
Editorial

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James F. Campbell is the Professor of Management Science and Information Systems in the College of Business Administration at the University of Missouri, St Louis. He teaches courses in business logistics, supply chain management, location modelling and operations management. His main research activities have involved modelling and optimisation in logistics, transportation and supply chain management, and he has worked with public and private sector organisations in Canada, Australia and the USA. His work has appeared in leading journals including *Computers & Operations Research*, *European Journal of Operational Research*, *Int. J. Logistics Management*, *Journal of Business Logistics*, *Management Science*, *Naval Research Logistics*, *Operations Research*, *Socio-Economic Planning Science*, *Transportation Research and Transportation Science*. His current research projects include modelling transportation networks for air and truck transportation, locating hub facilities, decision support for snow removal and design of mobile sensor networks.

The *Int. J. Revenue Management (IJRM)* publishes original work that informs policy-makers, business decision-makers and academicians about innovative thought in the complex field of revenue management. This Special Issue focuses on revenue management for transportation services. Too frequently, revenue management is viewed in the narrower context of ‘yield’ management, which often focuses on the dynamic pricing and allocation of fixed capacity among customer segments to attract and retain business. This *Special Issue*, while recognising recent innovation in these traditional areas, highlights applied research on other topics important to the generation of revenue from transportation services. Addressed herein are the effects of higher-level strategic decisions in US and European regulatory frameworks, the potential for integrating

transportation services and supply chain management, and auctioning mechanisms used in quite different contexts. Each of these applications of analytics to transportation services addresses corporate and governmental decision processes that can profoundly affect potential revenues of transportation providers over long time horizons.

Surveys of early work in revenue management for transportation services were compiled by McGill and Van Ryzin (1999) and Billings et al. (2003). In the inaugural issue of *IJRM*, Chiang et al. (2007) further described the evolution of revenue management practice, from the early use of the SABRE reservation system by American Airlines, to recent applications of market segmentation, pricing strategies, inventory control, overbooking, alliances and auction mechanisms by airlines, cruise lines, ferry lines, rental cars, watercraft, railways, pipelines and motor carriers.

A stream of *IJRM* papers has dealt specifically with revenue management for passenger airlines. Harris (2007) and Emrich and Harris (2008) analysed the tactics used by an airline with a hub-and-spoke network to deter entry of a low-cost competitor in a particular origin–destination market and they studied travellers’ responses to price-quality offerings. Abdelghany and Abdelghany (2007, 2008) simulated customer choice of carrier depending on ticket distribution channel usage, seat allocation strategies, code-sharing arrangements and the nature of presentations of search results. Raza and Akgunduz (2008) presented an analytic model for estimating the fares and booking limits that would emerge for duopolistic air carriers on a single route under different market conditions. Frank et al. (2009) used simulation to investigate whether a more sophisticated model of inventory seat control is likely to be advantageous. Xu et al. (2008) described how mathematical programming can be used to produce consistent data for consumer choice models in airline revenue management systems when the raw data contains hierarchical anomalies and missing data for some service class-price combinations. Chapuis (2009) discussed different serial dependencies that may occur in the accrual of bookings and how booking strategies should be attuned to them. Cleophas et al. (2009) summarised the use of various statistical models for forecasting travel demand and simulating traveller choice among carriers, routes and classes of service. For motor carriers, Madden and Russell (2009) presented dynamic models for deciding whether a full-truckload freight carrier should offer service over particular routes.

Other *IJRM* papers have addressed airline management at a higher level. Baliga et al. (2008) discussed airlines’ strategic responses (consolidation, alliances, code-sharing, service operations, outsourcing, etc.) to the changes in regulatory regimes in the USA and Europe. Becker and Kasilingam (2008) discussed the challenges of introducing revenue management practices for air cargo services, where the product has two dimensions (weight and volume) and interacts with bookings for airline passengers. Abdelghany et al. (2009) presented a mathematical programming model for developing code-sharing strategies with partner airlines.

The papers in this issue provide new perspectives on revenue management in transportation services and address gaps in the literature identified in the survey of Chiang et al. (2007). The papers provide tools that can be used to explore the impact of regulatory regimes and corporate alliances for use of scarce public resources (e.g. airline departure and arrival slots at congested airports). They illustrate applications in ‘non-traditional’ areas (transportation of forest products and funding for transportation infrastructure projects) and the potential use of new technologies (including online auctions).

With actual passenger and flight data for congested hubs in the USA, Vaze and Barnhart employ mathematical programming and simulation models to evaluate the consequences of the US regulatory regimes and carriers' revenue management practices on delays experienced at hub airports. They create a benchmark that would be achievable if, instead, a single national carrier was able to optimise its operations to deliver a comparable level of service. It is easy to see how this work could be extended to address environmental issues. In a European setting, Castelli, Pellegrini and Pesenti investigate alternative methods of granting rights to airport slots at major hubs among competing carriers. They show how carriers would optimally adjust their routes and flights if changes were made to the practice of grandfathering landing and departure rights.

Zazgornik, Gronalt and Hirsch model the transportation of forest products among different levels in the supply chain. They show how various transportation assets would be employed under different revenue management practices of freight forwarders that provide services at several levels of the forest product supply chain. They prepare the ground for further consideration of the ways that supply chain partners might shift value-added activities among different parties in the forest product supply chain depending on revenue management practices of those who provide transportation services and other parties in the supply chain.

Ülkü and Bookbinder present a model that a vendor in a supply chain can use to develop pricing practices that depend on the timing of orders at different stages of freight consolidation cycles for their fleet of trucks. Their work might be considered along with previous *IJRM* papers by Kadavevaramath and Mohanasundaram (2008) and Kadavevaramath et al. (2009) by researchers who wish to analyse transportation in a supply chain context.

Chen and Qin show how real options may be used to finance transportation infrastructure projects undertaken through public-private partnerships. In another novel application of auctions, Emiris and Marentakis illustrate how a marketplace could be created to auction transportation services, depending on the current locations of mobile transportation assets.

Each of the papers in this Special Issue has been through a rigorous blind reviewing process. We are grateful to the helpful advice that reviewers provided to the authors and the responsiveness of the authors in incorporating the reviewers' valuable suggestions. The result is a remarkable collection of original work that provides rich insight to practitioners and stimuli for further research. In particular, these papers lay the groundwork for further study of revenue management in broad corporate contexts. We see the need for further studies on

- 1 the linkages between revenue management practice and transport regulation
- 2 the effects of different cost-recovery policies for public transportation resources on revenue generation activity of transportation providers
- 3 environmental effects of revenue management practices in transportation
- 4 extending revenue management for transportation services to encompass other aspects of supply chain management.

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