Tourism Supply Chain Management: A New Research Agenda

Xinyan Zhang

Haiyan Song,[1]

School of Hotel and Tourism Management
Hong Kong Polytechnic University
Hung Hom, Kowloon, Hong Kong

George Q. Huang

Department of Industrial and Manufacturing Systems Engineering
University of Hong Kong
Pokfulam Road, Hong Kong.

November 2008

[1]Corresponding author: hmsong@polyu.edu.hk, Tel: +852 2766 6372; Fax: +852 2362 9362.

Tourism Supply Chain Management: A New Research Agenda

Abstract

This paper seeks to review current research on supply chain management (SCM) within the context of tourism. SCM in the manufacturing industry has attracted widespread research interests over the past two decades while SCM studies in the tourism industry are very limited. Stakeholders in the tourism industry interact with each other to resolve their divergent business objectives with different operating scopes. The potential benefit of considering not only individual enterprises but also the tourism value chain becomes evident. The paper examines the characteristics of tourism products, identifies and explores core issues and concepts in tourism supply chains (TSC) and tourism supply chain management (TSCM). While the literature on TSCM or its equivalents emerges recently, the progress is variable with most research being focused on distribution and marketing activities, without fully considering the whole range of different suppliers involved in the provision and consumption of tourism products. This paper provides a systematic review of current tourism studies from the TSCM perspective and develops a framework for TSCM research which should be of great value not only to those who wish to extend their research into this new and exciting area, but also to tourism and hospitality decision makers. The paper also identifies key research questions in TSCM worthy of future theoretical and empirical explorations.

Keywords: Tourism management, tourism supply chain, supply chain management.

1 Introduction

During the last two decades, the tourism industry has evolved and modernized considerably. The highly competitive environment of the tourism industry has forced tourism firms to look for ways to enhance their competitive advantage. For example, there has been considerable growth in the implementation of new information technologies and the development of new commercial formats such as eTourism. In addition to these technological measures, one of the strategies that tourism firms could adopt to increase their competitiveness is effective tourism supply chain management (TSCM). Although academics have debated whether or not tourism can be viewed as an industry, the term "tourism industry" is used throughout this paper as it is commonly used by both researchers and practitioners.

Adversarial relationships are the norm in the tourism industry (Sinclair & Stabler, 1997), but TSCM entails a new perspective. TSCM can be referred to as a set of approaches utilized to efficiently manage the operations of the tourism supply chain (TSC) within a specific tourism destination to meet tourist needs from the targeted source markets and accomplish the business objectives of different enterprises within the TSC. This TSCM philosophy requires moving away from arms-length relationships toward coordination across organizations throughout a TSC.

Tourism products are often viewed by consumers as a value-added chain of different service components, forming a service network. Therefore, identifying ways to manage this network is vital, especially for large tourism firms that are keen to maintain a competitive advantage over their equally efficient rivals. Many tourism researchers have used a systematic approach from the marketing perspective to investigate tourism distribution channels, including Buhalis (2000), Middleton and Clark (2001), Pearce and Schott (2005), Stuart *et al*. (2005), and Pearce *et al*. (2007).

The supply side of the tourism industry, however, has been largely neglected (Sinclair & Stabler, 1997). Whereas distribution channels involve promotional and marketing activities, supply networks involve inter-firm relationships and product development. The lack of attention to supply networks is not unique to tourism. Most service industries also emphasize marketing over supply (Smith, 1994). This situation is in contrast to that of the manufacturing industry, in which product development and the actions of interrelated firms have generated a considerable number of published studies.

Despite the focus on distribution channels, the improvement of the distribution side seems to be insufficient to benefit the single tourism enterprise or the tourism industry as a whole. There is a need to analyze the entire industry from an integrative perspective, that is, as a tourism supply chain (TSC). Until very recently, studies of TSCs or their equivalents, such as the tourism value chains or tourism industry chains, have been limited. Examples include Kaukal *et al*. (2000), Page (2003), Tapper and Font (2004), Alford (2005), and Yilmaz and Bititci (2006).

Supply chain management (SCM) is a concept that originated and flourished in the manufacturing industry. Comparatively little research attention has been paid to SCM in the tourism industry. The paucity of research is surprising considering the amount of SCM research in other service industries, such as the retail industry. Retail researchers and practitioners have investigated SCM strategies to counter the increasing uncertainty and complexity of the marketplace and increase efficiency by reducing inventories along the entire supply chain (Ellram *et al*., 1989; Fernie, 1995; Tan, 2001; Gimenez & Ventura, 2003; Hugos & Thomas, 2006). Researchers have also discussed inventory management policies, such as vendor management inventory (VMI) solutions, which were popularized by Wal-Mart and Procter & Gamble (Waller *et al*., 1999), the application of information technologies (Kämäräinen & Punakivi, 2002; Prater *et al*., 2005), information sharing and supply chain coordination (Clark *et al*., 2001; Hill & Scudder, 2002; Han, *et al*., 2002; Hornibrook &

Fearne, 2002), supply chain relationships (Fearne, 2000; Duffy & Fearne, 2004), and collaborative forecasting (Småros, 2007).

It is believed that SCM practices that are successful in other industries should be useful in the tourism industry. The key is to determine the SCM issues that are beneficial to the tourism industry, bearing in mind the specific nature and characteristics of the latter. Because of the complex interactions among numerous stakeholders in the tourism industry, who have divergent objectives and scopes, the potential benefits of adopting best practices of TSCM would be huge. This paper makes an early attempt to identify various subject areas of TSCM after an investigation into the nature and characteristics of tourism and its supply chain. They are demand management, two-party relationship, supply management, inventory management, product development, TSC coordination, and information technology.

An examination of the existing studies shows that there is an emergent literature on TSCM or its equivalents in recent years, especially from the perspective of tourism distribution channels. However, consensus has not yet been reached on how best to characterize a TSC, and the limited literature cannot provide guidance for tourism and hospitality researchers and managers. The need for clearly defined conceptions and conceptual frameworks becomes apparent to advance the field. In the process of developing a common framework, we examine and consolidate published studies on tourism management related to the diverse issues mentioned above. The contributions from the various studies exist in isolation, but they have many of the critical elements necessary for successful TSCM. This study is the first comprehensive analysis of current tourism studies from the perspective of TSCM with several notable contributions. The first contribution is a coherent presentation and classification of the current body of knowledge which should be useful for research on TSCM.

The second contribution is the development of a research framework of TSCM as shown in Figure 2. As stated above, the literature and practice indicate that there is no

consistent view of what TSCM is or should be. There is a pressing need of a conductive and instrumental tool for further research on TSCM. The framework illustrated in Figure 2 can help readers to understand better the scope of both challenges and opportunities associated with TSCM. It shall also be of great value not only to researchers who desire to extend their research into this new and promising area, but also to tourism and hospitality decision makers who are interested in TSCM strategies.

In addition to highlighting an emerging and important area of research, the third contribution of this work is to cater for the need of theory building in tourism management. Critical issues identified herein help contribute to the development of TSCM theory. The research framework developed in this study can be further refined or extended into various theoretical models, thereby allowing researchers to test the validity of and relationships among the critical issues along with their impacts on TSC performance, and ultimately to create a coherent theory of TSCM.

The rest of this paper is organized as follows. Section 2 presents an overview of SCM, conceptualizes a TSC, and describes some of the critical issues associated with TSCM. The critical TSCM issues are analyzed in Section 3. The development and justification of the research framework are presented in Section 4. Section 5 provides several suggestions for future studies of TSCM, and Section 6 concludes the study.

2 Supply chain management in tourism

2.1 Overview of supply chain management

The fierce global competition in the 21st century is focused on supply chains rather than on individual companies. From a macro perspective, a supply chain is a network of enterprises which are engaged in different functions ranging from the supply of the raw materials through the production and delivery of the end-product to the target customers. From a micro perspective of a firm, a supply chain is a network of nodes which perform functions such as procurement of raw materials, fabrication of parts, assembly of components

and subassemblies, final assembly of end products, and delivery of finished products to regional distribution centers/customers. A supply chain is characterized by a forward flow of goods and a backward flow of information. It is comprised of seven main business processes: customer relationship management, customer service management, demand management, order fulfilment, manufacturing flow management, procurement, product development and commercialization (Cooper *et al*., 1997).

Although there is no systematic way of defining the scope of a "firm-specific" supply chain problem, there is a simple guideline proposed by Simchi-Levi *et al*. (2000). This guideline is based on the three levels of decision hierarchy: (1) strategic level; (2) tactical level; (3) operational level. The classes of supply chain problems encountered in strategic level involve decisions concerning long-term issues such as demand planning, strategic alliances, new product development, outsourcing, supplier selection, pricing, and network configuration decisions. Although most supply chain problems are strategic by nature, there are also some tactical problems which involve medium-term decisions such as inventory control, production/distribution coordination, material handling, and equipment selection. The problems fall into the operational level concern weekly or daily events such as vehicle scheduling, routing, workforce allocation, and process planning.

The concept of supply chain management has been used extensively for manufactured products to improve the efficiency across the value chain such as the efficiency of logistics and planning activities, and materials and information control, internally within a company or externally between companies (Christopher, 1992; Cooper *et al*., 1997; Fisher, 1997). Since coined by Houlihan in 1985 (Houlihan 1985), the term supply chain management (SCM) has been advocated for the last two decades. Despite the popularity of the term supply chain management (SCM), both in academia and practice, there is no commonly accepted definition. The most popular definition of supply chain management is given by Simchi-Levi *et al*. (2000) as "*a set of approaches utilized to efficiently integrate suppliers, manufacturers,*

warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying service level requirements."

The key concern in SCM philosophy is to recognise the interdependency in the supply chain, and thereby generate strategies that support the efficient integration of the various links. Thus, SCM takes a system approach to viewing the supply chain as a whole (Simchi-Levi *et a*l., 2000), and emphasizes the need of the integration of various links of the chain (Cooper *et al*., 1997; Lambert *et al*., 1998). Various subject areas such as strategic, inter-organizational issues (e.g. Cox, 1997; Harland *et al*., 1999), vertical integration (e.g. Thorelli, 1986; Hakansson & Snehota, 1995), supplier relationship (e.g. Helper, 1991; Hines, 1994; Narus & Anderson, 1995), and purchasing and supply (e.g. Morgan & Monczka, 1996; Farmer, 1997), have contributed to the explosion of SCM literature. There also exist a number of surveys of SCM literature published in academic journals (see, for example, Min and Zhou (2002), Tan (2001), and Ganeshan *et al*. (1999)).

2.2 Concept of tourism supply chain

From the myriad of research on SCM, it can be seen that much of the literature focuses on the manufacturing industry with little attention being paid to the service sector. From the perspective of the tourism industry, this lack of attention is somewhat surprising. As early as in 1975, the United Nations World Tourism Organization (UNWTO) published a report on the distribution channels of the tourism industry (UNWTO, 1975). The term *distribution channel* is a supply chain in a different guise. It could be narrowly defined as a supply chain that focuses mainly on the distribution and marketing activities in the chain.

The attention from the academic community or industrial sectors on supply chains in tourism does not increases in pace with the rapid development of tourism industry in recent decades, Nevertheless, there have appeared several studies on supply chains in tourism, including UNWTO (1994), Sinclair and Stabler (1997), Buhalis and Laws (2001), and Page

(2003). Sinclair and Stabler (1997) emphasize the importance of the supply side of tourism industry. *Tourism Distribution Channels: Practices, Issues and Transformations*, a key text edited by Buhalis and Laws (2001), consists of 23 chapters written by various contributors, and many of these chapters are related to the distribution networks in the tourism industry. Page (2003) notably points out that the provision of tourism products and services involves a wide range of interrelated tourism suppliers and plots a structure of a tourism supply chain. The supply chains in tourism have not been extensively examined and have only gained an increasing attention recently. Exceptions include Scavarda *et al*. (2001), Tapper and Font (2004), Alford (2005), and Yilmaz and Bititci (2006). However, the research does not go beyond descriptive studies.

Although literature of tourism supply chains is scarce, some authors have alluded to or touched on the concept or its equivalents, such as the tourism value chains or tourism industry chains. Kaukal *et al*. (2000) note that a typical tourism value chain consists of four components: tourism supplier, tour operator, travel agent and customer, and they are in a single link chain. Alford (2005) presents a visual presentation of the tourism supply chain produced by Business and Cost Analysis Working Group in order to analyze pressure points where costs can be stripped out. Yilmaz and Bititci (2006) develop a tourism value chain concept to manage the tourism product as an end-to-end seamless product. In their report, Tapper and Font (2004) define a TSC as a chain that "*comprises the suppliers of all the goods and services that go into the delivery of tourism products to consumers.*"

According to Porter (1980), every industry has an underlying structure, or a set of fundamental economic and technical characteristics, that gives rise to its operational and competitive characteristics. That is, every supply chain varies according to the type of products supplied. Thus, identifying the features of the tourism industry and its products is of great importance when describing a TSC. For instance, tourism products are normally rooted in a specific territory and provided to tourists from a specific source market, so they often

vary according to destinations and source markets. Based on the existing definitions of TSCs in the literature and taking into consideration the characteristics of the tourism industry, the following definition of a TSC is advanced.

> A tourism supply chain (TSC) can be defined as a network of tourism organizations supplying different components of tourism products/services such as flights and accommodation for the distribution and marketing of the final tourism products at a specific tourism destination, and involves a wide range of participants in both the private and public sectors.

2.3 Supply chain management in tourism

To understand the key challenges faced by the successful management of TSC, the characteristics of tourism products and the tourism industry are of central importance. As part of the services sector of the global economy, tourism possesses a number of distinguished characteristics that are different from the manufacturing and primary sectors. As having been discussed in the following, six characteristics of tourism can be observed.

Firstly, tourism is a *coordination-intensive* industry where different products/services (transportation, accommodation, and so on) are bundled together to form a final tourism product. Secondly, as service cannot be stored for future use, tourism product is *perishable*. Thirdly, tourists need to travel to the destinations where tourism products are produced to consume these products. Tourism products cannot normally be examined prior to their purchase, which means that the sale of tourism products is very much dependent upon the presentation and interpretation of the products. Therefore, the tourism industry is a very *information-intensive* or *information-dependent* industry (Ujma, 2001). Fourthly, tourism products are *complex* in nature. Normally, tourism products are heterogeneous and compound, consisting of many different service components such as accommodation, transportation, sightseeing, dining, and shopping. Finally, the tourism industry often faces higher *demand uncertainty* and more complex *dynamics* than its counterparts because of intensive

competition among service providers. Many factors contribute to market uncertainty in terms of the demand for tourism products. For example, effective advertising can attract more tourists whereas negative word-of-mouth effect can lead to a fall in demand. The economic conditions in tourist generating countries and regions often serve as a push factor, influencing the demand for tourism products in a particular destination.

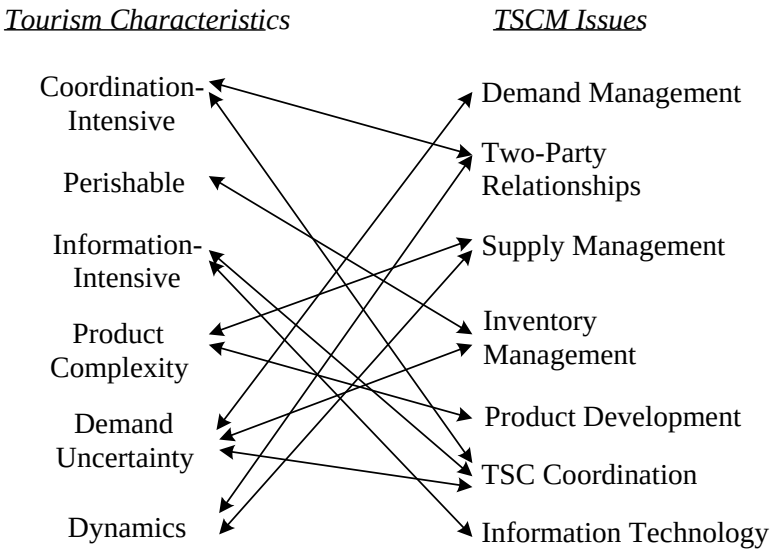

Figure 1. Tourism characteristics and related TSCM issues.

Based on these characteristics of the tourism industry, the following seven key management TSCM issues are identified: demand management, two-party relationships, supply management, inventory management, product development, TSC coordination, and information technology. Due to the space limitations, the detailed explanation of how these issues are identified is omitted. Instead, the rationale for the identification of these issues is presented in Figure 1, through a description of the relationships among tourism characteristics and the issues. These key TSCM issues are discussed in greater detail in the following sub-sections.

3 Critical issues in TSCM

To facilitate a better understanding of both the critical elements and activities associated with TSCM research, a framework that provides a coherent view of these essentials is provided in Figure 2. The development and justification of the framework is presented in greater detail in section 4. Critical issues in TSCM are carefully analyzed as they contribute to the core of TSCM research.

3.1 Demand management

Demand management is a vital part of SCM that links the processes within the chain. Generally speaking, demand management includes demand forecasting, marketing, and sales planning based on the projected demand and service/production capacity.

Demand management is crucial in successfully implementing TSCM. From a strategic point of view, tourism investment decision making, especially investment in destination infrastructures such as airports, highways, and rail-links, relies on demand estimation as it requires long-term financial commitment, and the sunk costs can be very high if investment projects fail to fulfil their designed capacities. In addition, government macroeconomic policies largely depend on the relative importance of individual sectors within a destination. From the operational point of view, the activities of supply chain members such as airlines, tour operators, hotels, cruise ship lines, and recreation facility providers are directly driven by tourism demand. The success of many businesses depends largely or entirely on the state of tourism demand, and market failure is quite often due to the failure of the firms to meet the market demand. Because of the key role of demand as a determinant of business profitability, estimates of expected future demand constitute a very important element in all TSC planning activities.

As an important area in the tourism-related literature, tourism demand forecasting has attracted considerable research interest. According to a comprehensive review by Li, Song, and Witt (2005), about 420 studies on this topic were published during the 1960-2002 period.

Most studies of tourism demand forecasting are based on statistical methods, especially econometric and time-series approaches (for detailed reviews of the tourism demand forecasting literature, see, for example, Witt and Witt (1995), Li *et al*. (2005), Song and Li (2008)). Although many advanced quantitative demand forecasting models have been developed in the literature, tourism practitioners usually have little interest in scholarly journals, so they are either unfamiliar with modern forecasting methods that have been presented in the literature or simply do not have the time to be involved in the design and development of such advanced models to generate more accurate forecasts. Hence, a new kind of forecasting mechanism that can facilitate the mutual transfer of information and knowledge between the experts in tourism forecasting and practitioners in the tourism industry is highly desirable.

For a TSC to be managed effectively, demand management clearly has to have at least some kind of centralized position in the entire chain. In recent years, collaborative supply chain forecasting has become popular. The value of collaborative forecasting lies in the broad exchange of information to improve forecasting accuracy when the supply chain members collaborate through joint knowledge of sales promotions, pricing strategies, marketing, and production information. Although there is a wide body of literature concerning collaborative forecasting within supply chains for physical goods, it has not yet been considered in the tourism literature. The study of Song, Zhang, and Witt (2008) is the only exception.

3.2 Two-party relationships

The term “supply chain” implies two-party relationships in which all tourism organizations have relationships with other entities such as suppliers, distributors, competitors, partners, governments, and other firms carrying out complementary activities, to better accomplish their operations and fulfil customer needs. For this reason, the effective management of two-party relationships within a TSC is a crucial issue in TSCM.

Relationships in a supply chain are categorized into two groups according to their direction – vertical relationships and horizontal relationships. Vertical relationships exist among heterogeneous players who do not have overlap capability. An example is a travel agency's relationship with its suppliers. In contrast, horizontal relationships concern homogeneous players in the same echelon of the supply chain who usually have overlapping capabilities. An example is the relationship between two hotels supplying similar hotel accommodation. According to the market structure of each echelon within the supply chain as well as the power and dependency between each player and the number of players, the relationships can be classified into four types: many-to-many, one-to-many, many-to-one, and one-to-one relationships. Additionally, the relationships in a supply chain can take a variety of forms, such as arms length, strategic alliance, vertical integration, cooperation, coordination, and competition.

Effective supply chain management, therefore, relies greatly on the success of relationship management. As mentioned, a TSC is a complex network involving a wide range of sectors, each of which has its own market structure. Tourism organizations need to consider not only their market structure but also that of others. In addition, a very important phenomenon in the tourism industry is its dynamic structure, which allows the players to change business partners from time to time to maximize their profitability and competitiveness. For example, the relationships between governments and tourism firms, and between tourists and the environment, evolve over time. The involvement of various players together with the evolving TSC relationships makes relationship management in a TSC even more difficult. However, a good understanding of the relationships in a TSC is helpful and critical to achieving efficient and effective TSCM.

In tourism research, significant efforts have been directed to understanding the relationships in the industry. Existing studies cover topics including integration in TSCs (Theuvsen, 2004; Lafferty & Fossen, 2001); competition issues related to hotels (Chung,

2000; García & Tugores, 2006; Mazzeo, 2002), tour operators (Baum & Mudambi, 1994; Taylor, 1996; Caccomo & Solonandrasana, 2001), and attractions (Wie, 2004, 2005; Candela & Cellini, 2006); relationships between the local government and tourism organizations (Piga, 2003a, 2003b, 1999; Accinelli *et al*., 2006a), tour operators and destinations (Baloglu & Mangaloglu, 2001; Carey *et al*., 1997; Curtin & Busby, 1999; Klemm & Parkinson, 2001), and tourism organizations and tourists (Taylor, 1998; Han *et al*., 2004); and the evolutionary relationships between tourists and residents (Accinelli *et al*., 2006b; Bimonte & Punzo, 2007). A review of the literature shows that attention has tended to concentrate on competitive interactions between tourism firms, which may reflect the current position in many tourism markets. Tour operators often have market power to directly interact with tourists and therefore play a key role in the development of sustainable TSCs in the destinations. Theuvsen (2004) points out that coordination among enterprises could benefit the tourism industry.

3.3 Supply management

Supply management emphasizes the buyer-supplier relationship in a supply chain (Leenders *et al*., 2002). Because suppliers have a profound impact on the costs and quality of the buying firms in supply chains, supply management has been of great interest to SCM researchers. Topics of supply management include long-term relations, supplier selection, supplier base reduction, supplier involvement, and supplier certification (Chen & Paulraj, 2004). Although there are a few tourism studies that have addressed supply management issues, these studies are scattered and lack a clear focus. Existing studies of supply management in the tourism industry fall into three broad categories: (1) the relationships between suppliers (hotels, resorts, attractions, and airlines) and travel agencies/tour operators, (2) the relationships between wholesale and retail travel agencies, and (3) supplier selection problems.

Research into supply management in tourism has focused on the relationship between tour operators and hotels (March, 1997; Garcia-Falcon & Medina-Munoz, 1999; Buhalis, 2000; Karamustafa, 2000; Medina-Muñoz & García-Falcón, 2000; Medina-Muñoz *et al*., 2002, 2003; Tse, 2003; Bastakis *et al*., 2004). March (1997) finds that Australian travel suppliers are extremely dependent upon travel buyers. Garcia-Falcon and Medina-Munoz (1999) examine the diversity in and major characteristics of the relationships between hotels and travel agencies in the United States through an empirical survey. The results show that having good relationships with travel agents is an important element for the success of hotels. Karamustafa (2000) notes that hotels in Turkey depend heavily on package tour operators, and that the success of hoteliers relies on the willingness of tour operators to work with the local lodging industry. Buhalis (2000) studies conflict in the relationships between hotels and tour operators in the context of Mediterranean summer seaside resorts through in-depth interviews. He finds that Mediterranean hotels consider the market power of tour operators from North European countries very challenging. Medina-Muñoz and García-Falcón (2000) are the first to try to identify the determinants of successful relationships between hotels and travel agencies, and the most cost-effective way for a hotel to extend its sales and marketing efforts. Their empirical results show that trust, commitment, coordination, communication quality, information exchange, participation, use of constructive resolution techniques, and similar relative dependence are the key factors that affect successful relationships between hotels and travel agencies. Tse (2003) investigates the relationship between travel agents and hotels when the latter take distribution back into their own hands by setting up Web sites allowing online bookings. The possible responses of agents are analyzed and suggestions for improving the quality of the buyer-supplier relationship are put forward. Medina-Muñoz *et al*. (2003) look at the control that German and British tour operators exercise over the accommodation companies with whom they do business and the characteristics of the two types of companies that influence the control. The study helps tour operator management to

gain suitable control over accommodation companies and identifies possible actions to be taken by accommodation providers in improving their relationship with tour operators.

Other studies discuss the relationships between airlines and travel agencies (Alamdari, 2002; Appelman & Go, 2001) and wholesale and retail travel agencies (Tsaur *et al*., 2006). Alamdari (2002) explores the interactions between airlines and travel agents by analyzing the distribution strategies of major carriers in the United States, Europe, and Asia. Appelman and Go (2001) describe the beginning of the transformation of the relationships between worldwide airlines and travel agencies engaged in international travel. Tsaur *et al*. (2006) examine a relational behavior model between wholesale and retail travel agencies in Taiwan. Several influencing factors of the relationship are identified through surveys.

Selecting suppliers for specific services is critical for most tourism organizations, as tourists often view a tourism product as a seamless service. Supply performance can therefore have direct financial and operational impacts on the business. Recognizing this, some tourism researchers investigate supplier selection issues (see, for example, Cobanoglu *et al*., 2003; March, 2000; Pearce, 2007). Cobanoglu *et al*. (2003) survey 612 Turkish business travelers to determine the importance they place on hotel selection attributes. March (2000) examines the purchasing attitudes of tour operators regarding three types of tourism products: hotels, coach companies, and restaurants. He surveys 26 inbound tour operators in Asia who dealt with inbound tourists to Australia. Pearce (2007) investigates supplier selection in the New Zealand inbound tourism market, especially the factors that lead tour operators to change their suppliers.

3.4 Inventory management

Supply chains are classified into two categories: push supply chains and pull supply chains. In push supply chains, the production of a product is authorized based on the demand forecasts ahead of the customer purchases. Demand is forecast based on historical sales data. The demand for products by end users can be met through inventory. In contrast, in pull

supply chains, the final assembly of the product components is triggered by customer purchasing orders. Good inventories are minimized in pull supply chains. Flexible capacities are required to meet variations in demand. The type of supply chain is determined by the nature of the product produced and the production process. A TSC can be categorized as a push system because the production of tourism products is normally based on demand forecasts. Therefore, inventory plays a key role in a TSC.

Because tourism products are perishable and have relatively high fixed costs that are paid in advance to build up a fixed level of capacity, the variable costs incurred during the production process are relatively low. This makes it difficult for tourism managers to balance supply and demand in the short run by varying production capacity. Additionally, many tourism products are often produced well before the existence of the demand (in the push system), and the demand is usually realized by inventory. That is, demand uncertainty and variation can be treated by inventories, which represent financial expenditures. Therefore, developing effective inventory management strategies is crucial for achieving efficient TSCM.

In a TSC, hotels and airlines often collaborate with a number of tour operators whose offices are located in various destinations. The agreements on inventory allocations from hotels and airlines to different tour operators are usually assigned on a regular basis. In the tourism literature, inventory management problems, such as overbooking and revenue/yield management, have been addressed in the context of the hotel sector (Rothstein, 1974; Liberman & Yechiali, 1978; Lambert *et al*., 1989; Holder, 1991; Bitran & Mondschein, 1995; Baker & Collier, 1999) and airline sector (Rothstein, 1971, 1985; Shlifer & Vardi, 1975; Belobaba, 1987, 1989; Smith *et al*., 1992). Overbooking is a practice used to overcome cancellations or no-shows (Rothstein, 1974). Revenue management is a profit maximization method that “can help a firm sell the right inventory unit to the right type of customer, at the right time, and for the right price” (Kimes, 1989). Weatherford and Bodily (1992) provide a

review of research related to the above topics. Studies of TSC inventory issues, however, have not been found.

3.5 Product development

SCM aims to satisfy customer needs at the right time with the right products. Therefore, product development plays a critical role in the supply chain. Effective product development can speed time to market, improve the quality of products, reduce production costs, and smooth out demand variation. Product development, however, is not an easy task. It is a complex process that requires joint efforts from different players within the supply chain. It also requires a good understanding of customer needs, and involves a careful analysis of product components and elements to identify potential products that suit continuously changing consumer tastes.

Although there is a wide body of literature concerning product development in the manufacturing industry, it is a relatively neglected area of research within the tourism context. This lack of attention may be due to the composite nature of tourism products (Smith, 1994). In fact, discussion on tourism product formulations began with Medlik and Middleton (1973). However, with very few exceptions, notably the studies of Smith (1994), Bramwell (1998), and Agarwal *et al*. (2000), there has been very little analysis of tourism product development, in contrast to the significant efforts made in tourism marketing research.

However, as in all service industries, satisfying customer needs with the appropriate products is of the utmost importance. If tourists are satisfied with a travel product, then they will purchase the product again and there is a better chance that they will recommend it to others (see, for example, Kozak, 2001b; Tian-Cole & Cromption, 2003). Therefore, the issue of tourism product development is worth further investigation.

3.6 TSC coordination

Tourism is a coordination-intensive industry in which different service products (transportation, accommodation, excursions, and so on) are bundled together to form a final

tourism product. Coordination is a pattern of decision making and communication among a set of interrelated players who perform tasks to achieve goals such as maximizing their utilities or the overall profit of the supply chain (Malone, 1987). It requires that each actor within a supply chain perform its task by considering the impact of its actions on the other players. Researchers generally agree that through coordination, redundant activities and repetitive efforts can be reduced to achieve a sustainable and competitive supply chain. For example, many studies of manufacturing supply chains (e.g., Jeuland & Shugan, 1983; Parlar & Wang, 1994; Weng, 1995; Corbett & de Groote, 2000; Chen *et al.*, 2001) show that coordination can result in improved performance and greater profitability for the entire supply chain and its participants.

To maintain a competitive advantage over equally efficient rivals, many large tourism firms have already adopted supply chain coordination strategies (Sinclair & Stabler, 1997; Buhalis & Laws, 2001). Supply chain coordination can take a variety of forms, ranging from full or partial integration of business processes to contractual arrangements between individual firms, either horizontally or vertically. In the context of TSC, coordination occurs between service providers such as hotels and airlines, and tour operators and travel agencies, within the same echelon and/or among different echelons. For example, major European tour operators are highly vertically integrated with airlines, hotels, and other travel intermediaries (Theuvsen, 2004). The existing research on TSC coordination reveals that much of the effort has been directed toward full integration. For instance, Gomez and Sinclair (1991) examine the vertical integration and contractual relationships between tourism enterprises in different sectors of TSCs in the UK and Spain through interviews with participants of the major firms in the TSCs. Lafferty and Fossen (2001) discuss both horizontal integration within service sectors and vertical integration between them, particularly in relation to airlines and hotels. Theuvsen (2004) conducts an empirical analysis of the vertical integration of European travel

operators and points out that coordination among the operators could greatly benefit the tourism industry.

Unlike their counterparts in manufacturing supply chains, TSC players are heterogeneous organizations that often have conflicting objectives. In this case, full vertical integration is the most apparent and efficient way to achieve coordination. Nevertheless, as Simchi-Levi *et al*. (2003) point out, achieving full integration in supply chains is never easy. In addition, full integration in TSCs is normally associated with increased fixed costs and reduced flexibility in meeting market changes (Gomez & Sinclair, 1991; Sinclair & Stabler, 1997). Coordination in the form of contractual arrangements between individual firms in a TSC provides a new research opportunity.

3.7 Information technology

The salient feature of tourism products is that they usually cannot be examined prior to purchase. Tourists have to travel to the destinations where the tourism products are produced, which means tourist purchase decisions depend upon the presentation and interpretation of these products. Thus, information is "the life-blood of the travel industry" (Sheldon, 1994), which holds together activities within the tourism supply chain in terms of both inter-firm links and tourism product distributions. It is hardly surprising that since its emergence, information technology (IT) has played a significant role in the tourism industry. Developments such as computer reservation systems (CRSs), global distribution systems (GDSs), the World Wide Web, and the Internet have transformed the ways in which tourists travel and tourism firms operate (Bennett, 1993; Buhalis, 2003; Buhalis & Main, 1998; Connolly *et al*., 1998; Emmer *et al*., 1993; Klein, 2002; Lu & Lu, 2004; O'Connor, 1999; Prideaux, 2001). Buhalis (1998) provides a framework for the utilization of IT in tourism by adopting a strategic perspective. Bahaire and Elliott-White (1999) examine the progress that tourism organizations have made toward the application of geographical information systems (GISs) and their integration with sustainable development policies in the UK. Frew (2000)

explores the interaction of IT with tourism and provides a research framework to characterize the utilization of IT in the tourism industry. O'Connor and Murphy (2004) review recent research on information technology in the hospitality industry. More recently, Buhalis and Law (2008) comprehensively review and analyze the published studies in the context of Internet applications to tourism over the past 20 years.

In addition to transforming business operations, IT can also enhance the coordination of activities regionally, nationally, and globally, thereby creating new opportunities for tourism businesses and enhancing their competitive advantage (Porter & Millar, 1985). As the key driving force for moving material management to supply chain management, IT is found to be an effective means of promoting collaboration between supply chain members and enhancing supply chain efficiency through providing real-time information regarding product availability, inventory levels, shipment status, and production requirements (Radstaak & Ketelaar, 1998). It allows upstream TSC suppliers, that is, airlines and hotels, to monitor, manage, and control their capacities through communicating with intermediaries, that is, tour operators and travel agencies, and tourists. For example, authorized tour operators can access a hotel chain's intranet to see the room rates and availability for their customers. The transparency and communication achieved through IT reduce unit operating costs and enhance firm competitiveness, efficiency, flexibility, and cooperation throughout the entire TSC.

Although the literature has been dominated by investigations into how to effectively apply IT to tourism organizations, there is gradually growing interest in the importance and necessity of IT usage in TSCs. Go and Williams (1993) discuss the changes in the tourism channel system in terms of demand and supply and the ways in which IT can affect and market tourism distribution channels. O'Connor, Buhalis, and Frew (2001) examine the effect of changes in IT on tourism distribution channels and highlight the key areas of concern for tourism suppliers. The impacts of the Internet (Wynee *et al*., 2001) and computer reservation

systems (Duliba & Kauffman, 2001; Alamdari, 2002) on tourism distribution channels have also been discussed. Recent research on IT emphasizes its vast potential to facilitate collaborative planning and forecasting among supply chain partners by sharing information on demand forecasts and production schedules and to dictate supply chain activities (Karoway, 1997). However, to the best of our knowledge, little research has been done in the tourism context except for that of Song, Zhang, and Witt (2008).

4 Theoretical research framework

TSCM is a novel management topic in the tourism industry. Figure 2 depicts a theoretical framework for TSCM research. This framework is developed to guide research efforts and provide insights for managerial practice. The theoretical support for the framework is offered below. Because of space limitations, detailed analysis of the relevant literature is omitted. Instead, a brief taxonomy of the literature is given in Table 1.

(Insert Figure 2 and Table 1 about here)

4.1 Objectives of TSCM

Goal setting is the first step of TSCM. To set goals, the major driving forces (objectives) behind TSC linkages need to be identified. These drivers can include, but are not limited to, tourist satisfaction, tourism sustainability, monetary value, demand uncertainty, and inventory reduction.

The ultimate goal of a TSC is tourist satisfaction, or more generally, customer satisfaction. Tourist satisfaction is the degree to which tourists are satisfied with the tourism products and services received, and can be examined from two perspectives. One is the overall satisfaction with the tourism product and the other is the level of satisfaction with individual service attributes of a specific tourism service encountered. However, tourists normally see a tourism product as a combination of a number of different service components; therefore, the service attributes of a tourism product/service, such as those defined by the SERVQUAL model (Parasuraman, Zeithawl, & Berry, 1988) are all linked and depend upon

one another. If the service attributes of a particular tourism product component such as the airline service fails to satisfy tourists, the overall tourist satisfaction level is negatively affected.

The tourism industry relies heavily on environmental resources, which are freely available and potentially subject to degradation through excessive use. An associated research area is the increasingly important status accorded to the sustainable development of tourism. The central problem is to find an equilibrium point between the use and preservation of resources to maintain sustainable tourism development in the destination.

Monetary value is defined as the ratio of tourist revenue to the total cost incurred in the development of the tourism product. It can be enhanced either through increases in sales revenue, market share, and labor productivity or through reduction in expenditures and operational costs. Because such value directly reflects the cost efficiency and profitability of a supply chain, it is the most widely used objective of supply chain management. Monetary value is of special importance for a TSC. As noted, tourism products tend to be perishable and have relatively high fixed costs that are paid in advance to build up a fixed level of capacity. Therefore, increasing monetary value through revenue generation and cost reduction is a key problem of TSCM.

Uncertainty about future demand is one of the most significant characteristics of the tourism industry (Gomez & Sinclair, 1991). It is beyond dispute that demand uncertainty can bring significant monetary loss for the business entities that are involved in a TSC if it is not managed properly. Demand uncertainty is also related to inventory problems in a TSC. As the global economy grows and more and more options exist for tourists, the uncertainty and complexity of the tourism marketplace will increase. Under conditions of increased uncertainty and the lack of alternatives, organizations in the TSC are more likely to resort to collective action to stabilize their environment.

4.2 Network structure

Understanding of the network configuration of a TSC is a prerequisite for successfully analyzing and managing the TSC.

(Insert Figure 3 about here)

Most of the studies listed in Table 1 propose a TSC structure. Among them, the one developed by Page (2003) is the most representative. On the basis of Page's work, we propose a more general TSC network within a destination (see Figure 3). The downstream end includes tourists from the target market. Travel agents are the retail branches of tourism products dealing with tourists and tour operators. Travel agents and tour operators can be the same or separate business entities. Tour operators have enormous influence over all the activities involved in the TSC. They buy individual travel services (such as transport and accommodation) from their suppliers (such as carriers and hotels) and assemble them into holiday packages, which are sold to the public directly or through travel agents (Ujma, 2001). Tour operators can oversee the entire holiday experience so that they normally have first-hand knowledge of the behavior of tourists during their holiday in the destinations.

The first tier of the upstream end of a TSC involves direct suppliers that directly supply tourism services to intermediaries. Typical direct suppliers include theme parks, shopping centers, hotels, bars and restaurants, handicraft shops, and transportation operators. A more complex TSC may also include second-tier suppliers that supply services or products to first-tier suppliers. As noted, non-business entities are also involved in the TSC, one of which is the natural environment or scenery. Another typical player in the TSC is the local government or business association that facilitates public and private sector collaboration through policy intervention.

In addition to the identification of the TSC members, other issues such as what are the power relationships and the business links among them the should also be considered when analyzing the TSC structure.

4.3 Decision variables

TSCM decisions span a large spectrum of an organization's activities, and can be strategic, tactical, or operational.

- Strategic decisions have a long-lasting effect on the organization. They include decisions regarding the tourism taxation policies of the local government, capital investment in the tourism industry, capacity building of tourism facilities, and the entry or deterrence of potential tourism businesses.
- Tactical decisions consist of medium-term (quarterly or annual) actions of tourism organizations such as purchasing and production decisions, pricing strategies, product differentiation, advertising, and inventory policies.
- Operational decisions mainly concern weekly or daily endeavors of tourism organizations in tour scheduling, route planning, and issuing quotations on tour products.

4.4 Performance measurement

Effective performance measurement is essential for TSCM. Not only does it influence the activities throughout the chain, it also evaluates the efforts made by TSC members. Given the inherent complexity of a TSC, selecting appropriate performance measures for TSC analysis is particularly critical. Despite the wealth of literature on performance measurement of manufacturing supply chains, little attention has been paid to it in the tourism industry. Most of the relevant literature focuses mainly on the hotel sector (Yilmaz & Bititci, 2006). In their conceptual study, Yilmaz and Bititci (2006) compare the performance measures of the manufacturing and tourism industries from a TSC perspective, and propose a general framework for TSC performance measurement.

Performance measures that have been used in supply chain analysis can be categorized as follows.

Financial Performance	*Operational Performance*	*Overall Supply Chain Performance*
– Total cost	– Customer response time	– Customer satisfaction
– Distribution cost	– Manufacturing lead time	– Supply chain flexibility
– Manufacturing cost	– Product quality	

– Inventory cost – Return on investment (ROI) – Total revenue – Profit	– Product availability	

It is clear that the overall performance measurement of the supply chain system involves not just financial or operational measurement. Given the complexity of assessing a system's flexibility, various frameworks have been proposed (Chen & Paulraj, 2004). As in other service industries, customer satisfaction (tourist satisfaction, TS) is one of the most important performance measures for the TSC. Tourism researchers have been interested in measuring both overall TS with a particular destination (e.g., Alegre & Cladera, 2006; Kozak, 2001a; Yu & Goulden, 2006) and TS with specific service sectors, such as accommodation (Saleh & Ryan, 1992), restaurants (Chadee & Mattsson, 1996), attractions (Dorfman, 1979), travel agencies (LeBlanc, 1992), package tours (Pizam & Milman, 1993), and retail shops (Reisinger & Turner, 2002).

4.5 Methodology

The solution methodologies that can be used to address TSCM problems can be divided into the following areas:

1. Conceptual studies – research that analyzes TSCs in an attempt to define, describe, and develop methods for TSCM, including frameworks, taxonomies, and literature reviews.
2. Case-oriented empirical studies – research that works with specific firms and uses the data collected by the researchers or from other qualified sources to analyze TSC issues.
3. Quantitative studies – research that attempts to develop methods for TSCM using quantifiable models (including optimization, simulation, stochastic models, and heuristics).

Most of the research in the area of TSCM uses the first and second methodologies listed above, whereas quantitative studies are very limited (see Table 1). However, in the existing studies of SCM in other industries, quantitative methods are those most widely used (See Min and Zhou (2002) and Ganeshan *et al*. (1999) for comprehensive reviews of the

research methodologies in the SCM research). The lack of quantitative studies in the TSCM research may be due to the inherent complexity of TSCs and difficulty in establishing quantifiable standards. It is worth mentioning one quantitative method, namely, game theory (GT), which is able to account for the complexity of TSCM problems. GT has been widely used to understand the decision making in economic and social situations in which the outcomes depend upon the decisions of two or more decision makers. Many researchers have used GT to study supply chain problems. Cachon and Netessine (2004) provide a comprehensive overview of the application of GT to SCM problems. Research on TSCM using GT has begun to appear recently in the tourism literature and includes the studies of Chung (2000), Wei (2004, 2005), Yang, Huang, Song, and Liang (2008), Yang, Huang, and Song (2008), and Song and Yang (2008).

5 Opportunities for future investigation

The emerging literature on TSCM has largely concentrated on tourism distribution channels, with a particular focus on the roles of intermediaries (Buhalis, 2001; Buhalis & Laws, 2001; Ujma, 2001; Pearce & Schott, 2005) rather than on the whole TSC, which consists of not only intermediaries but also various service providers including governments, tourists, and the natural environment. Articles on TSC from an integrated perspective are currently very limited (see Table 1). Although rigorous development of TSCM research is underway, it is evident that more in-depth analysis is required, and further examination of the issues that are critical to TSCs is necessary. In this section, we propose some possible future research directions for TSCM, which include collaborative TSC planning and forecasting, TSC coordination, TSC dynamics, and integrated product and TSC design. These directions are all in agreement with the TSCM philosophy toward coordination across organizations through a TSC.

5.1 Collaborative TSC planning and forecasting

Collaborative planning and forecasting is an approach facilitated by SCM concepts. It is based on cooperation and information sharing among the links in the chain. Existing non-tourism-related supply chain literature shows that collaborative supply chain planning and forecasting has become popular in supply chain demand management. For example, retailers have initiated collaborative agreements with their supply chain partners to establish collaborative planning and forecasting processes (Li, 2007). However, to the best of our knowledge, this topic has not yet been considered in the TSC literature.

Most studies of tourism demand forecasting have been based on statistical methods and rely on the availability and quality of historical data. Current knowledge about special events or information about marketing activities of TSC partners is difficult to find for inclusion in statistical models. Two benefits that can be expected from collaborative TSC planning and forecasting are a reduced reliance on historical records and enhanced information sharing among TSC partners. The focus of collaborative TSC planning and forecasting is therefore not merely on the improvement of forecast accuracy but also on breaking down functional silos and smoothing the information flow along the TSC to benefit the entire TSC.

However, achieving collaborative TSC planning and forecasting is not an easy task. It requires a variety of participants from various echelons of the chain to work together. The first challenge is to establish a trusting relationship among TSC partners striving to help each other. The design of the forecasting process and the steps for effective implementation of the process constitute a challenging task. Last but not the least is the technical side, such as the establishment of forecasting support systems to facilitate the forecasting process and information sharing among the players within a TSC.

5.2 TSC coordination

Coordination is the opposite of an arms-length relationship in which both parties in a deal act in their own self interest and make their own decisions without any consideration of

the impacts of the decisions on the other party. Coordination is also different from the fully integrated relationship in which both parties in a deal are integrated as one entity with common objectives. In general, coordination can be regarded as a decision-making strategy of firms that perform tasks to achieve supply chain goals (e.g., maximizing supply chain profit) through contractual arrangements.

In the past two decades, various empirical tourism studies have been conducted to investigate the integration of businesses within a TSC (e.g. Lafferty & Fossen, 2001; Theuvsen, 2004). Leaving aside the issue that integration in a real TSC is not easy, full integration of tourism businesses leads to the problem of increased fixed costs and reduced flexibility (Gomez & Sinclair, 1991; Sinclair & Stabler, 1997). Moreover, TSC participants are often autonomous, and independent enterprises frequently having conflicting objectives. Coordination taking the form of contractual relationships among individual firms in TSC provides a new opportunity for further research.

As mentioned previously, TSC coordination can take a variety of forms, ranging from full or partial integration of business processes to contractual arrangements between or among individual firms, either horizontally or vertically. Therefore, various studies can be conducted to investigate different programs of TSC coordination. When we look at studies of supply chains in the manufacturing industry, it is found that coordination schemes have been extensively studied. It would also be very interesting and practical to investigate how different types of coordination schemes can help improve the performance of individual enterprises and the entire TSC in different market situations.

5.3 TSC dynamics

Supply chains are dynamic systems that evolve over time. One well-known phenomenon is the fluctuation and amplification of demand from the downstream to the upstream channel of a supply chain (Forrester, 1961), which is called the bullwhip effect (Lee *et al*., 1997). It is mainly due to the lack of information sharing among enterprises (Sterman,

1989; Simchi-Levi *et al*., 2003). Information sharing can improve interactions among enterprises in supply chains and therefore facilitate successful coordination among supply chain participants. Given that tourism businesses are dynamic activities characterized by changing customer demand, and tour operators have a far greater power to influence the activities throughout the TSC and direct demand than their counterparts in other industries, the bullwhip effect may be more severe in TSCs. Therefore, the strategy of information sharing in TSCs is worthy of investigation.

TSC dynamics can also be caused by evolving TSC relationships, which, as discussed in Section 3.2, are a very important phenomenon in the tourism industry. A better understanding of such relationships in TSCs would be very helpful for tourism decision makers to achieve efficient and effective TSCM. The research reviewed in Section 3.2 (i.e., Accinelli *et al*., 2006b; Bimonte & Punzo, 2007) has already investigated the evolution passes of the interactions between tourists and residents in a destination. More in-depth analysis of TSC dynamics is necessary in the future.

5.4 Integrated product and TSC design

In today's buyers' market, many industries face the challenges of providing sufficient product variety to meet diverse customer requirements and responding quickly to dynamic customer needs while maintaining economies of scale and scope within the service provision process. This new paradigm was termed by Stan Davis "mass customization" in his book entitled *Future Perfect* (Davis, 1987).

To shorten product delivery times and achieve a balance between product customization and an economy of scale, many firms are pursuing specific product design strategies. The most popular product design strategy in the manufacturing industry has been the utilization of the product family and modular product architecture. A product family is a range of products that share a collection of common elements and architecture. The positive impacts of product commonality have been widely demonstrated in a number of studies. For

example, it has led to simplified planning and scheduling (Berry *et al*. 1992), lower setup and holding costs (Collier, 1982), lower safety-stock levels (Baker, 1985), and order quantity economies (Gerchak & Henig, 1989). However, utilizing commonality often requires the company to bear the additional costs involved in substitutions and thus reduces profitability (Krishnan & Gupta 2001), or reduces the range of customer choices (Robertson & Ulrich, 1998). Modular product architecture, however, retains an optimum number of options for a module in configuring the necessary product variety without leading to such problems as increased supply chain complexity and high inventory levels, which are often associated with product proliferation. In terms of TSCs, the products normally consist of different service components, and the concepts of product families and modular product design are suitable for tourism product development.

Extensive research has shown that coordination among supply chain partners in the early stage of product development benefits the successful development of new products in the era of mass customization (Monczka *et al*., 1997; Ragatz *et al*., 1997, 2002; Petersen *et al*., 2005). Recent research also shows the advantages of optimizing the product design, process design, and supply decisions in an integrated and simultaneous manner (Rungtusanatham & Forza, 2005; Huang, Zhang, & Liang, 2005). Supplier integration has been well documented in the manufacturing industry. In today's competitive environment, the sheer number of tourism service suppliers provides abundant input possibilities for tour operators to assemble tour packages, and it is believed that effective integration of suppliers with tourism product development processes could increase the competitive edge of tour operators as well as the TSC as a whole.

6 Concluding remarks

This paper extends the SCM research by focusing on the tourism industry from the systematic perspective of tourism supply chains. TSCM emerges as an important area for future tourism research, attracting increasing attention from both the academic and

practitioner communities. The paper has set out a new agenda for TSCM research. Under the proposed conceptual framework, the relationships among and performance of individual tourism firms in a tourism supply chain can be investigated based on different cooperation, coordination, and competition strategies and different power and channel structures and market demand functions. The decision dynamics of enterprises and the supply chain can be studied at the strategic, operational, and tactical levels.

References

Accinelli, E., Brida, J. G., & Carrera, E. (2006a). A good policy of sustainable tourism. Retrieved August 2, 2007, from http://ssrn.com/abstract=901205.

Accinelli, E., Brida, J. G., Carrera, E., & Punzo, L. F. (2006b). Emergence of long run behaviours in a game theoretic setting with host and guest populations: Residents and tourists. International Tourism Conference, November 20-26, 2006, Antalya, Turkey.

Agarwal, S., Ball, R., Shaw, G., & Williams, A. M. (2000). The geography of tourism production: Uneven disciplinary development? *Tourism Geographies, 2* (3), 241-263.

Alamdari, F. (2002). Regional development in airlines and travel agents relationship. *Journal of Air Transport Management, 8* (5), 339-348.

Alegre, J., & Cladera, M. (2006). Repeat visitation in mature sun and sand holiday destinations. *Journal of Travel Research, 44* (1), 288-297.

Alford, P. (2005). A framework for mapping and evaluating business process costs in the tourism industry supply chain. In A. J. Frew (Ed.), *Information and communication technologies in tourism 2005*. Vienna: Springer Verlag.

Appelman, J., & Go, F. (2001). Transforming relationships between airlines and travel agencies: Challenges for distribution and the regulatory framework. In D. Buhalis, & E. Laws (Eds.), *Tourism distribution channels: Practices, issues and transformations* (pp. 202-212). London: Continuum International Publishing Group.

Bahaire, T., & Elliott-White, M. (1999). The application of geographical information system (GIS) in sustainable tourism planning: A review. *Journal of Sustainable Tourism, 7* (2), 159-174.

Baker, K. R. (1985). Safety stocks and commonality. *Journal of Operations Management, 6* (1), 13-22.

Baker, K., & Collier, D. (1999). A comprehensive revenue analysis of hotel yield management heuristics. *Decision Sciences, 30* (1), 239-63.

Baloglu, S., & Mangaloglu, M. (2001). Tourism destination images of Turkey, Egypt, Greece, and Italy as perceived by US-based tour operators and travel agents. *Tourism*

Management, 22 (1), 1-9.

Bastakis, C., Buhalis, D., & Butler, R. (2004). The perception of small and medium sized tourism accommodation providers on the impacts of the tour operators' power in Eastern Mediterranean. *Tourism Management, 25* (2), 151-170.

Baum, T., & Mudambi, R. (1994). A Ricardian analysis of the fully inclusive tour industry. *Service Industries Journal, 14* (1), 85-93.

Belobaba, P. P. (1987). Airline yield management: An overview of seat inventory control. *Operations Research, 21* (2), 63-73.

Belobaba, P. P. (1989). Application of a probabilistic decision model to airline seat inventory control. *Operations Research, 37* (2), 183-97.

Bennett, M. M. (1993). Information technology and travel agency: A customer service perspective. *Tourism Management, 14* (4), 259-266.

Berry, W. L., Tallon, W. J., & Boe, W. J. (1992), Product structure analysis for the master scheduling of assemble-to-order products. *International Journal of Operations & Production Management, 12* (11), 24-41.

Bimonte, S., & Punzo, L. F. (2007). The evolutionary game between tourist and resident populations and tourism carrying capacity. *International Journal of Technology and Globalisation, 3* (1), 73-87.

Bitran, G. R., & Mondschein, S. V. (1995). An application of yield management to the hotel industry considering multiple days stays. *Operations Research, 43* (3), 427-43.

Bramwell, B. (1998). User satisfaction and product development in urban tourism. *Tourism Management, 19* (1), 35-47.

Buhalis, D. (1998). Strategic use of information technologies in the tourism industry. *Tourism Management, 19* (5), 409-421.

Buhalis, D. (2000). Relationships in the distribution channel of tourism: Conflicts between hoteliers and tour operators in the Mediterranean region. *International Journal of Hospitality and Tourism Administrative, 1* (1), 113-139.

Buhalis, D. (2001). Tourism distribution channels: Practices and processes. In D. Buhalis, & E. Laws (Eds.), *Tourism distribution channels: Practices, issues and transformations*. London: Continuum International Publishing Group.

Buhalis, D. (2003). *eTourism: Information technology for strategic tourism management*. London: Pearson (Financial Times/Prentice-Hall).

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet – The state of eTourism research. *Tourism Management, 29* (4), 609-623.

Buhalis, D., & Laws, E. (2001). *Tourism distribution channels: Practices, issues and transformations*. London: Continuum International Publishing Group.

Buhalis, D., & Main, H. (1998). Information technology in peripheral small and medium

hopitality enterprises: Strategic analysis and critical factors. *International Journal of Contemporary Hospitality Management, 10* (5), 198-202.

Caccomo, J.-L., & Solonandrasana, B. (2001). Tourism activities and price differences: Imperfect information and asymmetric competition. The 28th Annual Conference of the European Association for Research in Industrial Economics, August 30-September 2, 2001, Dublin, Ireland.

Cachon, G., & Netessine, S. (2004). Game theory in supply chain analysis. In D. Simchi-Levi, S. D. Wu, & M. Shen (Eds.), *Supply chain analysis in the e-business era*. USA: Kluwer Academic Publishers.

Candela, G., & Cellini, R. (2006). Investment in tourism market: A dynamic model of differentiated oligopoly. *Environmental & Resource Economics, 35*, 41-58.

Carey, S., Gountas, Y., & Gilbert, D. (1997). Tour operators and destination sustainability. *Tourism Management, 18* (7), 425-431.

Chadee, D., & Mattsson, J. (1996). An empirical assessment of customer satisfaction in tourism. *The Service Industries Journal, 16* (3), 305-320.

Chen, F., Federgruen, A., & Zheng, Y. (2001). Coordination mechanisms for a distribution system with one supplier and multiple retailers. *Management Science, 47* (5), 693-708.

Chen, I. J., & Paulraj, A. (2004). Understanding supply chain management: Critical research and a theoretical framework. *International Journal of Production Research, 42* (1), 131-163.

Christopher, M. (1992). *Logistics and Supply Chain Management*. London: Pitman.

Chung, K. Y. (2000). Hotel room rate pricing strategy for market share in oligopolistic competition: Eight-year longitudinal study of super deluxe hotels in Seoul. *Tourism Management, 21* (2), 135-145.

Clark, T. H., Croson, D. C., & Schiano, W. T. (2001). A hierarchical model of supply-chain integration: Information sharing and operational interdependence in the US grocery channel. *Information Technology and Management, 2* (3), 261-288.

Cobanoglu, C., Corbaci, K., Moreo, P. J., & Ekinci, K. (2003). A comparative study of the importance of hotel selection components by Turkish business travelers. *International Journal of Hospitality and Tourism Administration, 4* (1), 1-22.

Collier, D.A. (1982). Aggregate safety stock levels and component part commonality. *Management Science, 28* (11), 1296-1303.

Connolly, D., Olsen, M., & Moore, R. (1998). The Internet as a distribution channel. *Cornell Hotel and Restaurant Administration Quarterly, 39* (4), 42-54.

Cooper, M. C., Lambert, D. M., & Pagh, J. D. (1997). Supply chain management: more than a new name for logistics. *International Journal of Logistics Management, 8*, 1-13.

Corbett, C., & de Groote, X. (2000). A supplier's optimal quantity discount policy under asymmetric information. *Management Science, 46* (3), 444-450.

Cox, A. (1997). *Business Success*. Midsomer Norton: Earlsgate.

Curtin, S., & Busby, G. (1999). Sustainable destination development: The tour operator perspective. *International Journal of Tourism Research, 1* (2), 135-147.

Davis, S.M. (1987). *Future perfect*. Reading, MA: Addison-Wesley.

Dorfman, P.W. (1979). Measurement and meaning of recreation satisfaction: A case study in camping. *Environment and Behavior, 11*, 483-510.

Duffy, R., & Fearne, A. (2004). Partnerships and alliances in UK supermarket supply networks. In M. A. Bourlarkis, & P. W. Weightman (Eds.), *Food supply chain management*. Oxford: Blackwell.

Duliba, K. A., & Kauffman, R.J. (2001). Appropriating value from computerized reservation system ownership in the airline industry. *Organization Science, 12* (6), 702-28.

Ellram, L. M., LaLonde, B. J., & Weber, M. M. (1989). Retail logistics. *International Journal of Distribution and Materials Management, 19* (12), 29-39.

Emmer, R. M., Tauck, C., Wilkinson, S., & Moore, R. G. (1993). Marketing hotels using global distribution systems. *Cornell Hotel and Restaurant Administration Quarterly, 34* (6), 80-89.

Fearne, A. (2000). Building effective partnerships in the meat supply chain: Lessons from the UK. *Canadian Journal of Agricultural Economics, 46* (4), 491-518.

Fernie, J. (1995). International comparisons of supply chain management in grocery retailing. *The Service Industries Journal, 15* (4), 134-147.

Fisher, M. L. (1997). What is the right supply chain for your product? *Harvard Business Review, 75*, 105-116.

Forrester, J. W. (1961). *Industrial dynamics*. Cambridge, MA: Massachusetts Institute of Technology Press.

Frew, A. J. (2000). Information and communications technology research in the travel and tourism domain: Perspective and direction. *Journal of Travel Research, 39* (2), 136-145.

Ganeshan, R., Jack, E., Magazine, M. J., & Stephens, P. (1999). A taxonomic review of supply chain management research. In S. Tayur, R. Ganeshan, & M. Magazine, *Quantitative models for supply chain management* (pp. 840-879). Boston, MA: Kluwer Academic Publishers.

García, D., & Tugores, M. (2006). Optimal choice of quality in hotel services. *Annals of Tourism Research, 33* (2), 456-469.

Garcia-Falcon, J. M., & Medina-Munoz, D. (1999). The relationship between hotel companies and travel agencies: An empirical assessment of the United States market. *Service Industries Journal, 19* (4), 102-122.

Gerchak, Y., & Henig, M. (1989). Component commonality in assemble-to-order systems: Models and properties. *Naval Research Logistics, 36*, 61-68.

Gimenez, C., & Ventura E. (2003). Supply chain management as a competitive advantage in the Spanish grocery sector. *International Journal of Logistics Management*, *14* (1), 77-88.

Go, F. M., & Williams, A. P. (1993). Competing and cooperating in the changing tourism channel system. *Journal of Travel & Tourism Marketing, 2* (2-3), 229-248.

Gomez, V. B., & Sinclair, M. T. (1991). Integration in the tourism industry: A case study approach. In M. T. Sinclair, & M. J. Stabler (Eds.), *The tourism industry: An international analysis* (pp. 67-90). Wallingford, UK: CAB International.

Hadjinicola, G. C., & Panayi, C. (1997). The overbooking problem in hotels with multiple tour-operators. *International Journal of Operations & Production Management*, *17* (9), 874-885.

Hakansson, H., & Snehota, I. (1995). *Developing Relationships in Business Networks*. London: Routledge.

Han, D., Kwon, I.-W. G., Bae, M., & Sung, H. (2002). Supply chain integration in developing countries for foreign retailers in Korea: Wal-Mart experience. *Computers & Industrial Engineering*, *43* (1-2), 111-121.

Han, Q., Dellaert, B. G. C., Van Raaij, W. F., & Timmermans, H. J. P. (2004). Supporting tourist activity planning decisions from an urban tourism management perspective. *Tourism Analysis*, *8*, 153-157.

Harland, C. (1996). Supply network strategies the case of health supplies. *European Journal of Purchasing & Supply Management*, *2* (4), 183-192.

Harland, C. M., Lamming, R. C., & Cousins, P. D. (1999). Developing the concept of supply strategy. *International Journal of Operations and Production Management*, *19*, 650-673.

Helper, S. R. (1991). How much has really changed between US automakers and their suppliers. *Sloan Management Review*, *Summer*, 15-28.

Hill, C. A., & Scudder, G. D. (2002). The use of electronic data interchange for supply chain coordination in the food industry. *Journal of Operations Management*, *20*, 375-387.

Hines, P. (1994). *Creating World Class Suppliers: Unlocking Mutual Competitive Advantage.* London: Pitman.

Holder, J. S. (1991). Tourism, the world and the Caribbean. *Tourism Management*, *12* (4), 291-300.

Hornibrook, S. A., & Fearne, A. (2002). Vertical co-ordination as risk management strategy – A case study of a retail chain in the UK beef industry. *Journal of Farm Management*, *11* (6), 194-207.

Houlihan, J. B. (1985). International supply chain management. *International Journal of Physical Distribution & Materials Management*, *15*, 22-38.

Huang, G. Q., Zhang, X. Y., & Liang, L. (2005). Towards integrated optimal configuration of platform products, manufacturing processes, and supply chains. *Journal of Operations*

Management, *23*, 267-290.

Hugos, M., & Thomas, C. (2006). *Supply chain management in the retail industry*. New Jersey, USA: John Wiley & Sons, Inc.

Jeuland, A.P., & Shugan, S.M. (1983). Managing channel profits. *Marketing Science*, *2*, 239-272.

Kämäräinen, V., & Punakivi, M. (2002). Developing cost-effective operations for the e-grocery supply chain. *International Journal of Logistics: Research and Applications, 5* (3), 285-298.

Karamustafa, K. (2000). Marketing-channel relationships: Turkey's resort purveyors' interactions with international tour operators. *Cornell Hotel and Restaurant Administration Quarterly, 41* (4), 21-31.

Karoway, C. (1997) Superior supply chains pack plenty of byte. *Purchasing Technology, 8,* 32-35.

Kaukal, M., Höpken, W., & Werthner, H. (2000). An approach to enable interoperability in electronic tourism markets. *Proceeding of The 8th European Conference on Information System* (ECIS 2000), 1104-1111.

Kimes, S. E. (1989). Yield management: A tool for capacity-constrained service firms. *Journal of Operations Management, 8* (4), 348-63.

Klein, S. (2002). Web impact on the distribution structure for flight tickets. In K. W. Wöber, A. J. Frew, & M. Hitz (Eds.), *Information and communication technologies in tourism 2002* (pp. 219-228). New York: Springer.

Klemm, M., & Parkinson, L. (2001). UK tour operator strategies: Causes and consequences. *International Journal of Tourism Research, 3* (5), 367-375.

Kozak, M. (2001a). Comparative assessment of tourist satisfaction with destinations across two nationalities. *Tourism Management, 22* (4), 391-401.

Kozak, M. (2001b). Repeaters' behaviour at two distinct destinations. *Annals of Tourism Research, 28* (3), 784-807.

Krishnan, V., & Gupta, S. (2001). Appropriateness and impact of platform-based product development. *Management Science, 47* (1), 52-68.

Lafferty, G., & Fossen A.v. (2001). Integrating the tourism industry: Problems and strategies. *Tourism Management, 22* (1), 11-19.

Lambert, C. U., Lambert, J. M., & Cullen, T. P. (1989). The overbooking question: A simulation. *The Cornell Hotel and Restaurant Administration Quarterly, 29*, 15-20.

Lambert, D., Stock, J., & Ellram, L. (1998). *Fundamentals of Logistics Management*. Boston, MA: Irwin/McGraw-Hill.

LeBlanc, G. (1992). Factors affecting customer evaluation of service quality in travel agencies: An investigation of customer perceptions. *Journal of Travel Research, 30* (4), 10-16.

Lee, H., Padmanabhan, V., & Whang, S. (1997). Information distortion in a supply chain: The bullwhip effect. *Management Science, 43* (4), 546-558.

Leenders, M. R., Fearson, H. E., Flynn, A. E., & Johnson, P. F. (2002). *Purchasing and supply management*. New York: McGraw-Hill/Irwin.

Li, G., Song, H., & Witt, S. F. (2005). Recent developments in econometric modelling and forecasting. *Journal of Travel Research, 44,* 82-99.

Li, L. (2007). *Supply chain management: Concepts, techniques and practices enhancing value through collaboration*. Singapore: World Scientific.

Liberman, V., & Yechiali, U. (1978). On the hotel overbooking problem – An inventory system with stochastic cancellations. *Management Science, 24* (11), 1117-1126.

Lu, J., & Lu, Z. (2004). Development, distribution and evaluation of online tourism services in China. *Electronic Commerce Research, 4* (3), 221-239.

Malone, T. W. (1987). Modeling coordination in organizations and markets. *Management Science, 33* (10), 1317-1332.

March, R. (1997). An exploratory study of buyer-supplier relationships in international tourism: The case of Japanese wholesales and Australian suppliers. *Journal of Travel & Tourism Marketing, 6* (1), 55-68.

March, R. (2000). Buyer decision-making behavior in international tourism channels. *International Journal of Hospitality and Tourism Administration, 1* (1), 11-25.

Mazzeo, M. (2002). Product choice and oligopoly market structure. *Rand Journal of Economics, 33*, 221-242.

Medina-Muñoz, D. R., García-Falcón, J. M., & Medina-Muñoz, R. D. (2002). Building the valuable connection: Hotels and travel agents. *Cornell Hotel and Restaurant Administration Quarterly*, *43* (3), 46-52.

Medina-Muñoz, D., & García-Falcón, J. M. (2000). Successful relationships between hotels and agencies. *Annals of Tourism Research, 27* (3), 737-762.

Medina-Muñoz, R. D., Medina-Muñoz, D. R., & García-Falcón, J. M. (2003). Understanding European tour operators' control on accommodation companies: An empirical evidence. *Tourism Management, 24* (2), 135-147.

Medlik, S., & Middleton, V. T. C. (1973). Product formulation in tourism. *Tourism and Marketing, 13*.

Middleton, V. T. C. (1989). Tourist product. In S. F. Witt, & L. Moutinho (Eds.), *Tourism marketing and management handbook* (pp. 573-576). Hempel Hempstead: Prentice-Hall.

Middleton, V. T. C., & Clarke, J. (2001). *Marketing in travel and tourism*. Oxford, Boston: Elsevier.

Min, H., & Zhou, G. (2002). Supply chain modeling: Past, present and future. *Computers & Industrial Engineering, 43*, 231-249.

Monczka, R. M., Ragartz, G. L., & Handfield, R. B. (1997). Supplier integration into new product development: Preliminary results. *Advances in the Management of Organizational Quality*, *2*, 87-138.

Morgan, J., & Monczka, R. M. (1996). Supplier integration: a new level of supply chain management. *Purchasing*, *120*, 110-113.

Moynihan, J. J. (1997). Improving the healthcare supply chain using EDI. *Healthcare Financial Management*, *51* (3), 78.

Narus, J. A., & Anderson, J. C. (1995). Using teams to manage collaborative relationships in business markets. *Journal of Business-to-Business Marketing*, *2*, 17-47.

O'Connor, P., & Murphy, J. (2004). Research on information technology in the hospitality industry. *International Journal of Hospitality Management, 23* (5), 473-484.

O'Connor, P. (1999). *Electronic information distribution in tourism and hospitality*. Wallingford, UK: CAB International.

O'Connor, P., Buhalis, D., & Frew, A. J. (2001). The transformation of tourism distribution channels through information technology. In E. Laws, & D. Buhalis (Eds.), *Tourism distribution channels: Practices, issues and transformations* (pp. 332-350). London: Continuum International Publishing Group.

Osborne, M. J., & Rubinstein, A. (1994). *A course in game theory*. Cambridge, MA: Massachusetts Institute of Technology Press.

Page, S. J. (2003). *Tourism management: Managing for change*. Oxford: Butterworth-Heinemann.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64* (1), 12-40.

Parlar, M., & Wang, Q. (1994). Discounting decisions in a supplier-buyer relationship with a linear buyer's demand. *IIE Transactions, 26* (2), 34-41.

Pearce, D. G. (2007). Supplier selection in the New Zealand inbound tourism industry *Journal of Travel & Tourism Marketing, 23* (1), 57-69.

Pearce, D. G., & Schott, C. (2005). Tourism distribution channels: The visitors' perspective. *Journal of Travel Research*, *44*, 50-63.

Pearce, D. G., Tan, R., & Schott, C. (2007). Distribution channels in international markets: A comparative analysis of the distribution of New Zealand tourism in Australia, Great Britain and the USA. *Current Issues in Tourism, 10* (1), 33-60.

Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (2005), Supplier integration into new product development: Coordinating product, process and supply chain design, *Journal of Operations Management, 23* (3-4), 371-388.

Piga, C. A. G. (1999). Pigouvian taxation and sustainable development in tourism. Working paper 99/1, Christel DeHaan Tourism and Travel Research Institute, Nottingham University Business School.

Piga, C. A. G. (2003a). Pigouvian taxation in tourism. *Environmental and Resource Economics, 26*, 343-359.

Piga, C. A. G. (2003b). Territorial planning and tourism development tax. *Annals of Tourism Research, 30* (4), 886-905.

Pizam, A., & Milman, A. (1993). Predicting satisfaction among first time visitors to a destination by using the expectancy disconfirmation theory. *International Journal of Hospitality Management, 12* (2): 197-209.

Porter, M. (1980). *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

Porter, M., & Millar, V. (1985). How information gives you competitive advantage. *Harvard Business Review, 63* (4), 149-160.

Prater, E., Frazier, G. V., & Reyes, P. M. (2005). Future impacts of RFID on e-supply chains in grocery retailing. *Supply Chain Management: An International Journal, 10* (2), 134-142.

Prideaux, B. (2001). Airline distribution systems: The challenge and opportunity of the Internet. In E. Laws, & D. Buhalis (Eds.), *Tourism distribution channels: Practices, issues and transformations* (pp. 213-230). London: Continuum International Publishing Group.

Radstaak, B. G., & Ketelaar, M. H. (1998). *Worldwide logistics: The future of supply chain services*. The Hague: Holland International Distribution Council.

Ragatz, G. L., Handfield, R. B., & Petersen, K. (2002). Benefits associated with supplier integration into new product development under conditions of technology uncertainty. *Journal of Business Research, 55* (5), 389-400.

Ragatz, G. L., Handfield, R. B., & Scannell, T. V. (1997). Success factors for integrating suppliers into new product development. *Journal of Production Innovation Management, 14*, 190-202.

Reisinger, Y., & Turner, L. W. (2002). The determination of shopping satisfaction of Japanese tourists visiting Hawaii and the Gold Coast compared. *Journal of Travel Research, 41*, 167-176.

Robertson, D., & Ulrich, K. (1998). Planning for product platforms. *MIT Sloan Management Review, 39* (4), 19-31.

Rothstein, M. (1971). An airline overbooking model. *Transportation Science, 5* (2), 180-92.

Rothstein, M. (1974). Hotel overbooking as a Markovian sequential decision process. *Decision Sciences, 5*, 389-404.

Rothstein, M. (1985). OR and the airline overbooking problem. *Operations Research, 33* (2), 237-48.

Rungtusanatham, M. J., & Forza, C. (2005). Special issue on "Coordinating product design, process design, and supply chain design decisions." *Journal of Operations Management, 23* (3-4), 257-265.

Saleh, F., & Ryan, C. (1992). Client perceptions of hotels: A multi-attribute approach. *Tourism Management, 13* (2), 163-168.

Scavarda, A. J., Lustosa, L. J., & Scavarda, L. F. (2001). The tourism industry chain. *Proceedings of the Twelfth Annual Conference of the Operations Management Society* (POM 2001), March 30-April 2, 2001, Orlando FL.

Sheldon, P. (1994). Information technology and computer systems. In S. Witt, & L. Moutinho (Eds.), *Tourism marketing and management handbook* (2nd ed., pp. 126-130). London: Prentice Hall.

Shlifer, E., & Vardi, Y. (1975). An airline overbooking policy. *Transportation Science, 9* (2), 101-114.

Siau, K. (2003). Health care informatics. *IEEE Transactions on Information Technology in Biomedicine, 7* (1), 1-7.

Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2003). *Designing and managing the supply chain*. Boston, MA: Irwin McGraw-Hill.

Sinclair, M.T., & Stabler, M. (1997). *The economics of tourism*. London: Routledge.

Småros, J. (2007). Forecasting collaboration in the European grocery sector: Observations from a case study. *Journal of Operations Management, 25* (3), 702-716.

Smith, A. D., & Flanegin, F. R. (2004). E-procurement and automatic identification: Enhancing supply chain management in the healthcare industry. *International Journal of Electronic Healthcare, 1* (2), 176-198.

Smith, B. C., Leimkuhler, J. F., & Darrow, R. M. (1992). Yield management at American airlines. *Interfaces, 22* (1), 8-31.

Smith, S. L. J. (1994). The tourism product. *Annals of Tourism Research, 21* (3), 582-595.

Song, H., & Li, G. (2008). Tourism demand modelling and forecasting – A review of recent research. *Tourism Management, 29* (2), 203-220.

Song, H., & Yang, S. (2008). Price interaction between theme park and tour operators. *Tourism Economics* (In press).

Song, H., Zhang, X., & Witt, S. F. (2008). Collaborative forecasting for tourism supply chain via the Internet. Paper presented at the 18th International Symposium on Forecasting, June 22-25, 2008, Nice, France .

Sterman, J. D. (1989). Modeling managerial behavior: Misperceptions of feedback in a dynamic decision making experiment. *Management Science, 35* (3), 321-339.

Stuart, P., Pearce, D., & Weaver, A. (2005). Tourism distribution channels in peripheral regions: The case of Southland, New Zealand. *Tourism Geographies, 7* (3), 235-256.

Tan, K. C. (2001). A framework of supply chain management literature. *European Journal of Purchasing & Supply Management, 7*, 39-48.

Tapper, R., & Font, X. (2004). *Tourism supply chains: Report of a desk research project for*

the travel foundation. Retrieved September 11, 2006, from Leeds Metropolitan University, Environment Business & Development Group, http://www.lmu.ac.uk/lsif/the/Tourism-Supply-Chains.pdf.

Taylor, P. (1998). Mixed strategy pricing behaviour in the UK package tour industry. *International Journal of the Economics of Business, 5* (1), 29-46.

Tayor, P. (1996). Oligopoly or contestable markets in the UK package tour industry? *Service Industry Journal, 16* (3), 379-388.

Theuvsen, L. (2004). Vertical integration in the European package tour business. *Annals of Tourism Research, 31* (2), 475-478.

Thorelli, H. (1986). Networks: between markets and hierarchies. *Strategic Management Journal*, 7, 37-51.

Tian-Cole, S., & Cromption, J. L. (2003). A conceptualization of the relationships between service quality and visitor satisfaction, and their links to destination selection. *Leisure Studies, 22* (1), 65-80.

Tisdell, C.A. (1983) Public finance and the appropriation of gains from international tourists: Some theory with ASEAN and Australian illustrations. *Singapore Economic Review, 28* (1), 3-20.

Tsaur, S.-H., Yung, C.-Y., & Lin, J.-H. (2006). The relational behavior between wholesaler and retailer travel agencies: Evidence from Taiwan. *Journal of Hospitality & Tourism Research, 30* (3), 333-353.

Tse, A. C.-b. (2003). Disintermediation of travel agents in the hotel industry. *International Journal of Hospitality Management, 22* (4), 453-460.

Ujma, D. (2001). Distribution channels for tourism: Theory and issues. In D. Buhalis, & E. Laws (Eds.), *Tourism distribution channels: Practices, issues and transformations* (pp. 33-52). London: Continuum International Publishing Group.

UNWTO (1975). *Distribution channels*. Madrid, Spain: World Tourism Organization.

UNWTO (1992). *Guidelines: Development of national parks and protected areas for tourism*. Madrid, Spain: World Tourism Organization.

UNWTO (1994). *Global distribution systems in the tourism industry*. Madrid, Spain: World Tourism Organization.

Waller, M., Johnson, M. E., & Davis, T. (1999). Vendor-managed inventory in the retail supply chain. *Journal of Business Logistics, 20* (1), 183-203.

Weatherford, L. R., & Bodily, S. E. (1992). A taxonomy and research overview of perishable asset-revenue management: Yield management, overbooking, and pricing. *Operations Research, 40* (5), 831-44.

Weng, Z. K. (1995). Channel coordination and quantity discounts. *Management Science, 41*, 1509-1522.

White, A., & Danile, E. M. (2004). The impact of e-marketplaces on dyadic buyer-supplier

relationships: Evidence from the healthcare sector. *The Journal of Enterprise Information Management, 17* (6), 441-453.

Wie, B.-W. (2004). Open-loop and closed-loop models of dynamic oligopoly in the cruise line industry. *Asia-Pacific Journal of Operational Research, 21* (4), 517-541.

Wie, B.-W. (2005). A dynamic game model of strategic capacity investment in the cruise line industry. *Tourism Management, 26* (2), 203-217.

Witt, S. F., & Witt, C. A. (1995). Forecasting tourism demand: A review of empirical research. *International Journal of Forecasting, 11*, 447-475.

Wynee, C., Berthon, P., Pitt, L., Ewing, N., & Napoli, J. (2001). The impact of the internet on the distribution value chain – The case of the South African tourism industry. *International Marketing Review, 18* (4), 420-431.

Yang, S, Huang, G. Q., & Song, H. (2008). Game-theoretic approach to competition dynamics in tourism supply chains. *Journal of Travel Research* (In press).

Yang, S., Huang, G. Q., Song, H., & Liang, L. (2008). A game-theoretic approach to choice of profit and revenue maximization strategies in tourism supply chains for package holidays. *Journal of China Tourism Research, 4* (1) (In press).

Yilmaz, Y., & Bititci, U. S. (2006). Performance measurement in tourism: A value chain model. *International Journal of Contemporary Hospitality Management, 18* (4), 341-349.

Yu, L., & Goulden, M. (2006). A comparative analysis of international tourists' satisfaction in Mongolia. *Tourism Management, 27* (6), 1331-1342.

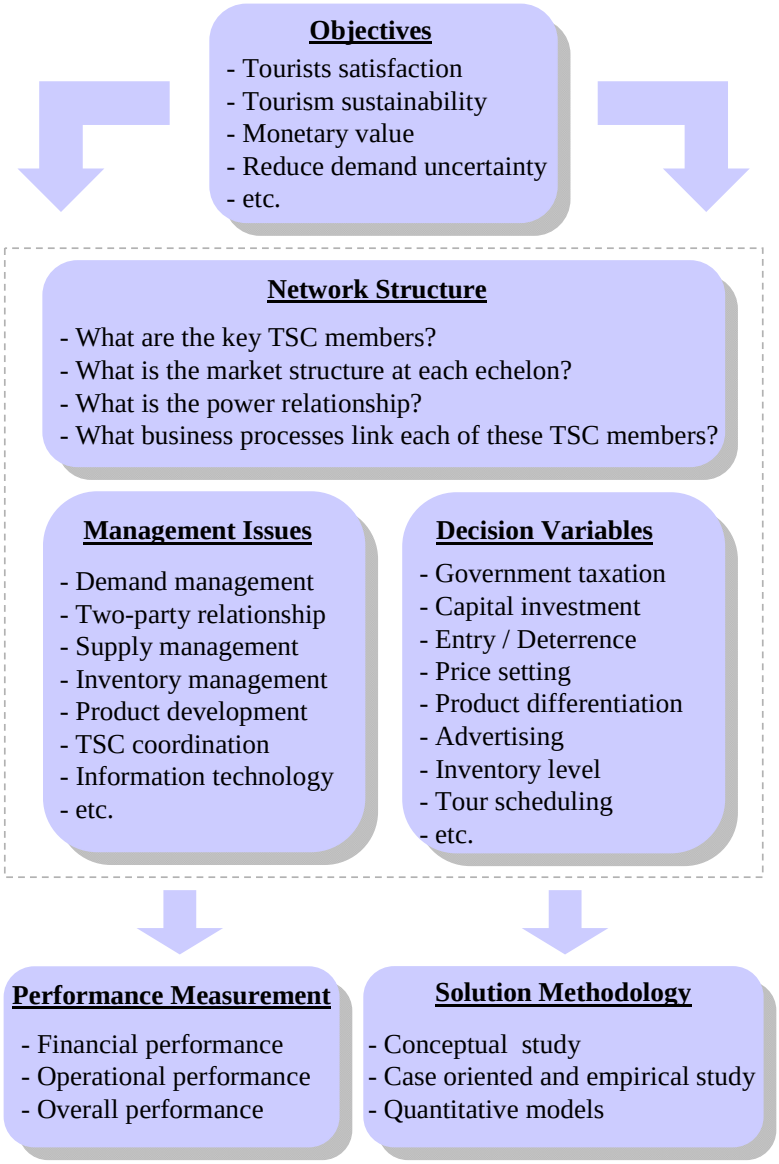

Figure 2. Theoretical framework for TSCM research.

Table 1. Review of the TSCM Literature

Study	Network structure (Region)	Main study area (TSC decision)	Methodology
Accinelli *et al*. (2006a)	Local government and tourism organizations	Two-party relationship (Tourism industry investments)	Quantitative
Accinelli *et al*. (2006b)	Tourists and residents	Two-party relationship	Conceptual
Alamdari (2002)	Airlines and travel agencies (Asia-Pacific)	Supply management	Empirical
Alford (2005)	The entire TSC (Europe)	Performance measurement	Empirical
Appelman & Go (2001)	Airlines and travel agencies	Supply management	Empirical
Balogu & Mangaloglu (2001)	Tour operators and the destinations (US)	Two-party relationship	Empirical
Bastakis *et al*. (2004)	Hotels and travel agencies (Eastern Mediterranean)	Supply management	Empirical
Baum & Mudambi (1994)	Tour operators (UK)	Two-party relationship (Pricing strategy of tour	Quantitative

		operators)	
Bimonte & Punzo (2007)	Tourists and residents	Two-party relationship	Conceptual
Buhalis (2000)	Hotels and tour operators (Mediterranean region)	Supply management	Empirical
Caccomo & Solonandrasana (2001)	Tour operators	Two-party relationship	Quantitative
Campo & Yagüe (2007)	Tour operator, travel, and tourists	Two-party relationship (Discounted pricing)	Empirical
Candela & Cellini (2006)	Excursions	Two-party relationship (The amount of investment made by tourism destinations)	Quantitative
Carey, Gountsas & Gilbert (1997)	Tour operators and the destinations (UK)	Two-party relationship	Conceptual
Chung (2000)	Accommodation suppliers	Two-party relationship (Pricing strategy of hotel rooms)	Quantitative
Cobanoglu *et al*. (2003)	Hotels and tourists (Turkey)	Supply management (Supplier selection)	Empirical
Curtin & Busby (1999)	Tour operators and the destinations (UK)	Two-party relationship	Empirical
Duliba, Kauffman & Lucas (2001)	Airlines and travel agencies	Information technology	Case study
García and Tugores (2006)	Accommodation suppliers	Two-party relationship (Choice of quality and prices in hotel services)	Quantitative
Garcia-Falcon & Medina-Munoz (1999)	Hotels and travel agencies (USA)	Two-party relationship	Empirical
Go & Williams (1993)	The entire TSC	Information technology	Conceptual
Gomez & Sinclair (1991)	Travel agencies and tour operators (UK)	TSC integration	Case study
Hadjinicola & Panayi (1997)	One hotel and multiple tour operators	Supply management (Supplier selection)	Quantitative
Han *et al*. (2004)	Tourism organizations and tourists	Two-party relationship (Tourist activity planning decisions)	Quantitative
Karamustafa (2000)	Hotels and travel agencies (Turkey)	Supply management	Empirical
Klemm & Parkinson (2001)	Tour operators and the destinations (UK)	Two-party relationship	Conceptual
Lafferty & Fossen (2001)	Hotels and airlines	TSC coordination	Case study
March (1997)	Hotels and travel agencies (Australia)	Supply management	Empirical
March (2000)	Hotels, coach companies, restaurants, and tour operators (Australia)	Supply management (Supplier selection)	Empirical
Mazzeo (2002)	Accommodation suppliers (US)	Two-party relationship (Entry and product-type decisions of motels)	Quantitative
Medina-Muñoz & García-Falcón (2000)	Hotels and travel agencies (USA)	Supply management	Empirical
Medina-Muñoz *et al*. (2002, 2003)	Hotels and travel agencies (Europe)	Supply management	Empirical
O'Connor, Buhalis & Frew (2001)	Airlines/hotels and tour operators	Information technology	Conceptual
Page (2003)	The entire TSC	Overall management of TSC	Conceptual
Pearce (2007)	Suppliers of travel products and tour operators (New Zealand)	Supply management (Supplier selection)	Empirical
Pearce, Tan & Schott (2007)	Tour operators and travel	Supply management	Case study

	agencies (New Zealand)		
Piga (2003a, 2003b, 1999)	Local government and tourism organizations	Two-party relationship (Tourism development tax)	Quantitative
Scavarda *et al*. (2001)	The entire TSC	Performance measurement	
Tapper & Font (2004)	The entire TSC	Overall management of TSC	Conceptual
Taylor (1996)	Tour operators	Two-party relationship	Quantitative
Taylor (1998)	Tourism organizations and tourists (UK)	Two-party relationship (Pricing behaviour in package tour industry)	Quantitative
Theuvsen (2004)	Tour operators (Europe)	TSC coordination	Conceptual
Tsaur, Yung & Lin (2006)	Tour operators and travel agencies (Taiwan)	Supply management	Empirical
Tse (2003)	Hotels and travel agencies	Supply management	Conceptual
Wie (2004, 2005)	Excursions	Two-party relationship (Capacity investment in the cruise line)	Quantitative
Wynne, Berthon, Pitt, Ewing & Napoli (2001)	Travel agencies and tour operators (South Africa)	Information technology	Conceptual
Yilmaz & Bititci (2006)	The entire TSC	Performance measurement	Conceptual

Note: The items in parentheses are given only when they are available from the study being considered.

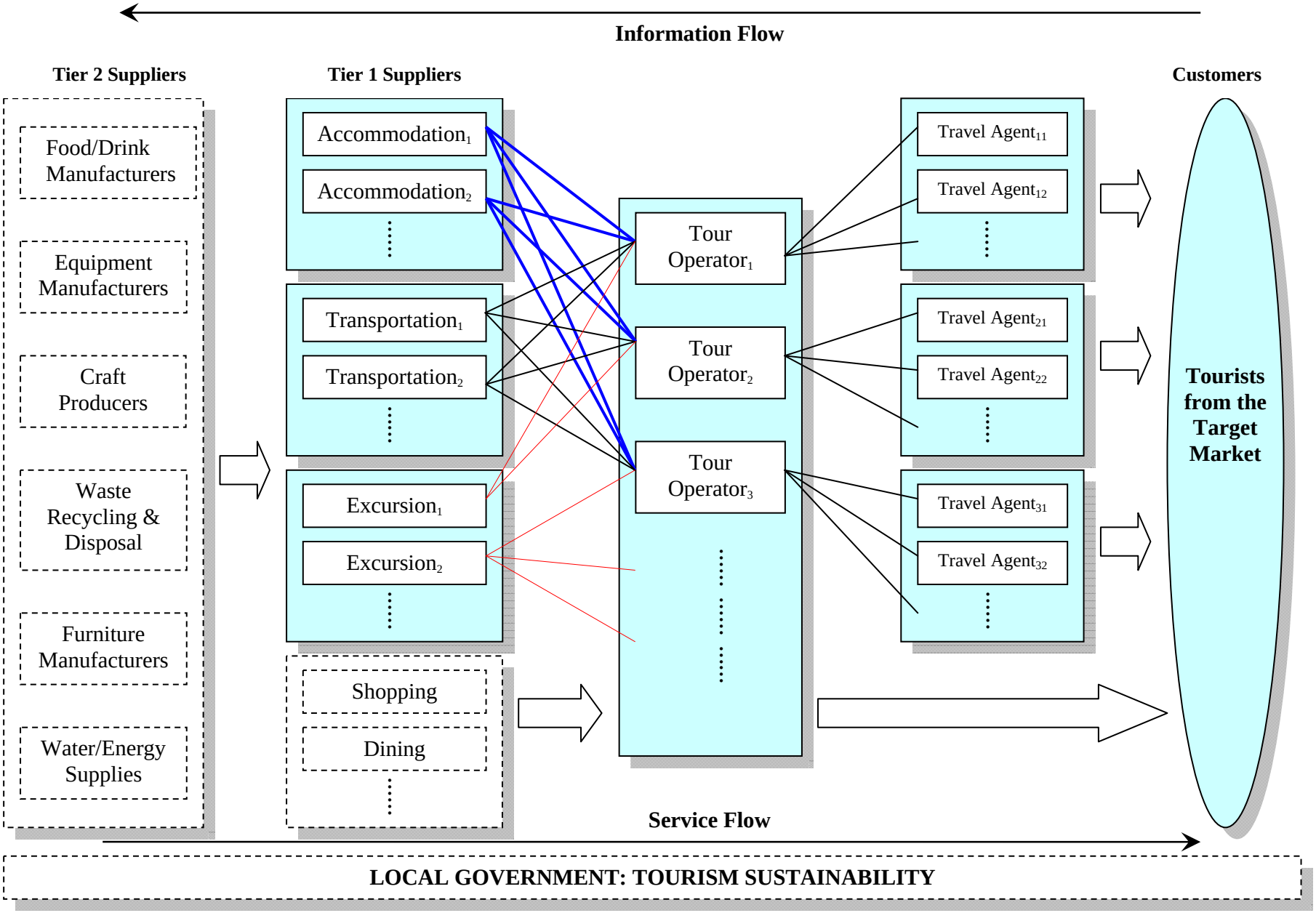

Figure 3. A typical TSC within a destination.