Preface

This manuscript deals with specific problems, in different functional areas, related to the pursuit of organisations in becoming more customer-focused. These problems appear in many corporations migrating from product divisions to a “front-back” organisational model. Basically, this model designs the organisation considering two units called “front end” and a “back end”, as follows:

- The “front end” units deal with units handling sales and marketing, and are organised according to customer type. These units are able to offer specific integrated solutions to customers.
- The “back end” units deal with research, development and elements of manufacturing. They are organised by product or technology type, and they are able to provide the modular elements to be combined into solutions.

Front-back structures are notoriously difficult to make work. The problem is organising one way at the front, one way at the back, and somehow linking or integrating the two together. The models that will be presented in this book try to help in this process. They show how solutions to these problems can be found through the use of appropriate dynamic simulation models.

This work concentrates on hi-tech supply chains and networks problems inside a front-back organisational model. As the reader may guess, these problems are related to many different topics of management science like marketing, operations, financial and risk management, etc.

Special challenges are faced in trying to find an appropriate solution by using models and the reader will realise how the need for an interdisciplinary approach when using dynamic modelling is compelling. The work is divided into five major parts:

- Part I. An introduction to dynamic modelling for supply chains.
- Part II. Modelling front-end issues in SCM.
- Part III. Modelling back-end issues in SCM.
- Part IV. Modelling integration issues in SCM.
- Part V. Dynamic Modelling Projects.
Each of these five parts covers different contents with the following intentions:

- Part I of the book is an introduction to the modelling methodology. Main concepts and procedures to build dynamics models properly will be reviewed. Literature concerning works dealing with dynamic modelling and supply chain management topics will also be reviewed.

- Part II is a review and proposal of dynamic modelling options to connect customer value to business targets. This is carried out by explaining how to characterise the target market by formalising what are often informal but deeply held beliefs concerning what drives their customers’ purchase decisions.

- Part III discusses and explains experiences in modelling different types of supplier contracts to accomplish varying degrees of security and flexibility. Attention is focused on business dynamics based on current best practices in portfolio management, as shown by leaders in volatile high-technology businesses. This part of the book also deals with manufacturing issues and problems that can be explored by using this methodology.

- Part IV reviews and discusses the operational and financial effectiveness of existing virtual tools used in supply chain integration. It illustrates how dynamic modelling may help to obtain a comprehensive model of supply chain integration, a modelling effort that can be used for the analysis of the effectiveness of various levels of integration, as well as for the assessment of the importance of the sequence in which virtual collaboration tools are adopted in supply chain integration. This part of the book also deals with cultural diversity issues and problems that can be explored by using dynamic modelling.

- Part V of the book includes various experiences and captured learning, that can be useful in the process of presenting, opening, developing or closing dynamic modelling projects.

Most of the models in this book are presented formally and the reader may easily implement them regardless of the software she/he may want to use. Models cover many different topics, all related to organisational change and improvement.

All the models are preceded by one or various case studies. A case study introduces the reader into the topic and problem, then tries to reveal and show, somehow, the business “call for action”.

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