
Editorial: commercialization of technology in transportation

Eliezer Geisler

Professor of Management, College of Business and Economics,
University of Wisconsin, Whitewater, WI, 53190WA, USA

Aaron Gellman

Transportation Center, Northwestern University, Evanston, IL 60208,
USA

The importance of technology in transportation is an established reality, yet is largely overlooked by management and business researchers. Systematic explorations into the intersect of transportation and technology has been lacking, with some exceptions in a few sub-sectors of transportation and chiefly with regards to information technologies.

This special issue of the *International Journal of Services Technology and Management* is an initiative to bring together scholarly works from different areas of transportation research and technology management. The articles in this special issue vary in content, from selected applications of technologies to broader studies of sectors and countries. The issue features articles from various countries, including the United States, China, Japan, India, the Netherlands, and Italy.

This special issue has four objectives. First, to provide the reader with the state of the art in the intersect between transportation and technology management. This is done by looking at the commercialization and utilization of technology by transportation companies. Secondly, to portray various aspects of the implementation of technologies in transportation companies and ascertain how these companies (across sub-sectors and countries) manage these technology implementations.

The third objective of this special issue is to offer some lessons drawn from the articles. These lessons are embedded in the articles and contain recommendations for managers of transportation companies regarding their technology. The articles also raise some theoretical and practical issues in the commercialization of technology by these companies.

The fourth objective of this special issue is to foster and motivate other efforts of this type, namely, the management of technology in transportation. Many issues remain poorly studied, so this special issue may lead the way for other publications. There is a need systematically to study such issues as:

- 1 benefits accrued from technology commercialization in transportation companies;
- 2 human behavior aspects and reactions to implementation of technologies in transportation companies;
- 3 modes of acquisition and decision-making;

- 4 similarities and differences across sub-sectors (e.g., airlines, rail, trucking, maritime) in management of technologies; and
- 5 relationship of technology commercialization, core competencies, and competitive position of transportation companies.

This special issue contains 11 articles. The first is by Geisler and Gellman, and presents a general view of the state of the art in commercialization and utilization of technology in transportation companies. Second is an article by Jose Holguin-Veras, who conducted a survey on the practice of information technology at marine container ports. He concluded that the computerized container status inquiry system applied by maritime companies has had a positive effect on enhancing efficiency of motor carriers.

The third article by Randolph Hall looked at the effects of the national system architecture in the USA on transportation management and control. Among his several conclusions, Hall contended that in the case of the state of California, the national system architecture "is unlikely to significantly affect transportation deployments in the state." Gorman and Sarrafzadeh in the fourth article discuss the application of dynamic programming to crew balancing at the railway company Burlington Northern Santa Fe. They estimated the potential savings from the technology at 4% of the total crew deadhead and hold away costs. They also offer some suggestions to management for additional benefits.

In a study of the integration of automatic passenger counting and automatic vehicle location, Rossetti and Turitto describe a prototype that would provide automatic collection of transit system performance. The authors describe the system, its functionality, its cost factors, and its possible application in route control strategies. Terence Brown follows with an article that examines the case of truck brokers as they have been affected by deregulation and the emergence of this new technology-based sub-sector.

Holden and Konishi describe some technology transfer practices in Japanese companies. Although their analysis is broad-based and may apply to any company, they emphasize technology transfer in light of the service element in which Japanese companies tend to excel. The authors' guidelines for effective technology transfer are highly applicable to transportation companies in Japan and elsewhere in the world.

The eighth article is by Meng Yu and Debbie Niemeier. The article explores the implementation issues of the double-stack network in China. The authors compared basic conditions of double-stack railway infrastructure between Chinese and US practices. They concluded that adoption of this technology in China would be easier in China because of China's learning experience from US practice.

In the next article, Anna Slomovic *et al.* discuss the development of transportation technology policy in the Netherlands. They investigated the effort of the Dutch government to relate such concepts as policy goals and technology in the design of their multi-year plan. The authors have concluded that such a relationship seemed useful in building planning scenarios for transportation policy.

The next two articles deal with the automotive industry. The first of these is by Zafar Husain and Sushil. They investigated the Indian experience in the transfer of technology in the growing automotive industry in the Indian sub-continent. This is a very comprehensive article with ample description of the Indian automotive sector.

Finally, the last article in this special issue is by Emilio Paolucci. He examined the inter-firm relationships in the automotive industry, with particular attention given to the

effect of technological complexity on technology transfer mechanisms. He used the Italian company Fiat as an example, and how the Fiat research centre gained new technologies through cooperation with other organizations.

These articles offer a rainbow of topics, ranging from normative to descriptions of specific applications. We hope that this special issue will trigger future similar efforts.

We wish to thank the assistance provided to us by the 22 reviewers of the papers we received, who donated their time and expertise to make this a better issue. We are also grateful to Daphne Lekkas of the Transportation Center at Northwestern University and to Dr. Janet Goranson for her help in preparing this issue for printing. We also wish to thank Dr. M.A. Dorgham for his leadership and assistance in the making of this special issue.