

Foreword

Guest Editors – Angel Martínez Sánchez and Manuela Pérez Pérez

Information and communication technologies have long been identified as a strategic resource in inter-organisational systems. The advent of inter-organisational information technologies, and e-commerce in particular, has enabled the rapid spread of partnerships, alliances and collaborative information sharing across the extended supply chain. The role of information and communication technologies is a critical enabler in the supply chain, and has been widely acknowledged for improving demand visibility and transparency, online transactions and collaborative planning.

Achieving efficiency within a supply chain can be a competitive imperative within a particular industry. For a firm, its supply chain can be viewed as an entity that operates competitively relative to other supply chains. Besides the supply chain, alliances between manufacturers are another important source of knowledge and technological resources. Nowhere is this more apparent than in the automotive industry. One approach taken to achieve efficiency has been the adoption of inter-organisational systems. The automotive industry has recognised this and has taken a strong advocacy position with the respect to the adoption of EDI, Intranets and Internet technologies through the supply chain and between car makers alliances.

Besides the use for supply chain management and e-commerce, the information technologies are also a reality among many other new and old business functions: knowledge management, technology transfer, total quality management, virtual work and so on. Information technologies enhance business process improvements through intra-organisational and inter-organisational communications and functions.

The automotive industry is considered a pace maker in Internet-based 'business to business'. On the one hand, modular production benefits from intensive usage of the Internet: especially the typical complex value chain within automobile production requires a high degree of co-ordination between OEM and first-tier suppliers, but also increasingly between the first-tiers and their suppliers. On the other hand, and by far more frequently as compared to inter-firm co-operation issues, firms make use of the Internet in a competitive, market-spreading way. Especially the purchasing and sales departments use web-based information technology for their supplier or customer management, or to support strategic sourcing activities.

The conditions in the automobile supply industry are also very favourable for the implementation of e-business technologies. Particularly the organisational change in the supply industry affects the implementation of new Internet technologies and vice versa. The processes of concentration and differentiation in the supply industry is both cause and effect of the intensive usage of information and communication technologies and e-business.

This special issue focuses on the most advanced research achievements concerning tools and methods for sharing, diffusing and integrating information among activities in



the automotive industry supply chain and between car makers alliances. The aim is to provide an on-hand reference for enterprises working for or operating in the automotive sector. A fine collection of papers has been assembled for this special issue. In the first article, Gernot Mühge, Markus Hertwig and Hellen Tackenberg provide an overview of internet usage in the automobile supply industry according to supplier type and different internet applications and in comparison to all business lines. The underlying data reveals that the automobile industry serves as a role model, particularly for industrial sector, and holds the lead position compared to the total of German business. They also propose that information technologies have contributed to the acceleration of structural changes in the automotive industry. E-business applications support different management strategies but mainly lead to a 'mixed mode' in the organisation of the supply chain.

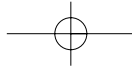
The second article, written by Takahiro Fujimoto, examines how electronic parts procurement systems in the automobile industry affected its patterns of inter-firm transactions. The author explains the development and current situation of the standard network in the Japanese auto industry. He also examines the characteristics of transaction systems and information for parts transaction at three representative phases: supplier selection, parts design, and order of mass production parts. The author concludes that parts information systems, transaction systems, and architectural systems should be seen to co-evolve as they mutually adapt to each other in a process – dependent way.

The third article focuses on one very well diffused information technology in the automotive industry: the EDI (Electronic Data Interchange). The authors analyse the relationship between the adoption and use of EDI and customer service in the Spanish automotive supplier industry. The results indicate that automotive suppliers that have adopted EDI perceive a better customer service than non adopters. Similarly, automotive suppliers that have integrated EDI with its management information system perceive better customer service than do companies that have not integrated EDI. Customer service in the automotive supplier industry is positively explained by the quality of the information interchanged, the lower conflict in the relationship, the frequency of deliveries, and the experience in the customer – supplier relationship.

Mickey Howard and Matthias Holweg's article (*Investigating the intangible: lessons learnt from research into automotive inter-organizational IT systems*) reviews the main research methods in information technology, based on the lessons learnt from a three-year research program in the automotive industry, called the '3DayCar Programme'. They develop a framework for applied researching information technologies in organisational settings – discussing the most commonly used approaches, and providing an objective view of both qualitative and quantitative research methods. The authors advocate a combination of methods to applied inter-organisational research involving information technologies systems.

The fifth article of the special issue is written by Andrew Lyons, Dennis Kehoe and Julian Coleman. They identify both the theoretical benefits and the practical feasibility of the case for enhanced communication between manufacturer and suppliers with the vehicle manufacturer providing lower-tier suppliers with access to build schedule information. A four companies case study in the supply chain for vehicle seats illustrate the methodology.

Hiromi Shioji in his article '*Main tasks of dealer's Internet activities in new automobile sales*' analyses why huge gap between Internet auto shoppers and Internet auto buyers has been generated. The author indicates that this gap stems from three main factors: the

*Foreword*

307

behaviour of Internet auto shoppers; one-sided blind negotiation for dealers; and the immaturity of online buying service models.

The last article entitled '*A structured framework for analysis and understanding of factors impacting the effective application of e-marketplaces*', examines the interdependence between the information technologies and the business relationships in supply chains. The focus of the article is the strategic aspects of e-marketplaces with regard to the power, trust and relationship issues. The authors present an e-marketplace implementation case study in a leading automotive manufacturer to illustrate the research approach.

We wish scholars and managers find this special issue useful for their research activities and/or managerial practice.

