SERVICE OPERATIONS MANAGEMENT

FIFTH EDITION

ROBERT JOHNSTON, MICHAEL SHULVER,
NIGEL SLACK AND GRAHAM CLARK

Pearson

Service Operations Management

Pearson

At Pearson, we have a simple mission: to help people make more of their lives through learning.

We combine innovative learning technology with trusted content and educational expertise to provide engaging and effective learning experiences that serve people wherever and whenever they are learning.

From classroom to boardroom, our curriculum materials, digital learning tools and testing programmes help to educate millions of people worldwide – more than any other private enterprise.

Every day our work helps learning flourish, and wherever learning flourishes, so do people.

To learn more, please visit us at **www.pearson.com/uk**

Service Operations Management

Fifth edition

Robert Johnston
Michael Shulver
Nigel Slack
Graham Clark

Pearson

Harlow, England • London • New York • Boston • San Francisco • Toronto • Sydney • Dubai • Singapore • Hong Kong
Tokyo • Seoul • Taipei • New Delhi • Cape Town • São Paulo • Mexico City • Madrid • Amsterdam • Munich • Paris • Milan

PEARSON EDUCATION LIMITED
KAO Two
KAO Park
Harlow
CM17 9SR
United Kingdom
Tel: +44 (0)1279 623623
Web: www.pearson.com/uk

First edition published 2001 (print)
Fourth edition published 2012 (print and electronic)
Fifth edition published 2021 (print and electronic)

ISBN: 978-1-292-06446-8 (print)
978-1-292-09802-9 (PDF)
978-1-292-09805-0 (ePub)

British Library Cataloguing-in-Publication Data
A catalogue record for the print edition is available from the British Library

Library of Congress Cataloging-in-Publication Data
A catalog record for the print edition is available from the Library of Congress

10 9 8 7 6 5 4 3 2 1
25 24 23 22 21

Front cover image: Rawpixel/iStock/Getty Images Plus/Getty Images
Print edition typeset in 10/12 Sabon MT Pro by SPi Global
Printed and bound by L.E.G.O. S.p.A., Italy

NOTE THAT ANY PAGE CROSS REFERENCES REFER TO THE PRINT EDITION

Brief contents

Part IV
Improving service operations 461

Supporting resources for lecturers

Please visit **www.servops.net** to find valuable online resources. These include:

- A downloadable Instructor's Manual
- PowerPoint and Keynote slides that can be downloaded and used for classroom presentations
- Instructional video screencasts by the author team showing you how we approach the subjects in our own teaching
- Lesson plans
- Opportunities to network, share ideas and provide feedback
- ...and much, much more.

Contents

Preface

Introduction

This text is about how to manage and improve the operations in service organisations. The service sector is the largest part of most economies, and is growing. Furthermore, service is an idea that is not confined to the service sector; it has important implications for all types of organisations. And of all aspects of service, its operations activities are especially important. They are the parts of the organisation that create and deliver service to customers. The service could be that delivered to customers inside an organisation, such as staff in other functions, or the service provided by public sector organisations, voluntary organisations, mass transport services, professional services, business-to-business services, retailers, internet services, tourism and hospitality. In this text we do not focus on any particular type of service, but seek to cover the many decisions faced by operations managers in all these organisations. To illustrate this diversity, we have provided examples from many different types of service organisations and from many parts of the world.

Service operations management is *important*. Operations managers are, more often than not, the people who are responsible for most of the costs in an organisation and most of the revenues. After all, they manage most of the people and physical assets. Operations managers deliver the 'profit' (monetary or 'social'). In this text, we refer to many aspects of 'business performance', not simply profit. Although many organisations are motivated by profit, most operations should also be assessed on broader criteria such as long-term costs, revenues, risk, adherence to budgets, customer loyalty and technological leadership.

Service operations management is also very *challenging*. We have captured many of the challenges that operations managers face every day, and the text is structured around how to deal with those challenges. Managing operations is also *exciting* because it crosses many conventional disciplines. Service operations often have to deal directly with customers, often in real time, so part of the excitement comes from the immediacy of operations; dealing with the needs of a stream of customers, managing the staff and making operational decisions to ensure the delivery of an appropriate quality of service at an appropriate cost.

The aim of this text

The aim of this text is to provide a clear, authoritative, well-structured, easy-to-read and interesting treatment of service operations management. But conventional management disciplines and functional boundaries are, to some extent, artificial. This is why the reader will find ideas and theories that come from marketing, strategy and human resource management, as well as conventional operations management. Our objective in writing this text is to help students and managers understand how service performance can be improved by studying service delivery and associated management issues. Service delivery is the focus of this text, yet we recognise that success depends not only on the obvious territory of operations in managing processes and resources, but also in understanding how operations managers must be involved in aspects of the organisation's strategy, the service concept, organisational culture, and the way employees and customers are motivated and managed.

How well a service is delivered reflects the ability of the organisation to pull all these strands together, providing a service that meets the demands of its various stakeholders and providing appropriate and achievable service to customers while meeting required financial targets.

The Covid-19 pandemic

This publication was written before the COVID-19 pandemic had its impact on the world and, significantly for this text, on the nature of many service operations. As we go to press, it is not possible to forecast with any degree of confidence how much the pandemic will have affected service operations. That there will be some impact is certain. Exactly what the impact will be, or how much it will affect the day-to-day lives of service operations managers, is less certain. By the time you read this, many service operations practices may have changed. Some ideas that, at the time of writing, were assumed to be fundamental, may have to be adapted. Some types of operation may even no longer exist in their old form. So, if there are the occasional 'gaps' between what we have written and current reality, please forgive us. However, be assured that the underlying philosophy of how service operations should be managed, and the central importance of the service sector, will not have altered.

Who should read this text?

This is intended as a text for those who want to build on knowledge of the basic principles of operations management. It will also serve as a handbook for operations managers in service organisations as they seek to develop and implement operations strategies. Specifically, it is intended for:

- *Undergraduates* on business studies or joint studies degrees, or those specialising in hospitality, tourism or the public sector, for example, who wish to enhance their understanding of service operations management.
- *MBA students* who are managing service organisations and want to stretch their understanding of the area, and assess and improve their operations.
- *Executives* who want to focus on certain aspects of service delivery, such as customer experience, process design, capacity management, improvement, creating high-performance teams, performance measurement, world-class service or service strategy development, in order to challenge and change their own organisations.

Distinctive features

- *Operations focused*. This text has a clear operations focus and is concerned with managing operations. It explores operations-based issues, problems and decisions. It exposes students to the problems faced by service operations managers and helps practising managers deal with those issues. Each of the main chapters addresses how to deal with a particular problem or challenge.
- *Frameworks and tools*. Each chapter provides tools, frameworks and techniques that will help students and managers not only analyse existing operations but also understand better how they can deal with the issues that operations managers face. The frameworks, approaches and techniques will vary from topic to topic and will include, for example:
  - a list of key points to bear in mind when making decisions in a particular area;
  - a diagram or chart showing the relationship between two variables, or sets of variables, to help position an operation or help identify the nature of the relationships;
  - a list of questions, checks or tests that can be applied to a situation;
  - ways of quantifying or assessing qualitative variables;
  - the key stages in undertaking a particular activity.

- *Real-world illustrations*. Operations management is an applied subject, so each chapter includes a number of short illustrations – case examples – from around the world that show how organisations have either identified or dealt with the particular issues being discussed.
- *International*. The real-world illustrations – examples in the text, case examples and case exercises – are drawn from many countries to show the diversity and international nature of operations issues and activities. (We have included a list of the case examples later.)
- *Underpinned by theory*. Appropriate theoretical underpinning and developments are included and we have tried to explain them in an unobtrusive and accessible way. References, web links and suggestions for further reading are provided for anyone wishing to undertake more work in a particular area.
- *Managing people*. A key task for operations managers is managing people, and so this text contains a significant 'managing people' element. This includes not only employees but also customers, as well as managing and changing the culture of the organisation as a whole.
- *Technology-based service*. Rarely have technologies had such an impact on services, so information and communications-based technology services are integrated into the text and their operations implications explored.
- *State of the art*. The text contains some of the most recent ideas and information, covering in particular world-class service, performance management, service concept, the customer experience and service processes.
- *Summaries*. Each chapter concludes with a checklist summarising the key points, structured using the main chapter sub-headings.
- *Discussion questions and exercises*. At the end of each chapter there are some questions aimed both at students and at practising managers. We hope that these questions will encourage readers both to test their understanding and to apply the material in the chapter.
- *Further reading*. The topic keeps developing, so we have also provided some suggestions for further reading that should both develop the basics of the topic further and extend its scope.
- *Case exercises*. Each chapter concludes with a case exercise suitable for class discussion. The cases are short but focused on the topic and are a rich source of material for debate and development.
- *Instructor's manual*. An instructor's manual is available to lecturers adopting this text. It can be downloaded from **www.servops.net** and provides detailed questions to go with the cases and bullet-point answers to the questions.
- *Servops.net* is the instructor's companion website for our text. Besides the instructor's manual it provides a range of presentations in PowerPoint and Keynote formats to suit a range of teaching styles, experience and time constraints. The site also makes available a series of video screencasts in which the authors explain their approach to teaching each topic. **Servops.net** also gives instructors a series of lesson plans and handout designs.

Feedback and ideas

We would welcome feedback and suggestions to help us develop our text. In particular, we would like to know how you use the text, and if you have any suggestions for web links, readings or case examples. Please do not hesitate to contact either Michael Shulver at **michael.shulver@me.com**, or Nigel Slack at **nigel.slack@wbs.ac.uk**

New features for this edition

Since the previous edition of this text, sadly our dear friend and colleague, Bob Johnston, has died. His inspiration and support are missed by all who worked with him. But his enthusiasm and love for service operations management is, hopefully, reflected in this new edition. We have incorporated some new topics and updated the content in several ways, many of which Bob was actively working on.

To help us with this task we welcome Professor Nigel Slack to the author team for this fifth edition of the text. Nigel worked with Bob for many years and brings a wealth of experience in authoring his market-leading texts in operations management and operations strategy.

The previous edition of this text was published in 2012 and the subjects of service operations management and service management have advanced in that time. As a result, we have made quite a few changes to this edition. In particular, we have changed the chapter order to reflect a more up-to-date and logical structure – our apologies in advance to those classes who are still using the fourth edition. This has allowed us to expand our coverage, especially of the topics that have become more prominent since the previous edition. There are more things we want to do in future editions and we always appreciate and welcome the feedback we have had, which has led to many of the changes we have made. In summary, the changes have included:

- A new chapter structure based around four groupings of topics – framing service operations, understanding customers, delivering service and improving service operations. Following on from which:
- A new, more helpful structure diagram.
- More emphasis on how the topic being discussed is applied specifically in service organisations.
- Coverage of the growth in the service sector generally, and the various types of service organisation.
- A new chapter on service innovation.
- Although a few of the more relevant case examples from the previous edition are retained, most case examples are new, while others have been updated.
- We have added 'worked examples' in most chapters to help understand how the concepts can be applied.
- The addition of 'counterpoint' features in most chapters that provide comments or criticisms of conventional theory and/or practice.
- Fourteen new end-of-chapter case exercises (the old ones from the previous edition can be accessed at **servops.net**).
- A new look and format.

Case examples and exercises

Chapter	Topic	Feature	Organisation	Location	Page number
Chapter 1	Introduction to service operations	Case example	Sara Davies is the Team Manager at Scarlets Rugby Club – a service operations manager	Wales	12
		Case example	English National Opera	UK	20
		Case example	Two award-winning airlines with different strategies	International	26
		Worked example	Long Ridge Gliding Club	UK	28
		Case exercise	European Airlines Group	Europe	32
Chapter 2	The world of service	Case example	The problems of managing service in charities – Oxfam International	International	43
		Case example	Apple's move towards services	USA	49
		Case example	The Apple Store experience	International	52
		Worked example	ZPZ Systems' focus on customer experience	International	53
		Case example	Michelin – from selling tyres to providing tyre management services	International	55
		Case exercise	Servitisation at Sterksteen	Netherlands	58
Chapter 3	Service strategy	Worked example	Buxtain Security Services	UK	67
		Case example	IKEA and its 'big box' retail strategy	International	69
		Case example	Is Ocado really a technology service?	UK	71
		Case example	Service strategy at Singapore Airlines	Singapore	76
		Case example	Many different strategies for cruise companies	International	79
		Worked example	Amfring Transport	UK	87
		Case exercise	Corks Nightclub – an overnight success?	UK	91
Chapter 4	The service concept	Case example	The implicit service concept at Ramblers Walking Holidays – 'professional, passionate and knowledgeable'	UK	99
		Case example	Designing a new hairdressing concept in Japan	Japan	110
		Case example	The Lapworth Museum of Geology, Birmingham, UK	UK	111
		Worked example	TECLAN Translation Agency	UK	113
		Case exercise	Trialing new concepts at Capes & Latimer	UK	116

Chapter	Topic	Feature	Organisation	Location	Page number
Chapter 5	Customer relationships	Case example	The Prison Service	General	135
		Case example	Harley Owners Group (H.O.G.)	International	142
		Worked example	Site Steward Archaeological Tours	UK	147
		Case example	IKEA's customer training	International	148
		Case example	Revenge of the taxi driver	International	150
		Case exercise	P-Mecxx Cyber Services (P-Mecxx)	Europe	158
Chapter 6	Service quality	Worked example	Europa Conference Centres (ECC)	Europe	165
		Case example	Guestology at Optiker Söderberg	Sweden	166
		Case example	uSwitch	UK	171
		Case example	Le Berceau des Sens	Switzerland	171
		Case example	Banged up	UK	173
		Case example	Campwagen Conversions	UK	188
		Case exercise	The Northern Breast Screening Unit	UK	194
Chapter 7	Designing customer experience	Worked example	North Healey Building Society	UK	201
		Case example	More than a cosmetic difference	UK	202
		Case example	Is there an appropriate servicescape for prisons?	Europe	206
		Case example	The acute patient's journey	UK	208
		Case example	Left or right? The dynamics of crowd movement	International	220
		Case example	Would you bet your life on technology?	International	223
		Case exercise	Elena's customer experience	UK	226
Chapter 8	People in the service operation	Case example	It's not part of the job – Co-op's 'Safer Colleagues, Safer Communities' campaign	UK	235
		Case example	Caring for your players	Wales	242
		Worked example	Astell Mortgage Society (AMC)	UK	244
		Case example	Teamwork at Alain Ducasse's restaurant at the Plaza Athénée	France	245
		Case example	The many roles of a tour leader	International	247
		Case example	You're on camera, smile!	International	260
		Case exercise	Superstore plc	UK	264

Authors' acknowledgements

Many people have helped us in the writing of this text. Academic colleagues from around the world have provided stimulation, encouragement and/or contributions, including important ideas and material, useful feedback, illustrations and case examples. We would like to express our gratitude to all of them. Similarly, many practising managers from around the world have also been kind enough to provide some rich material about their activities and organisations; our grateful thanks to them.

We are particularly grateful to the reviewers over the various editions, whose considerable efforts and expertise provided us with comments, ideas and suggestions, all of which have had a significant influence on the text.

Special thanks go to Par Ahlstrom, Stockholm School of Economics; Ahmad Bhatti, University of Birmingham; Inès Blal, Ecole hôtelière de Lausanne; Thomas Christiansen, Technical University of Denmark; Moira Clark, Director of the Henley Centre for Customer Management; Sara Davies of Scarlets Rugby; Steven Disney, University of Exeter; John Flanagan, University of Wollongong; Andrew Greasley, Aston University; Tony Harpur at RWH; Lesley Kimber, Southampton Business School; Xiangu Kong, University of Birmingham; Gavin Lawrie, 2GC Active Management; Mark Leddy, Briary Hay Consulting; Pietro Micheli, University of Warwick; Andrew Parker, University of Birmingham; Geoffrey Plumb, Staffordshire University; Simon Pridgeon, The Curve Group; Graham K. Rand, University of Lancaster; Frank Rowbotham, University of Birmingham; Rhian Silvestro, Warwick Business School; Adam Simmons, University of Birmingham; Martin Spring, University of Lancaster; Remko Van Hoek, Erasmus and Cranfield Universities; Jan de Vries, the University of Groningen; Paul Walley of The Open University; Kim Yeandle-Hignell, University of Birmingham; and Mark Ziles.

Very particular thanks go to Dan Chicksand of Birmingham University, who was particularly influential and contributed wise words and wise ideas in the planning phase of this edition.

We have also greatly benefited from the guidance, encouragement and support of Rufus Curnow, Catherine Yates, Caro Drummond, Anita Atkinson and all the highly polished and professional team at Pearson.

Finally, we would like to thank our partners, Helen, Angela and Dawn, for not minding (too much) as we dedicated a significant amount of our time to this project. They have been our major source of encouragement; without their support, and also their direct involvement in the text, we would never have completed this task. Also, many thanks to our good friend Shirley Johnston, for her permission and encouragement to build on Bob's work.

Michael Shulver, Nigel Slack and Graham Clark

About the authors

The late **Robert (Bob) Johnston** was Professor of Operations Management at Warwick Business School. He had a management degree from the University of Aston and a Ph.D. from the University of Warwick. Before moving to academia, Bob held several line management and senior management posts in a number of service organisations in both the public and private sectors. He maintained close and active links with many large and small organisations through his research, management training and consultancy activities. Bob taught both undergraduate and postgraduate courses and had global experience in executive education with leading companies. His research interests included service transformation, service excellence and leadership, service recovery, complaint management, performance management, service design and service strategy. He published over 150 papers, books and chapters, and wrote over 100 case studies. Bob served as Deputy Dean of the Business School, the Academic Director of the Warwick MBA and Head of the Operations Management Group. He also served on the editorial boards of ten leading journals. He was a member of several international advisory boards, an Honorary Fellow of the European Operations Management Association and a Vice President of the Institute of Customer Service.

Michael Shulver is a Senior Lecturer in the Information, Decision and Operations Division at Bath School of Management, where he is the Director of Online Teaching. Michael has an astrophysics degree from the University of London, and MBA and Ph.D. degrees from the University of Warwick. Before his time in academia, Michael was an aircraft engineer. Michael has also worked as a consultant in performance management. In this role, Michael worked with the UN, Syngenta and BP. Michael's teaching portfolio includes operations management, service management, performance management and service sector innovation/design management. Michael has delivered lectures and workshops in these fields at Executive, MBA and Undergraduate levels at Warwick Business School and Birmingham Business School and has taught as a visiting lecturer for Stockholm School of Economics, Vlerick Gent Management School, The Danish Technology University, Templeton College, Oxford and the UBS Business University. Michael set up and ran the world's first accredited wholly online MBA Programme at University of Birmingham and continues his interest in online learning at Bath School of Management.

Nigel Slack is Emeritus Professor of Operations Management and Strategy at Warwick Business School and an Honorary Professor at Bath University. Previously he was the Royal Academy of Engineering Professor of Service and Support Management at Cambridge University, Professor of Operations Strategy at Brunel University in London and a lecturer in Management Studies at Oxford University. He worked initially as an industrial apprentice in the hand-tool industry and then as a production engineer, production manager, distribution manager and as an operations director in the engineering and consumer durable industries. He is a consultant, researcher and teacher with wide experience in many sectors, including financial services, oil and gas, utilities, retail, professional services, general services, aerospace, FMCG and engineering manufacturing. He is the author and co-author of many publications in the operations management area, including: *The Manufacturing Advantage*; *Making Management Decisions*; *Service Superiority*; *Cases in Operations Management*; *Operations Strategy* (with Michael Lewis); and *Operations and Process*

Management: Principles and Practice for Strategic Impact. His best-known publication is the market-leading text, *Operations Management* (with Alistair Brandon-Jones), now in its ninth edition (2019), published by Pearson – a book that has been translated into several languages. His latest works include *Essentials of Operations Management*, again published by Pearson, *The New CFO* and *The Operations Advantage*, the latter both published by Kogan Page. He is a Chartered Engineer and an Honorary Fellow of the European Operations Management Association.

Graham Clark is a Visiting Fellow at Cranfield School of Management, having been a member of the Operations Management Faculty for nearly 30 years. He served as Director of Cranfield's MBA programme for over 12 years. He has a degree in Mechanical Engineering from Leeds University and a Masters degree in Operations Research and Management from Imperial College London. Prior to moving to Cranfield University in 1986, Graham managed manufacturing and customer support operations in the aerospace and power engineering sectors. He was the co-author of *Customer Service and Support* (with Colin Armistead) and *Inspired Customer Service* (with David Clutterbuck and Colin Armistead), before collaborating with Bob Johnston on editions 1 to 4 of *Service Operations Management*. Graham's passion lies in service leadership and consulting with organisations to help them create and implement effective service strategies. He served as a non-executive director of the UK's Institute of Customer Service during a time of significant change in strategy. Graham's principal focus lies in delivering operations strategy and leadership development programmes for Cranfield's clients, most recently across Europe and the Middle East. He also works with Samaritans, as a volunteer, as director of the local branch, and also providing training and development across the charity's network.

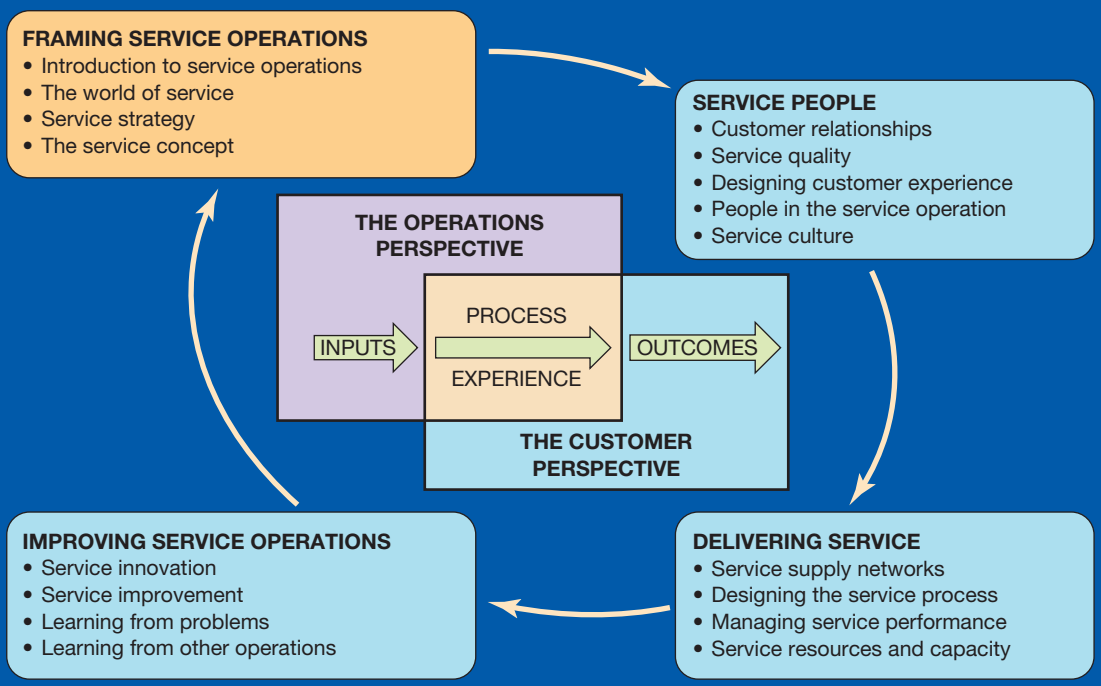
Part I

Framing service operations

The aim of Part I is to introduce some of the fundamentals of service operations that will form the foundation of later topics.

This part consists of four chapters:

Part I Contents



Chapter 1
Introduction to service operations

This introductory chapter starts by exploring what is meant by service, as distinct from the manufacturing of physical goods, and then looks at the general contribution of operations management before exploring what is distinctive about operations management in service organisations, what its responsibilities are and why it is so important.

Learning objectives

- To define the characteristics of services and understand the implications and limitations of these characteristics
- To be able to explain what service operations management is
- To understand the importance of service operations management
- To be able to understand the multiple perspectives on service operations management
- To gain an appreciation of the challenges faced by service operations managers

Introduction

We all use service operations. Almost certainly we use them every day, and almost certainly they are important in our lives. Service operations treat us when we are ill, transport us to wherever we need to go, serve us meals, sell us goods, connect us to social media, entertain us and (hopefully) educate us. Service operations are everywhere, and we are their customers. Many of us are also responsible for serving others, not only as part of our jobs, but also as part of daily life for our friends and families; providing cooking and cleaning services, 'taxi' services, organising holidays and providing emotional support services when needed. But if service is both widespread and important, why aren't the services that we consume, as customers, better? Why do we wait too long to be seen at a doctor's surgery? Why are we asked for the same information twice (or more) by the same organisation? Why does the parcel not arrive when it should?

As customers, we all have stories of those times when we have been let down by services and, hopefully, we also have stories of those times when services have delighted us. The difference between good and bad service is how well the services have designed, organised and run their service delivery operations. When service is poor, it is often because those responsible for creating and delivering service have not used their organisational resources effectively. In other words, it is a failure to deploy the principles of service operations management. That is what this text is about – the nature, character and challenges of managing service operations. The principles of service operations management that we describe in this text apply to all types of service organisation, indeed any organisation that uses resources in order to provide some form of service. We give detailed coverage of the main issues and challenges for service operations, and provide the tools and frameworks that managers can use to understand, assess and improve the performance of their operations. While the development of operations management as a discipline has its roots in production management,[1] this text concentrates on those operations issues that are particularly relevant to service organisations.

However, every organisation, without exception, is involved in service to some degree, and so a knowledge and understanding of service operations management can make a real difference to their success. Many of the concepts are equally relevant to manufacturing organisations because all manufacturing companies provide services, such as after-sales service and customer training, and internal services such as HR or IT support. Furthermore, manufacturing organisations are increasingly under pressure to differentiate by enhancing the service aspects of their offering and to increase service revenues. The later sections and chapters of the text deal specifically with these challenges, but first we will introduce several key concepts, starting with what we mean by 'service'.

1.1 What is 'service'?

It may seem like an easy question, but answering 'what is service?' has proven to be remarkably difficult. One might reasonably reply, 'as opposed to what?'. Most early definitions of 'service' took the question to mean, 'what is a service, as opposed to a manufactured product?'. From the early 1980s, the main distinction between services and products (now disputed) was that services are characterised by the following:

- **I**ntangibility, in that they are not physical items.
- **H**eterogeneity, in that they are difficult to standardise.
- **I**nseparability, in that their production and consumption are simultaneous.
- **P**erishability, in that they cannot be stored.

These four features of services are known as the 'IHIP' characteristics. They are worth studying, even though they have been the subject of some considerable academic debate.

Intangibility

The most obvious characteristic of a product, as opposed to a service, is that it has physical form – one can physically touch a motor vehicle, a garment or a burger. By contrast, a pure service, such as theatre performance, a consultation with a doctor or financial advice, cannot be touched as such. The resources that carry out these services may be tangible, palpable and material, but not the service they provide. As one authority put it, 'a service is something that can be bought and sold, but which [you] cannot drop on your foot'.[2] Certainly, when compared to physical products, it can be difficult to define the 'boundary' of a service. What a product is, and what it is not, is a relatively clear distinction, whereas the limits of what constitutes a service may need constant maintenance. Which is why service operations are frequently at pains to educate customers as to what they can and cannot expect from their services.

However, there are several problems with the idea that all services are intangible. First, many services have a tangible element as part of what they are offering. A motor vehicle service often involves (physical) replacement parts; meals and drinks are an essential element of an air journey; education services may include the provision of physical supplementary material such as (hopefully) books. Second, if we accept the argument that service is intangible, even if the resources providing the service are not, this does not mean that those physical resources are unimportant to how customers view the service. The life-support equipment in an intensive-care unit of a hospital is vital to the service provided, as is the state of the aircraft to an air journey. Third, and related to the last point, customers are unlikely to distinguish between the intangible and tangible elements of service. In fact, for many services, such as some retail services, the quality of service may be judged mostly on the tangible elements of the service. Finally, it could be argued that services involve some kinds of changes to customers (or their surrogates, such as their parcels sent by courier), and customers are certainly physical.

Heterogeneity

Heterogeneity means that each time a service is delivered, it will be different because the needs and behaviour of customers will, to some extent, vary. Customer behaviour is never totally predictable. No matter how well a service is designed, customers may still request a service beyond the limits of the service provider. Ask the operator of a bank's contact (call) centre, or of a technical helpdesk, or emergency service, and they will report on customers asking for service well beyond their scope. Yet such services are directly exposed to their customers' requests, and they must be dealt with. Moreover, when any service involves an interaction with the service staff of a provider, the exact nature of the contact will inevitably vary each time an interaction takes place. Even with considerable staff training, different staff will probably deal with different customers and their requests in different ways. In fact, neither customer nor service staff behaviour is either totally predictable or controllable, all of which makes achieving standardisation difficult. Yet there are significant cost efficiencies for any operation if it can achieve some degree of standardisation. However, heterogeneity is not exclusively a characteristic of services. Many physical products are valued for their variation. Customised products are valued for their lack of standardisation, as are craft or artistic products, which are idiosyncratic by nature.

Of course, service operations will attempt to reduce the range of possible interactions. They will signpost what a service can and cannot do, they will transfer 'non-standard' customers to a more appropriate service and they will provide guidance for staff, all of which can reduce, but not completely eliminate, variety. Such heterogeneity makes the full standardisation of services particularly difficult. Yet technology can help. For example, many years ago, financial services realised the value of ATMs in standardising service (in an admittedly limited way), after which the use of online (internet) banking allowed some scope for inappropriate requests to be filtered out. It is also worth noting that in some services, heterogeneity is welcomed because it can provide avenues for potential development of the service. For example, a customer request could provide the stimulus for a new variant in an organisation's service offering, or perhaps even the development of a brand-new service.

Inseparability

Inseparability, in this context, means that the production of services and their consumption occurs simultaneously. In other words, the service provider (who 'produces' the service) is often physically present when its consumption by a customer takes place. In education services, a tutor explains concepts while students (attempt to) comprehend them, doctors listen to their patients, diagnose them and recommend treatment with the patient present, consultants provide analysis and guidance directly to their clients, and so forth. This is distinctly different to physical products that can be first produced and then consumed by the customer. The implication is that, unlike physical products, services cannot be consumed assynchronously, which, in turn, means that businesses that want to meet all demand for their services must have sufficient capacity in place to meet that demand *as it occurs*.

Yet, while this inseparability is true of those personal services such as some types of education, healthcare and consultancy, it has never been true for services where it is a customer's possession or resources that are the 'recipient' of the service. So, for example, many widely used business or consumer services, such as transporting freight, laundering clothes or performing routine cleaning, are most commonly performed in the customer's absence.[3] Furthermore, technology has worked to reduce this characteristic in many services. In education, lectures can be recorded and viewed independent of their creation and student queries can be posted online, to be answered at a later time. Healthcare websites can help customers understand their conditions and advise on further diagnosis or treatment. Most organisations now understand the power of FAQs to decouple the production and consumption of information-based elements of service, and so on. For many services, the ubiquity of asynchronous communication tools such as SMS and email mean that previously face-to-face and immediate communication is now separated in time, to the mutual benefit of the server and the customer. (Asynchronous communications can be sent at any time, without regard to whether or not the receiver is ready.)

Perishability

A further consequence of the difficulty of storing service, and the idea of inseparability, is the characteristic of perishability. It means that services, in effect, have a very short 'shelf life'. They may even perish in the very instant of their creation: the jokes in a stand-up comedian's performance perish as they are told. Even if she tells the same joke on the next night, the performance and reaction could be different – it is a different service. Similarly, if a hotel room is not sold for a particular night, it has perished. The same room for sale on the next night is a different service. This means that matching capacity with demand, or managing demand to fit capacity, becomes particularly important to avoid underutilised resources and lost revenue. Often, 'dynamic' pricing is used to manage demand. So, for example, hotels will discount their rates in quiet times, or the comedy venue might offer discounted drinks and reduce entry fees in order to fill up demand in the early part of an evening.

However, again there is criticism of this characteristic. Whether one accepts the idea of perishability partly depends on what one regards as 'stored services', and partly on how one views the consumption of a service. First, let us deal with the issue of whether services can be stored. For example, the hotel's 'room for a night' cannot be stored, but what is a hotel but a 'store' of rooms? All service operations 'store' many of the resources that they use to create their services. The resources do not necessarily 'perish'. Hospitals 'store' medical technology, universities 'store' knowledge and so on. Second, what is meant by the 'consumption' of a service? If 'consuming' the performance of a stand-up comedian is simply experiencing the moment of the performance, then that particular service has indeed perished. However, if one treats the utility of the performance, say, in how it makes one feel, then the utility or value of the performance lasts longer. It might make one feel better for weeks or months. It might even change one's life forever. Medical treatment may be over in hours or minutes, but the effect could sustain for far longer. So, perishability depends on whether it is treated as a time-defined issue, or by judging the continued benefits from a service.

Table 1.1 Summary of the IHIP characteristics of service

IHIP service characteristic	Meaning	Example	Definitional problems with the characteristic
Intangibility	Not having physical or material form	Education services (e.g. universities) enhance students' (intangible) knowledge	Many services include tangible as well as intangible elements The resources that provide the service are important and tangible 'Tangible' customers are transformed by services
Heterogeneity	Every service is different, difficult to standardise	Primary healthcare services should respond to each customer's (patient's) individual requirements and treat/advise accordingly	Heterogeneity is not only a characteristic of services
Inseparability	Production and consumption are simultaneous	When attending a live theatrical performance, the value lies in the 'immediacy' of its presentation	May be true for personal services but has never been true for services where it is a customer's possession or resources that are the 'recipient' of the service
Perishability	Service ceases to have value after a relatively short time	If a passenger train service is half empty for a journey, in effect half of that service has 'perished'; it cannot be used if it has not *been* used	Even if the activity of performing a service cannot be stored, the resources can The value of a service can endure far longer that its consumption

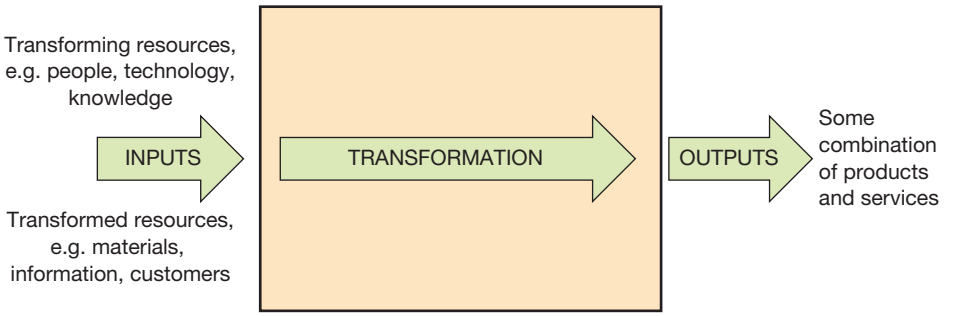
Table 1.1 shows a summary of the IHIP characteristics of service, with an explanation of what each means and some of the definitional criticisms of using each characteristic to define service. From this, and the previous discussion, two points become clear:

- None of the IHIP characteristics is unique to services as opposed to physical products. They are all definitionally questionable to some extent, which explains why a very considerable amount of academic discussion has been generated by them. However, if one is concerned 'broadly' and 'generally' with how services are different to physical products, and the implications of those differences, then the characteristics are a reasonable starting point.
- Technology has had a significant effect – both on the extent to which the IHIP characteristics apply and how the limits that they place on service operations can be overcome. In particular, the development of information and communication technology has opened up many new types of service offerings. And although these technologies may have diluted the applicability of the IHIP characteristics, of far more importance is the potential they give to the development of services. (We deal with service technology in both Chapters 7 and 11.)

1.2 What is service operations management?

The principles of operations management (in any kind of organisation, service or non-service) are broadly the same. Essentially, operations management is concerned with transforming a set of inputs into outputs. This is usually illustrated as an input–transformation–output model, as shown in Figure 1.1. Some of these inputs, such as people (employees), technology and knowledge, are 'transforming resources', and they act on other inputs, such as materials, information

Figure 1.1 The general input–transformation–output model of operations management



and customers, that are 'transformed resources'. The purpose of this transformation process is to produce some combination of products and services. Within the transformation process (which is normally referred to simply as 'the operation'), transforming resources are organised into an interconnected network of processes, through which transformed resources progress.

However, note two important points about an operation's resources. First, they include not just internal resources, but also those that can conveniently be accessed (usually through suppliers). This means that an operation need not necessarily own the resources that it uses. It could have supply agreements that allow it to access resources as and when there is the need. Second, an operation's resources are more than the buildings, technology, equipment and facilities that form the physical fabric of the operation. They even include more than the physical presence of the people that staff the operation. They include all the intangible elements, such as skills and knowledge, together with the intrinsic capabilities, relationships and understandings that have developed, such as those with suppliers and customers. In other words, although the easily quantified resources such as technology, facilities and staff are clearly important, it is the knowledge, skills and capabilities that they embody that can be even more important. This concept of the centrality of service resources, and how they create value, is a fundamental principle in the idea of service dominant logic (SDL), which we will describe in the next chapter. SDL distinguishes between operant resources (skills and knowledge that are usually invisible and intangible) and operand resources (tangible assets). SDL views knowledge and skills as the primary basis of a firm's competitive advantage.

Resources and processes

Resources and processes are the two vital ingredients of all operations, and much of operations management is concerned with how they are managed. Both resources and processes are fundamental to how any enterprise creates value. However, it is the interaction between resources and processes that is key to the effectiveness of any operation. They are not physically separate things; they are simply a way of thinking about what goes on in an operation. More importantly, resources and processes impact on each other. An operation's resources will constrain what its processes are capable of doing. Just as important, the experience gained over time by an operation's processes can add to the capability of its resources. This mutual dependency of resources and processes is a particularly important point that helps us understand how operations improve their capabilities over time. It is also a point that we shall return to when we examine service operations improvement (see Chapter 15).

How any principles, or any models, are applied in practice will depend on the context in which they are applied. A common principle (for example, that the quality of a product/service should be judged by how it affects its intended customers) can be interpreted in very different ways depending on the nature of the customers being served (for example, their expectations, previous experience, etc.).

How is service operations management different from general operations management?

The input–transformation–output model is a broadly applicable generic model that applies to all types of operation, whether service or manufacturing. So, what is it about service operations that is different? Put simply, it is the relative importance of the various inputs to the transformation process. Whereas in the generic model of operations management, the transformed inputs are classed as some combination of materials, information and customers, service operations management is characterised by the importance of the customer (or the customer's surrogate) as the central input to the transformation process. So, service operations, such as entertainment, healthcare, education, passenger transport, banking contact centres and hairdressing, 'transform' their customers directly. Customers have some degree of 'presence' as the service is 'produced'. These services change something about the customers themselves – for example, their state of mind, physical or mental health, knowledge, location, security or appearance. Other service operations still add value for their customers, but do so by working on (transforming) their customers' surrogates. For example, most of the operations effort in banks consists of working on their customers' financial information, mail and parcel delivery services move customers' letters and packages and garages repair their customers' vehicles. Because the work on customers' surrogates does not make them any less of a service, their customers will still judge the performance of their operations in much the same way as in more direct services. Nevertheless, the degree of 'visibility' of the service that customers have is an important factor in how a service is managed, and we shall be returning to the issue.

If it is the importance of the customer's presence in the operation that makes service operations management distinctive, it follows then that 'service' will mean different things depending on the type of customer being served and the nature of the service that is being provided. The service provided by a local restaurant or gym will be quite different to that provided by a large cloud computing service, such as Microsoft, to its business customers. Therefore, it is useful to consider service operations not just from the perspective of the operations resources and processes themselves, but also from the perspective of the customers who receive the service. This means that the generic operations management input–transformation–output model needs reconfiguring to reflect both operations and customer perspectives and, just as crucially, the overlap between them. This idea is shown in Figure 1.2. We will deal with each perspective, and then how they overlap.

Figure 1.2 The input–transformation–output model of operations management interpreted to reflect the high customer-contact nature of service operations management