

second edition



GLOBAL LOGISTICS & SUPPLY CHAIN MANAGEMENT

John Mangan, Chandra Lalwani,
Tim Butcher & Roya Javadpour

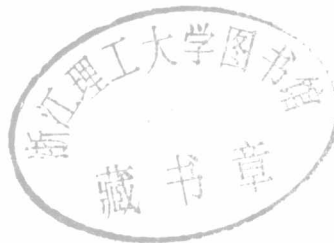
Global Logistics and Supply
Chain Management



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John Mangan,
Chandra Lalwani, Tim Butcher and Roya Javadpour



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About the Authors

John Mangan is Professor of Marine Transport and Logistics at Newcastle University in the UK. Born in Cork, Ireland, he holds a PhD degree from Cardiff University, Masters degrees from both Cranfield and Lancaster Universities, and a BSc degree from University College Cork. He was a Fulbright Scholar at Boston College and also spent a sabbatical teaching at MIT. Initially he worked as an air freight clerk (Aer Lingus) and then as a civil servant (Irish Civil Service – Marine and Finance ministries). He subsequently held academic appointments at University College Dublin, the Irish Management Institute and the University of Hull (where he was founding Director of the University of Hull Logistics Institute). He has conducted a range of consulting assignments for both public and private sector clients and has served as an independent evaluator for the European Commission. He also regularly teaches on graduate and executive education programmes in logistics and related areas. John's teaching and research is primarily focused upon global logistics and supply chain management, maritime transport and logistics management development. He has an extensive raft of publications and is co-editor of the *International Journal of Logistics: Research and Applications*. He has supervised many PhD students and regularly sits on PhD examination committees; in addition he is external examiner at a number of universities. He has participated in a variety of funded research projects, a recent example being the multi-partner 'Low Carbon Shipping: a Systems Approach' research project (www.lowcarbonshipping.co.uk) where he is one of the principal investigators.

Chandra Lalwani is Emeritus Professor of Supply Chain Management at the University of Hull Business School. He is a Visiting Professor at Newcastle University in the UK and at RMIT University in Australia. He holds a BEng in Electrical Engineering, an MEng in Control Systems and another MEng in Systems Engineering. He obtained his PhD from the University of Wales in 1978 based on his research on the dynamic modelling of commodity flow systems. Prior to joining the University of Hull he taught at Cardiff University Business School and was responsible for doctoral research in logistics and operations management. Professor Lalwani was a Deputy Director and Co-investigator at Cardiff Business School on the Cardiff University Innovative Manufacturing Research Centre, and Principal Investigator on one of its three flagship research projects on sustainable logistics. Chandra's teaching and research focus is on supply chain management, retail logistics, logistics and transport modelling, and integration of transport in supply chains. With his research in transport in supply chains, he has worked closely with the retail and distribution industry in the UK. He is also a member of a consortium in the UK researching into low carbon shipping and is co-editor in chief of *International Journal of Logistics Management* published by Emerald.

Tim Butcher is a Senior Lecturer at RMIT University's School of Management in Melbourne, Australia. Besides his research and lecturing responsibilities, he is Deputy Head of School for Industry Engagement. Tim holds a BEng (Hons) (University of Liverpool), an MSc (Cranfield University), and EngD (Cranfield University), and previously worked in production and maintainability engineering in the aerospace sector. His last academic role was as MSc Programme Director at the University of Hull Logistics Institute. He has led various manufacturing, logistics and business improvement projects as a practitioner, a researcher and as a research supervisor. Tim researches the impact of technologies on work and society, with particular reference to logistics and supply chain management. His current research interests include inter-organisational social networks, distributed decision making and local versus global sourcing. Tim currently teaches the History of Management Thought at undergraduate level and Sustainable Practice at Masters level for RMIT, plus Operations Management on the Hull Executive MBA.

Roya Javadpour is Professor of Industrial and Manufacturing Engineering at California Polytechnic State University in San Luis Obispo, California. She holds a BS in Industrial Engineering (Isfahan University of Technology), MS in Industrial Engineering (Louisiana State University), MS in Engineering Science (Louisiana State University), and PhD in Engineering Science with Industrial Engineering emphasis (Louisiana State University). Prior to joining academia Roya worked as a supply chain management consultant at i2 Technologies, Inc. Before her appointment at Cal Poly, Roya taught at the University of San Diego as Visiting Professor of Engineering. Roya's teaching and research is mainly focused on supply chain management and project management. In addition to her teaching and research roles at Cal Poly, she is the founder of the PolyHouse Project, an annual home improvement project for local economically disadvantaged families who have one or more members challenged by a physical disability. She initially pursued this innovative approach to teaching project management skills in 2004 as part of her graduate level Technological Project Management course and was recognised as runner up for the International Innovation in Curriculum Award sponsored by the IIE Council of Industrial Engineering Academic Department Heads in 2008. Her other recent awards include: Northrop Grumman Excellence in Teaching Award, Cal Poly President's Innovation in Service Award and she was named one of the San Luis Obispo Tribune's 'Top 20 Under 40' in recognition of her professional excellence in her field and commitment to the community.

About the Contributors

Peter Baker (Chapter 11 plus the John Lewis case) is a Senior Lecturer at the Centre for Logistics and Supply Chain Management at Cranfield School of Management, lecturing on Warehousing and International Transport. He spent the early part of his career in international freight forwarding. After taking an MSc in Distribution and Technology at Cranfield, he entered supply chain consultancy, where he undertook over 70 supply chain projects across a wide range of industries and public sector organisations in many parts of the world. These projects have included supply chain strategy, procurement, international logistics, distribution centre design, inventory control, transport operations and supporting computer systems. He then joined Cranfield University as a lecturer where he successfully completed a PhD by publication, on the subject of the role, design and operation of distribution centres in agile supply chains. He is a Fellow of the Chartered Institute of Logistics and Transport (UK) and a Fellow of the Higher Education Academy. He has published regularly in quality journals namely: *International Journal of Logistics Management*, *International Journal of Logistics: Research and Applications*, *Supply Chain Management: An International Journal*, *International Journal of Production Economics* and the *European Journal of Operational Research*.

Chuda Basnet (Chapter 10) is an Associate Professor at the University of Waikato, New Zealand. He has received a Bachelor's degree in Mechanical Engineering, a Master's degree in Industrial and Management Engineering, and a PhD in Industrial Engineering and Management. He teaches in the areas of operations management and supply chain management. His research interests are in manufacturing modelling, supply chain management and decision support systems. He has published papers in *Decision Support Systems*, *Journal of the Operational Research Society* and *Annals of Operations Research*.

Paul Childerhouse (Chapter 10) is an Associate Professor at the University of Waikato. He obtained his PhD in 2002 whilst a member of the Logistics Systems Dynamics Group at Cardiff University for his research into supply chain integration and market orientation. His major research interests are in supply chain change management and the development of methods to enable supply chain integration and market orientation. He is practitioner focused and enjoys auditing and advising organisations on how to improve their supply chain practices. This focus has resulted in a great deal of first-hand industrial knowledge especially in the automotive, aerospace, dairy, construction and retail sectors. He has published over 20 articles in quality journals including: *Journal of*

Business Logistics, Journal of Operations Management, International Journal of Physical Distribution and Logistics Management, International Journal of Production Research and OMEGA.

Noel McGlynn (Chapter 14) is employed by Microsoft as a Senior Logistics Manager, and is currently working on a range of performance improvement initiatives within the company's European Operations Centre based in Ireland. He previously has held the role of Business Relationship Manager for Hewlett-Packard in Ireland, where he had specific responsibility for managing third-party logistics providers. He has also worked for Irish Express Cargo/Flextronics Logistics in a range of logistics related roles in Europe, the USA and Asia. He holds a Bachelor's degree in Commerce and a Master's degree in Business Studies, both from the National University of Ireland, Dublin.

Martin Murphy (Chapter 9) is the Managing Director of SCMG (Supply Chain Management Group). He has worked internationally with businesses and organisations over the last 20 years providing strategic advice and tactical support on supply chain projects. This includes oil and gas companies, chemicals and refining, pharmaceuticals, aerospace and defence, manufacturing, automotive, rail and transport through to local and central government, non-departmental public bodies and the higher education sector. He has worked on assignments all over Europe, North America, the Middle East and Far East. He has a degree in Mechanical Engineering and an MBA. Martin is a Member of the Advisory Board to CSIRN (Complex Services Innovation Research Network) at the University of Glasgow, an Industry Advisor to *Strategic Outsourcing*, an international journal, and a Member of the Institute of Directors.

Helen Peck (Chapter 15) is a Senior Lecturer in Commercial & Supply Chain Risk in the Department of Management and Security at Cranfield University. She joined the university in 1983, having previously worked for a major UK clearing bank. Initially employed within the university's library and information service, Helen transferred to the academic staff of Cranfield School of Management in 1988, working in the Marketing & Logistics Group where she completed her PhD as a first degree. Today Helen teaches on graduate programmes and short courses at the DDMSA and guest lectures at a number of other universities in the UK. She has led Cranfield University's government-funded programme of research into all aspects of supply chain related risk and resilience since its inception in May 2001. She is author of numerous academic papers and practitioner journal articles, co-editor and author of several books, and an award-winning writer of management case studies. Her research and consultancy interests span mainstream commercial, defence and other public service contexts. Helen is a regular speaker at academic, business and defence conferences around the world.

Shams Rahman (Chapter 17) is a Professor of Supply Chain Management at the School of Business IT and Logistics, RMIT University, Australia. His academic qualifications include an ME in Industrial Engineering, MSc in Mechanical Engineering and PhD in Operations Research. Shams, a former British Commonwealth scholar, has worked in various universities in Australia, the UK and Thailand. In Australia he worked for the University of Western Australia, University of Sydney, Wollongong University, prior to joining RMIT

University. He also held visiting fellowship at the Virginia Tech, USA and University of Exeter, UK. Shams has extensive consulting experience, organising and delivering workshops and training with and for multinational companies. He is frequently called upon to make presentations for professional bodies and senior executives on issues such as lean approaches, six sigma and quality management, reverse logistics, cold chain and theory of constraints. He is on the editorial board of 10 international journals and has published widely in international academic and trade journals. He is a foundation member of the International Advisory Committee of the Asia-Pacific Federation of Logistics and Supply Chain Systems.

Risto Talas (Chapter 7 and Chapter 1 Appendix) is a Research Fellow at Hull University Logistics Institute. He recently completed his PhD at Cass Business School in the field of maritime port security. Previously he worked for Maritime and Underwater Security Consultants Ltd as a port security consultant which included a secondment to UK Trade & Investment as an International Business Specialist promoting UK companies in the port security sector. Prior to his MBA at Cass Business School he worked as a marine war and terrorism underwriter for a Marine Syndicate at Lloyd's of London. He is also a visiting lecturer at the School of Engineering and Mathematical Sciences at City University lecturing in maritime security studies and at Cass Business School lecturing in supply chain security. He is the author of various book chapters, academic and newspaper articles in maritime security and piracy.

Mike Tayles (Chapter 13) is Emeritus Professor of Accounting and Finance at Hull University Business School. He is also a Visiting Professor in Barcelona, Spain and in Malaysia. He is the European editor of the *Managerial Auditing Journal* and on the editorial boards of other journals. Mike is a Chartered Management Accountant with approximately 10 years' experience in industry and commerce, some of this at a senior level. His first degree is in economics and statistics and his PhD involved a study of contemporary management accounting practices. In the last 10 years he has produced almost 100 publications in academic and professional journals, research monographs, textbook chapters and conference presentations. He has experience of and publications from both survey and case study research. Mike has worked in the food processing, light engineering and textile industries and has consulting and research experience in various manufacturing, service and not-for-profit businesses.

The following authors provided case studies: Dr Peter Baker, Mr Ciarán Brady (PLS Pharma Logistics), Professor Louis Brennan (Trinity College Dublin), Professor Marc Day (Henley Management College), Mr Tom Ferris, Mr Simon Healy (Mediaware), Dr Graham Heaslip (National University of Ireland, Maynooth), Dr Elizabeth Jackson (Newcastle University), Professor Booi Kam and Mr Jin Hao (RMIT University), Professor Roger Moser (European Business School), Ms Anne Nagle (Nagle Business Solutions), Dr Seamus O'Reilly (University College Cork) and Professor Mike Tayles (University of Hull).

Foreword

It is now almost thirty years since the phrase 'supply chain management' first appeared in print. Since then there has been a revolution in the way that organisations view their upstream supply arrangements and their downstream routes to market. The talk now is of 'end-to-end' pipelines and seamless connectivity and we think in terms of highly inter-dependent networks rather than stand-alone business entities. Of course there are still major gaps between the theory and the practice of supply chain management but there can be no doubting that it is now seen as a key priority in most companies today.

One of the major changes in the way in which logistics and supply chain management is viewed is that whilst originally the focus was primarily on cost reduction there is now a recognition that, properly managed, these ideas can deliver enhanced customer value as well as reducing costs. Hence the reason why in many businesses there is a growing emphasis on the strategic implications of supply chain design and the need for stronger relationships with key partners across the supply chain. It is probably no coincidence that those companies who are leaders in their sectors tend to have created supply chains that are closely aligned with their business goals. In particular these organisations see their supply chain as a vehicle for value-delivery and as a powerful tool for gaining competitive advantage in the marketplace.

These changes in both the philosophy and the practice of logistics and supply chain management underpin the content of this present book and have shaped its innovative structure. It is a book with appeal to both practitioners and students, recognising as it does that new skills and capabilities are needed if the full potential of all we have learned in the brief history of supply chain management is to be achieved. Reading this book and leveraging the ideas it presents will provide a strong foundation for business success.

Martin Christopher
Emeritus Professor of Marketing & Logistics,
Cranfield School of Management

Preface

This book traces its origins to the University of Hull Logistics Institute in the UK where three of the four authors (Mangan, Lalwani and Butcher) worked together between 2005 and 2008. It was during this time that we recognised the need for this textbook which we are glad to say has been very well received by students, practitioners and lecturers, and which we are now happy to present as an updated and enhanced second edition. For this second edition we are delighted that Roya Javadvour from California Polytechnic State University has joined us as a co-author. Since producing our first edition Tim Butcher has moved to Royal Melbourne Institute of Technology (RMIT) in Australia, John Mangan has moved to Newcastle University in the UK, and Chandra Lalwani now shares his time between a number of universities around the world including both Hull and Newcastle in the UK. In this second edition we have endeavoured to again produce a comprehensive book with the following key characteristics:

- *Be concise* – logistics is a very pragmatic subject and it has been our intention throughout to ‘stick to the point’. We hope that you the reader will appreciate this. Notwithstanding such intended brevity, we have endeavoured to cover both practical and strategic aspects of the subject matter. The book is neither a ‘how to’ cook book, nor is it a high-level strategy book with little relevance to practice. The aim of the book is to convey to both advanced students and practitioners of logistics and supply chain management the diverse operational and strategic content of the subjects of logistics and supply chain management.
- *Truly global, up-to-date perspective* – the world is changing daily and the typical ‘Western’ worldview no longer necessarily dominates. As we will see in the book, logistics is a key driver of globalisation and a facilitator of international trade and development. We have thus endeavoured to reflect these characteristics by adopting a truly global perspective and hope that the book will appeal to students regardless of what geography they are located in. The context of logistics is constantly shaped by emerging trends and new technologies and we have tried to ensure that the book is as up to date as possible and takes cognisance of these trends and technologies. Sadly, despite much progress, today’s world still contains many divisions, tensions and inequalities. We have attempted to be aware of these while fully embracing a neutral and non-political perspective.
- *Pedagogical approach* – we have endeavoured to use a variety of pedagogies in this book, which we hope will create a fertile learning platform for the

reader. Both long(er) and short(er) case studies are included and are intended to highlight key issues in a focused manner. Key points are detailed in separate boxes and this should also help with revision. Italics are used within the text to emphasise specific issues. Various terms are in bold when first used to indicate that explanations are given in the glossary at the end of the book. We hope you find these various features useful. There are two other features of our pedagogical approach which we believe are especially important.

Firstly, the four authors named on the cover are not the only people to have contributed to this book. We are also very fortunate to have contributions from various experts in specific areas of logistics and supply chain management. They have written chapters and case studies based on their specific areas of expertise and which we believe add to the richness of this book over and above what we could have achieved working on our own. This multidisciplinary approach has allowed us to draw into the book not just logisticians, but also people from backgrounds as diverse as, for example, military and accounting.

The second pedagogical feature we wish to highlight is the mix of qualitative and quantitative content in this book. We are of the view that many logistics books tend to occupy one of two opposite positions, either containing a large share of quantitative material, or else none at all. We believe that a certain level of quantitative aptitude and knowledge is an important feature of most logistics and supply chain managers' jobs (for example, in the areas of logistics costs and inventory management). Many such managers, however, do not routinely engage in sophisticated mathematical analysis; this is usually the domain of operations researchers, engineers and management accountants. We thus aim to convey the necessary quantitative features of logistics and supply chain management, while at the same time not excessively burdening the reader with quantitative analysis.

These various characteristics and perspectives adopted in the book are discussed further in Chapter 1. The book is divided into three parts, again this is discussed, and the content of each part elaborated, in Chapter 1. In this second edition, we have restructured the book and updated relevant content from the first edition. For example the area of relationships in the supply chain is increasingly seen as a topic of importance and we have thus revised and added to the content on this topic which was previously spread across a number of chapters in the first edition; in this second edition this topic is afforded its own chapter (Chapter 3). In addition new chapters have been added dealing with: simulation, security, reverse logistics, and services supply chains. New chapter supplements on containerisation, modelling and transport planning have now been included, and a number of new cases have also been introduced.

BOOK COMPANION WEBSITE

Our text is also supported by additional teaching and learning resources, which are available on the companion website at www.wileyurope.com/college/mangan. They include PowerPoint slides, suggested answers to end-of-chapter questions and case teaching notes for lecturers. Students will also find an online glossary and multiple choice quizzes.

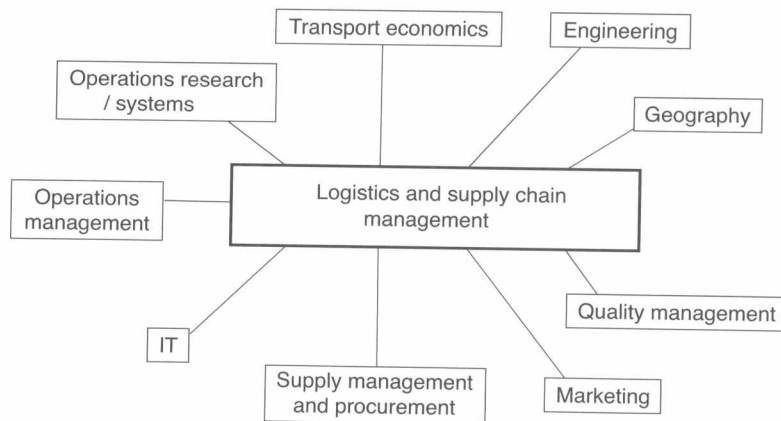


Figure 1 Links to other disciplines

RELATIONSHIP TO OTHER DISCIPLINES, ESPECIALLY OPERATIONS MANAGEMENT

Chapter 1 details the various factors that have led to the evolution of logistics and supply chain management. Figure 1 outlines the various disciplines which we believe logistics and supply chain management are closely linked to. In fact it is only in recent years that third-level courses and explicit career paths have emerged in logistics and supply chain management. It is thus often the case that many practitioners today will have backgrounds in one or other of the disciplines illustrated in Figure 1. Various issues pertaining to some of these disciplines are discussed in this book.

Perhaps the discipline to which logistics and supply chain management is most often closely linked is *operations management*. As we will see in Chapter 1, supply chains involve three interdependent flows: material, information and resources. We discuss these flows in depth throughout the book. The study of operations management is also concerned with these flows. We are in fact of the view that this book could also be effectively used for teaching more general operations management courses, and especially those with a particular emphasis on logistics and supply chain issues. It is becoming increasingly apparent that many operations managers today are engaging more and more in wider supply chain management activities. As processes become increasingly automated and simplified, the focus of many operations managers is shifting to service issues beyond core manufacturing, and to flows and interactions along the supply chain. All of these issues are discussed in this book.

Logistics and supply chain management are ever changing and demanding disciplines, but provide attractive and rewarding opportunities to people who wish to work in these areas. The purpose of this book has been to equip you, the reader, regardless of whether you are a student or a practitioner, with the necessary knowledge and skills to allow you to work more effectively in these areas. We hope you enjoy working with this book and find it of benefit.

John Mangan, Chandra Lalwani, Tim Butcher and Roya Javadpour

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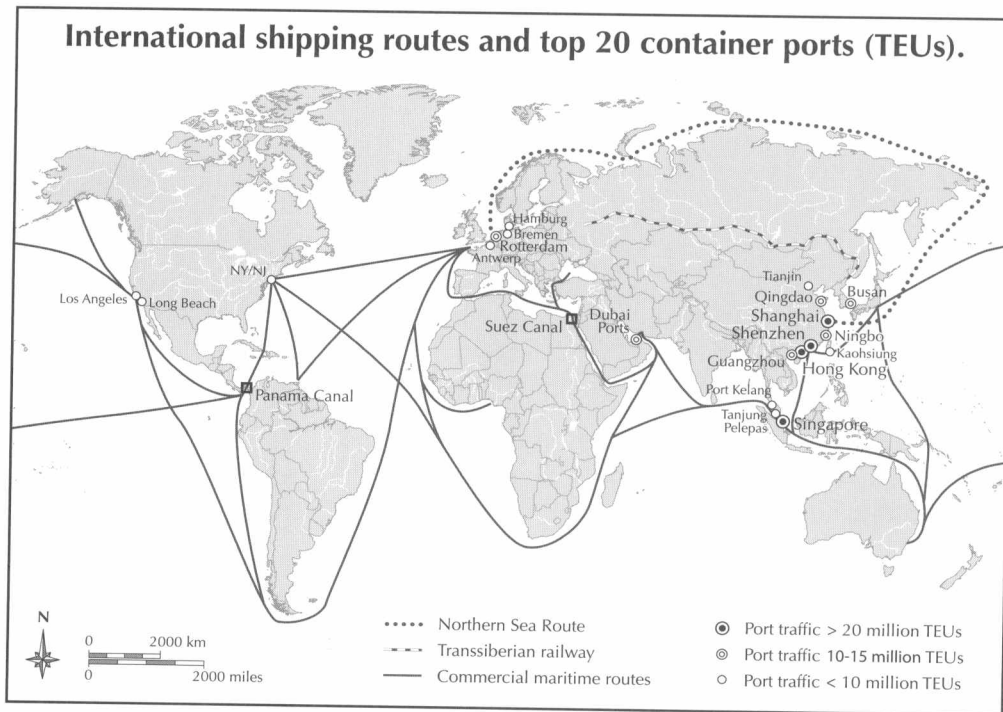
Many people have helped us on our journey to produce the first and now the second editions of this book. First and foremost, the book would not exist but for the continuing support and advice received from many people at John Wiley & Sons Ltd. These include Sarah Booth, Nicole Burnett, Jennifer Edgecombe, Steve Hardman, and Anneli Mockett. We thank them for their professionalism and patience. We would also like to thank the various anonymous reviewers for their helpful comments. Thanks also to the many lecturers and students who used the first edition: we thank them for their feedback which is always beneficial. Thanks too to our universities and our many colleagues who have given us the space and encouragement to complete this time-consuming, yet rewarding, project.

Special thanks are also due to our mentor and friend Professor Martin Christopher of Cranfield University who kindly again provided the foreword.

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Map



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Part One

Logistics and Supply Chain Context