
<i>Summary answers to key questions</i>	41	<i>Introduction</i>	118
<i>Learning exercises</i>	42	The location of operations	120
<i>Want to know more?</i>	43	What is layout?	123
<i>Useful websites</i>	43	What is layout and what are the types used in operations?	131
Chapter 3		Workplace layout	133
Social, environmental and economic performance	44	<i>Summary answers to key questions</i>	134
<i>Introduction</i>	44	<i>Learning exercises</i>	135
Operations performance is vital for any organization	46	<i>Want to know more?</i>	135
The five operations performance objectives	51	<i>Useful websites</i>	136
		Chapter 7	
		Supply network management	137
		<i>Introduction</i>	137
		The supply network perspective	139

Designing and managing supply networks	141	Enterprise resource planning (ERP)	240
Supply network design	144	<i>Summary answers to key questions</i>	243
Types of relationships in supply networks	148	<i>Learning exercises</i>	244
Supply network dynamics	155	<i>Want to know more?</i>	245
Improving supply networks	157	<i>Useful websites</i>	245
<i>Summary answers to key questions</i>	164		
<i>Learning exercises</i>	165	Chapter 11	
<i>Want to know more?</i>	166	Lean synchronization	246
<i>Useful websites</i>	166	<i>Introduction</i>	246
Chapter 8		What is lean synchronization?	248
Capacity management	167	The elimination of waste	252
<i>Introduction</i>	167	Lean synchronization applied throughout the	
What is capacity management?	169	supply network	262
Measuring demand and capacity	171	<i>Summary answers to key questions</i>	264
The alternative capacity plans	177	<i>Learning exercises</i>	265
Choosing a capacity management approach	185	<i>Want to know more?</i>	265
Capacity planning as a queuing problem	189	<i>Useful websites</i>	266
<i>Summary answers to key questions</i>	193		
<i>Learning exercises</i>	194	Chapter 12	
<i>Want to know more?</i>	195	Quality management	267
<i>Useful websites</i>	195	<i>Introduction</i>	267
Chapter 9		What is quality and why is it so important?	269
Inventory management	196	Diagnosing quality problems	271
<i>Introduction</i>	196	Conformance to specification	273
What is inventory?	198	Total quality management (TQM)	279
Why is inventory necessary?	198	<i>Summary answers to key questions</i>	286
The volume decision – how much to order	201	<i>Learning exercises</i>	287
The timing decision – when to place		<i>Want to know more?</i>	287
an order	212	<i>Useful websites</i>	288
Inventory analysis and control systems	216	Chapter 13	
<i>Summary answers to key questions</i>	220	Operations improvement	289
<i>Learning exercises</i>	222	<i>Introduction</i>	289
<i>Want to know more?</i>	222	Why improvement is so important	291
<i>Useful websites</i>	222	Elements of improvement	291
Chapter 10		Approaches to improvement	297
Planning and control	223	Improvement techniques	304
<i>Introduction</i>	223	<i>Summary answers to key questions</i>	312
What is planning and control?	225	<i>Learning exercises</i>	313
Supply and demand effects on planning		<i>Want to know more?</i>	314
and control	226	<i>Useful websites</i>	314
Planning and control activities	231	Notes on chapters	315
		Index	318

Chapter 1

Operations management

Key questions

- What is operations management?
- Why is operations management important in all types of organization?
- What is the input–transformation–output process?
- What is the process hierarchy?
- How do operations processes have different characteristics?
- What are the activities of operations management?

Introduction

Operations management is about how organizations design, deliver, and improve services and products for their customers. Everything you wear, eat, sit on, use, read or knock about on the sports field comes to you courtesy of the operations managers who organized its creation. Every book you borrow from the library, every treatment you receive at the hospital, every service you expect in the shops and every lecture you attend at university – all have been created. While the people who supervised their creation may not always be called operations managers, that is what they really are. And that is what this book is concerned with – the tasks, issues and decisions of those operations managers who have made the services and products on which we all depend. This is an introductory chapter, so we will examine what we mean by ‘operations management’, how operations processes can be found everywhere, how they are all similar yet different, and what it is that operations managers do.

Operations in practice **IKEA**¹

(All chapters start with an 'Operations in practice' example that illustrates some of the issues that will be covered in the chapter.)

Love it or hate it, IKEA is the most successful furniture retailer ever. With 276 stores in 36 countries, it has managed to develop its own special way of selling furniture. The stores' layout means customers often spend two hours in the store – far longer than in rival furniture retailers. IKEA's philosophy goes back to the original business, started in the 1950s in Sweden by Ingvar Kamprad. He built a showroom on the outskirts of Stockholm where land was cheap and simply displayed suppliers' furniture as it would be in a domestic setting. Increasing sales soon allowed IKEA to start ordering its own self-designed products from local manufacturers. However, it was innovation in its operations that dramatically reduced its selling costs. These included the idea of selling furniture as self-assembly flat packs (which reduced production and transport costs) and its 'showroom-warehouse' concept which required customers to pick the furniture up themselves from the warehouse (which reduced retailing costs). Both of these operating principles are still the basis of IKEA's retail operations process today.

Stores are designed to facilitate the smooth flow of customers, from parking, moving through the store itself, to ordering and picking up products. At the entrance to each store large notice-boards provide advice to shoppers. For young children, there is a supervised children's play area, a small cinema, and a parent and baby room so parents can leave their children in the supervised play area for a time. Parents are recalled via the loudspeaker system if the child has any problems. IKEA 'allow customers to make up their minds in their own time' but 'information points' have staff who can help. All furniture carries a ticket with a code number which indicates its location in the warehouse. (For larger items, customers go to the information desks for assistance.) There is also an area where smaller items are displayed, and can be picked directly. Customers then pass through the warehouse where they pick up the items viewed in the showroom. Finally, customers pay at the checkouts, where a ramped conveyor belt moves purchases up to the checkout staff. The exit area has service points and a loading area that allows customers to bring their cars from the car park and load their purchases.

Behind the public face of IKEA's huge stores is a complex worldwide network of suppliers: 1,300 direct suppliers, about 10,000 sub-suppliers, wholesale and transport operations including 26 Distribution Centres. This supply network is vitally important to IKEA. From



Source: Alamy Images

purchasing raw materials, right through to finished products arriving in its customers' homes, IKEA relies on close partnerships with its suppliers to achieve both ongoing supply efficiency and new product development. However, IKEA closely controls all supply and development activities from IKEA's home town of Älmhult in Sweden.

However, success brings its own problems and some customers became increasingly frustrated with overcrowding and long waiting times. In response IKEA in the UK launched a £150 m programme to 'design out' the bottlenecks. The changes included:

- Clearly marked in-store short cuts allowing customers who just want to visit one area to avoid having to go through all the preceding areas.
- Express checkout tills for customers with a bag only rather than a trolley.
- Extra 'help staff' at key points to help customers.
- Redesign of the car parks, making them easier to navigate.
- Dropping the ban on taking trolleys out to the car parks for loading (originally implemented to stop vehicles being damaged).
- A new warehouse system to stop popular product lines running out during the day.
- More children's play areas.

IKEA spokeswoman Nicki Craddock said: 'We know people love our products but hate our shopping experience. We are being told that by customers every day, so we can't afford not to make changes. We realized a lot of people took offence at being herded like sheep on the long route around stores. Now if you know what you are looking for and just want to get in, grab it and get out, you can.'

Operations management is a vital part of IKEA's success

IKEA shows how important operations management is for its own success and the success of any type of organization. Of course, IKEA understands its market and its customers. Just as important, it knows that the way it manages the network of operations that design, produce and deliver its products and services must be right for its market. No organization can survive in the long term if it cannot supply its customers effectively. This is essentially what operations management is about – designing, producing and delivering products and services that satisfy market requirements. For any business, it is a vitally important activity. Consider just some of the activities that IKEA's operations managers are involved in.

- Arranging the store's layout to give smooth and effective flow of customers (called process design).
- Designing stylish products that can be flat-packed efficiently (called product design).
- Making sure that all staff can contribute to the company's success (called job design).
- Locating stores of an appropriate size in the most effective place (called supply network design).
- Arranging for the delivery of products to stores (called supply chain management).

- Coping with fluctuations in demand (called capacity management).
- Maintaining cleanliness and safety of storage area (called failure prevention).
- Avoiding running out of products for sale (called inventory management).
- Monitoring and enhancing quality of service to customers (called quality management).
- Continually examining and improving operations practice (called operations improvement).

Importantly, these activities are only a small part of IKEA's total operations management effort. But they do give an indication, first of how operations management should contribute to the businesses success, and second, what would happen if IKEA's operations managers failed to be effective in carrying out any of its activities. Badly designed processes, inappropriate products, poor locations, disaffected staff, empty shelves, or forgetting the importance of continually improving quality, could all turn a previously successful organization into a failing one. Yet, although the relative importance of these activities will vary between different organizations, operations managers in all organizations will be making the same *type* of decision (even if *what* they actually decide is different).

What is operations management?

Operations management Operations function

Operations managers

Operations management is the activity of managing the resources which create and deliver services and products. The **operations function** is the part of the organization that is responsible for this activity. Every organization has an operations function because every organization produces some type of services and/or products. However, not all types of organization will necessarily call the operations function by this name. (Note that we also use the shorter terms 'the operation' and 'operations' interchangeably with the 'operations function'.) **Operations managers** are the people who have particular responsibility for managing some, or all, of the resources which comprise the operations function. Again, in some organizations the operations manager could be called by some other name. For example, he or she might be called the 'fleet manager' in a distribution company, the 'administrative manager' in a hospital or the 'store manager' in a supermarket.

Operations in the organization

Three core functions

The operations function is central to the organization because it creates the services and products which are its reason for existing, but it is not the only function. It is, however, one of the **three core functions** of any organization. These are:

- the marketing (including sales) function – which is responsible for *communicating* the organization's services and products (or more generically, offerings) to its markets in order to generate customer requests for service;

- the service/product development function – which is responsible for developing new and modified offerings in order to generate future customer requests for service;
- the operations function – which is responsible for *fulfilling* customer requests for service through the creation and delivery of services and products.

Support functions

In addition, there are the **support functions** which enable the core functions to operate effectively. These include, for example:

- the accounting and finance function – which provides the information to help economic decision-making and manages the financial resources of the organization;
- the human resources function – which recruits and develops the organization's staff as well as looking after their welfare.

Remember that different organizations will call their various functions by different names and will have a different set of support functions. Almost all organizations, however, will have the three core functions, because all organizations have a fundamental need to sell their services, satisfy their customers and create the means to satisfy customers in the future. Table 1.1 shows the activities of the three core functions for a sample of organizations.

Broad definition of operations

In practice, there is not always a clear division between the three core functions or between core and support functions. This leads to some confusion over where the boundaries of the operations function should be drawn. In this book we use a relatively **broad definition of operations**. We treat much of the product/service development, technical and information systems activities and some of the human resource, marketing and accounting and finance activities as coming within the sphere of operations management. We view the operations function as comprising all the activities necessary for the day-to-day fulfilment of customer requests. This includes sourcing services and products from suppliers and transporting them to customers.

Working effectively with the other parts of the organization is one of the most important responsibilities of operations management. It is a fundamental of modern management that functional boundaries should not hinder efficient internal processes. Figure 1.1 illustrates some of the relationships between operations and some other functions in terms of the flow of information between them. Although it is not comprehensive, it gives an idea of the nature of each relationship.

Table 1.1 The activities of core functions in some organizations

<i>Core functional activities</i>	<i>Internet service provider (ISP)</i>	<i>Fast food chain</i>	<i>International aid charity</i>	<i>Furniture manufacturer</i>
Marketing and sales	Promote services to users and get registrations Sell advertising space	Advertise on TV Devise promotional materials	Develop funding contracts Mail out appeals for donations	Advertise in magazines Determine pricing policy Sell to stores
Product/service development	Devise new services and commission new information content	Design hamburgers, pizzas, etc. Design décor for restaurants	Develop new appeals campaigns Design new assistance programmes	Design new furniture Coordinate with fashionable colours
Operations	Maintain hardware, software and content Implement new links and services	Make burgers, pizzas etc. Serve customers Clear away Maintain equipment	Give service to the beneficiaries of the charity	Make components Assemble furniture

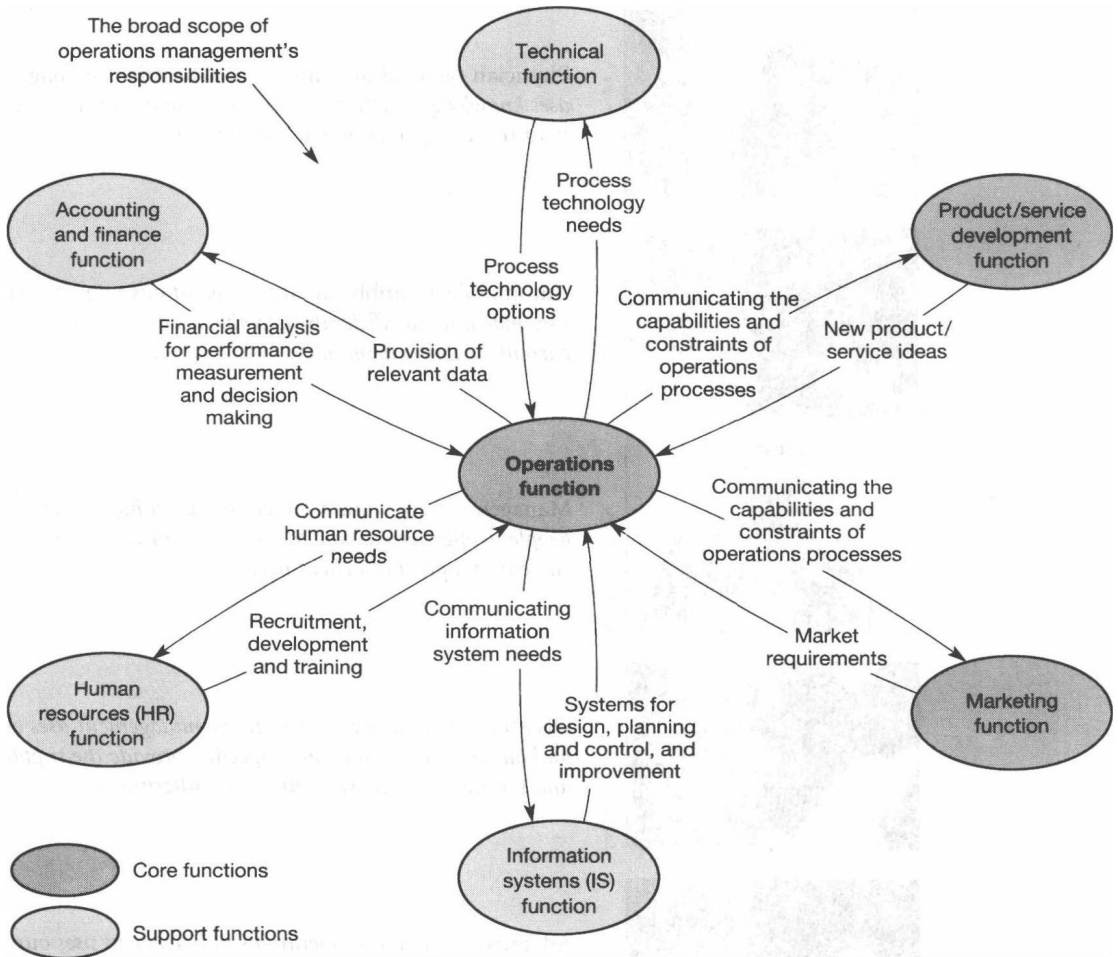
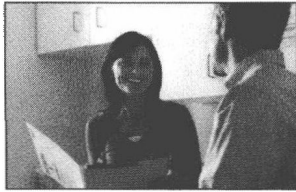


Figure 1.1 The relationship between the operations function and other core and support functions of the organization

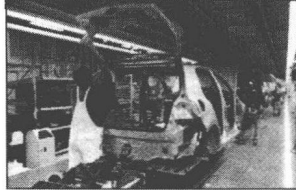
Operations management is important in all types of organization

In some types of organization it is relatively easy to visualize the operations function and what it does, even if we have never seen it. For example, most people have seen images of automobile assembly. But what about an advertising agency? We know vaguely what they do – they produce the advertisements that we see in magazines and on television – but what is their operations function? The clue lies in the word ‘produce’. Any business that produces something must use resources to do so, and so must have an operations activity. So, the advertising agency and the automobile plant have one important element in common: both have a higher objective – to make a profit from creating and delivering their services or products. Yet not-for-profit organizations also use their resources to produce services, not to make a profit, but to serve society in some way. Look at the following examples of what operations management does in five very different organizations and some common themes emerge.



Source: Getty Images

Physician (general practitioner) – *Operations management uses knowledge to effectively diagnose conditions in order to treat real and perceived patient concerns*



Source: Rex Features

Automobile assembly factory – *Operations management uses machines to efficiently assemble products that satisfy current customer demands*



Source: Alamy Images

Management consultant – *Operations management uses people to effectively create the services that will address current and potential client needs*



Source: Corbis

Disaster relief charity – *Operations management uses our and our partners' resources to speedily provide the supplies and services that relieve community suffering*



Source: Alamy Images

Advertising agency – *Operations management uses our staff's knowledge and experience to creatively present ideas that delight clients and address their real needs*

Whatever terminology is used there is a common theme and a common purpose to how we can visualize the operations activity in any type of organization: small or large, manufacturing or service, public or private, profit or not-for-profit. Operations management uses *resources to appropriately create outputs that fulfil defined market requirements*. See Figure 1.2. However, although the essential nature and purpose of operations management is the same in every type of organization, there are some special issues to consider, particularly in smaller organizations and those whose purpose is to maximize something other than profit.

Operations management in the smaller organization

Irrespective of their size, all companies need to produce and deliver their products and services efficiently and effectively. However, managing operations in a small or medium-size organization has its own set of problems. Large companies may have the resources to dedicate individuals to specialized tasks, but smaller companies often cannot, so people may have to do different jobs as the need arises. Such an informality may allow a quick response as opportunities present themselves. But decision-making can also become confused as individuals' roles can overlap in small operations. However, small operations can also have significant advantages; the short case on Acme Whistles illustrates this.

The role of operations management in smaller organizations often overlaps significantly with other functions