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## Relations in the tourism supply chain Relacje w łańcuchu dostaw w turystyce

**Abstract:** The critical review of publications in the field of economics and management allows one to state that research covering the tourism supply chain (TSC) is quite limited and non-exhaustive. The article presents the review of the most significant studies discussing the problems of the tourism supply chain. The authors attempted to indicate gaps in the existing models of the tourism supply chain and on that basis suggested their own model emphasizing, in particular, the relations occurring between its components. It takes into account additional elements, which have not been included so far, i.e. the complex and service oriented nature of a tourist product and its close relations with space, immobility of supply and mobility of demand, as well as the network structure of the tourism economy based on new technologies in terms of information and communication.

**Keywords:** supply chain, relations, tourism

**Streszczenie:** Krytyczna analiza publikacji z zakresu ekonomii i zarządzania pozwala stwierdzić, że badania zagadnienia łańcucha dostaw w turystyce należą do nielicznych, a jednocześnie są niewyczerpujące. W artykule dokonano przeglądu najważniejszych prac poruszających problematykę łańcucha dostaw w turystyce. Autorki podjęły próbę wskazania niedostatków w dotychczas sformułowanych modelach łańcucha dostaw w turystyce i w oparciu o nią zaproponowały własny model, w którym szczególny akcent położyły na relacje między jego ogniwami. Uwzględnia on dodatkowe elementy nie brane dotychczas pod uwagę, tj. złożony i usługowy charakter produktu turystycznego oraz jego ścisły związek z przestrzenią, niemobilność podaży i mobilność popytu, a także sieciowość gospodarki turystycznej opartą na nowych technologiach w zakresie informacji i komunikacji.

**Słowa kluczowe:** łańcuch dostaw, relacje, turystyka

### Introduction

The highly competitive environment of the tourism industry, resulting from changes in communication technologies, in the approach to competition and cooperation, the development of global economy, virtualization and flexibility of socio-economic activities, faster knowledge diffusion and innovation, has forced tourism firms to search for ways to enhance their competitive advantage. One of its construction methods is the integrated supply chain and its effective management. The contemporary approach to the tourism supply chain concept remains the consequence of the new economic order characterized by mutually dependent economic entities creating an extensive, complex and highly dynamic network structure. Compared to other sectors, the tourism supply chain presents a specific nature related to the tourism product complexi-

ty resulting from the complementarity of tourism needs and close relationship with geographical space and its tourist attractions.

## Methodology

The purpose of the article is an attempt to construct a model of the tourism supply chain covering the aforementioned specific nature of tourism oriented economic activities and also the dynamic transformation occurring in the current market. The new model proposal was preceded by a three-stage research procedure covering the following:

1. The review of tourism supply chain definitions from the perspective of the specific nature of the tourism system, the items exchanged and the entities operating on the tourism market.
2. The characteristics of the essence and typology of relations in tourism.
3. A review of the most representative tourism supply chain models in Polish and foreign literature.

The purpose of the article was achieved as the result of a critical analysis method application (especially in the course of the first and third stage of the study), the application of the SALSA method (at all stages) and the modeling of processes occurring in the tourism supply chain (third stage). Moreover, deduction and research results synthesis methods were applied.

The choice of concepts, presenting the essence of the tourism supply chain, was the key methodological problem, which resulted in the choice of adequate research publications. Their selection was based on applying the above-mentioned SALSA analytical framework (**S**earch, **A**ppraisal, **S**ynthesis and **A**nalysis). *Search* – the analysis of terminology used in published literature, which resulted in determining such terminology, i.e. the key words, and next specifying the selection criteria for research publication analysis. The following key words were distinguished: the tourism supply chain (TSC), supply chain relationship, supply chain networks, a tourism supply chain model, distribution channels in tourism, and transactional costs in the coordination of separate economic activities of individuals. The following criteria were adopted as fundamental for the selection of the underlying research work: recognized scientific publishers (e.g. Routledge, Elsevier, Wydawnictwo Naukowe PWN [*PWN Scientific Publishers*]), the availability of publications (physical or virtual), the positioning in search engines and the number of quotations. Within the next stage of the SALSA (*Appraisal*) procedure the assessment of publications was conducted, in terms of the above-mentioned key words, based on their abstracts analysis. The performed synthesis allowed choosing these literature references which met all the selection criteria and thus the analysis has taken into account eight compact publications and research articles. Among the key ones the following were included: X. Zhang, H. Song, G.Q. Huang, *Tourism supply chain management*:

*A new research agenda*, H. Song, *Tourism Supply Chain Management* and P. Alford, *A Framework for Mapping and Evaluating Business Process Costs Information and Communication technologies in tourism*.

The discussion presented in the article is based on secondary information sources of a theoretical nature and also the description of the economic practice in the tourism market.

### The essence of the tourism supply chain

Foreign literature references, covering tourism economics and management most often offer definitions of the tourism supply chain originating from publications discussing these problems with reference to production. The most frequently quoted definitions are those by M. Christopher; J. Stevens; and also J.T. Mentzer, W. DeWitt, J.S. Keebler, S. Min, N.W. Nix, C.D. Smith and Z.G. Zacharia. M. Christopher presents a value-based variation to the problem, defining a supply chain as "the network of organizations that are linked through upstream and downstream relationships in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer"<sup>1</sup>. J. Stevens explains that a supply chain is a system whose constituent parts include material suppliers, production facilities, distribution services and customers, linked together via the feed-forward flow of materials and the feedback flow of information and financial capital<sup>2</sup>. J.T. Mentzer *et al.* Defined the supply chain as the set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer<sup>3</sup>. A similar situation is observed in Polish literature, since it also quotes definitions worked out for the needs of material operations analysis. Following J. Witkowski a supply chain is frequently referred to as enterprises cooperating in different areas between which the transfer of products, information and financial means takes place<sup>4</sup>. The analysis of a supply chain definition allows stating that a supply chain is usually presented in the form of a network and perceived as both, horizontal and vertical processes connecting a supplier and a client, as well as internal and external functions of an enterprise which facilitate the value chain in creating goods and supplying clients with due services<sup>5</sup>.

In literature there are very few definitions of a tourism supply chain (TSC) and sometimes their authors link TSC with a value chain (tab. 1).

The definitions of a supply chain are of a descriptive nature (R. Tapper, X. Font, P. Alford, H. Song) or have a graphic form (M. Kaukal, W. Hopken, H. Werthner). They emphasize that tourism supply chains involve many components – not just accommodation, transport and excursions, but also bars and

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<sup>1</sup> M. Christopher, *Logistics and Supply Chain Management: Strategies for Reducing Costs and Improving Services*, Pearson Education Limited, London 2011, p. 13.

<sup>2</sup> J. Stevens, *Integrating The Supply Chain*, International Journal of Physical Distribution & Materials Management, vol. 19, No 8/ 1989, p. 3-8.

<sup>3</sup> J.T. Mentzer, W. DeWitt, J. Keebler, S. Min, N.W. Nix, C.D. Smith, Z.G. Zach, *Defining Supply Chain Management*, "Journal of Business Logistics" 2001, vol. 22, No 2, p. 1-25.

<sup>4</sup> J. Witkowski, *Zarządzanie łańcuchem dostaw [Supply chain management]*, PWE Publishers, Warsaw 2003, p. 17.

<sup>5</sup> From the website of The Association for Operations Management, before (APICS) Available online at: <http://www.apics.org/>, [Accessed: 10th April 2014].

restaurants, handicrafts, food production, waste disposal, and the infrastructure that supports tourism in destinations<sup>6</sup>. Therefore the authors indicate the crucial stages of a typical supply chain, i.e.:

- customers – tourists,
- retailers – travel portals, travel agents, etc.,
- wholesalers – Global Distribution Systems, Computer Reservation Systems, tour operators, etc.,
- manufacturers (tourism suppliers) – hotels, tourist attractions, etc.,
- component suppliers – banks, water and energy suppliers, etc.

**Table 1. Tourism supply chain definitions**

Author	Definition
M. Kaukal, W. Hopken, H. Werthner (2000)	The supply chain diagramme presents different relationships which could potentially exist between its participants such as: suppliers, aggregators (Global Distribution Systems, Computer Reservation Systems, wholesalers), principals (tour operators), distributors (travel portals, travel agents) and consumers. Enterprises will typically occupy a single position within the supply chain and will have commercial agreements with other companies which reside in other parts of the supply chain.
R. Tapper, X. Font (2004)	The chain that comprises suppliers of all goods and services which are included in the delivery of tourism products to consumers.
P. Alford (2005)	A typical tourism value chain consists of four components: tourism supplier, touroperator, travel agent and customer who are covered by a single link chain.
H. Song (2012)	A tourism supply chain can be defined as the 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 private and public sectors.

Source: P. Alford, *A Framework for Mapping and Evaluating Business Process Costs Information and Communication technologies in tourism*, A.J. Frew (ed.), Springer Verlag, Vienna 2005, p.125-136; M. Kaukal, W. Hopken, H. Werthner, *An Approach To Enable Interoperability In Electronic Tourism Markets*, [in:] *Proceedings of the 8<sup>th</sup> European Conference on Information System*, H. R. Hanse, M. Bichler, H. Mahrer (eds.), ECIS, Vienna 2000, p. 1101-1111, R. Tapper, X. Font, *Tourism Supply Chains...*, op. cit., p. 1, H. Song, *Tourism Supply Chain Management, Advanced in Tourism*, Routledge, London - New York 2012, p. 6.

The tourism supply chain members aim at entering into commercial contract and establishing relations between them in order to deliver tourism products to consumers. One of the most recent definitions by H. Song emphasizes the network nature of relations occurring in a supply chain. Moreover, the author indicates the significance of private and public sectors in the delivery of final tourism products at a specific tourism destination. The analysed definitions,

<sup>6</sup> R. Tapper, X. Font, *Tourism Supply Chains. Report of a Desk Research Project for The Travel Foundation*, Leeds Metropolitan University and Environment Business & Development Group, Leeds 2004, p. 1, Available online at: <http://www.lmu.ac.uk/lisif/the/Tourism-Supply-Chains.pdf>, [Accessed: 10th April 2014].

however, do not fully provide for the specific nature of tourism influencing the supply chain form. The particular characteristics of tourism result from:

- the essence of a tourism system – according to N. Leiper such a system consists of particular subsystems: an area generating tourist traffic (the area of tourists' permanent residence), tourist destination (the area of meeting tourists' needs), as well as connecting communication systems covering transport and communication-information infrastructure<sup>7</sup>,
- the characteristics of the tourism market object – tourism covers services in the case in which it is not possible to move them closer to a client. Therefore, a solid tourism supply has to be dealt with (in a tourist destination) as well as mobile demand – which travels from the place of permanent residence to tourist destinations. A tourism product constitutes an object of the tourism market, which represents a complex product consisting of numerous tourism specific goods and facilities, including tourism and infrastructure facilities, as well as services offered by many enterprises and organizations, not only tourism oriented ones. It has to be emphasized that such a product is consumed in the tourist destination area and not in the place of tourist's residence,
- the specific nature of the tourism market subject – the establishment and supply of a tourism product involves both, tourism specific entities (e.g. hotels, restaurants, travel agencies, tourism information points, etc.), as well as other companies (e.g. production, service or commercial firms), and also local government units, economic cooperation organizations and social organizations.

Attention should be paid to the fact that not one individual entity is capable of meeting all tourism needs presented by a consumer. Additionally, a tourist has a much larger impact on the ultimate form of the consumed product since he/she enjoys extensive independence in selecting its components. In spite of purchasing the ready-made package of services (covering accommodation, food, transport, sightseeing), a tourist visiting a tourist destination can decide him/herself, on the spot, about taking advantage of additional services not included in the purchased package (e.g. car rental, travelling to some attractive historical monuments or trying the regional cuisine in a local restaurant). In such cases the linking component binding the particular elements of a tourism product is the tourist him/herself rather than enterprises bound by agreements.

The specific nature of a tourism supply chain, especially from the perspective of a tourist destination, consists in the fact that in many cases the classical interdependence supplier – client is absent and there are no entities selling the final product to a client. The final tourism product is represented by the destination product, the particular elements of which are frequently selected by a client – a tourist.

A tourism supply chain meets many functions, among which the most important ones are as follows:

- professional creation of tourist offers,

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<sup>7</sup> N. Leiper, *Tourism Management*, TAFE Publications, Melbourne 1995, p. 25.

- organizing tourist traffic streams,
- proper realization of diverse living needs presented by tourists,
- information provision,
- associating the spatially dispersed demand with the spatially distant supply of tourism services.

### **Business relations in tourism**

A supply chain is established as the result of creating relations between its particular components. The definitions of relations presented in literature references have either a philosophical or logical background. In ontology relations are referred to as dependent entities, binding other dependent entities, of which one is the subject of an occurring relation and the latter its final component due to their shared responsibility in some aspect<sup>8</sup>. From a logical perspective a relation means any connection or interdependence (relationship) between two (or more) e.g. objects, concepts, volumes<sup>9</sup>.

Relationships in a tourism supply chain are categorised into many groups according to the following criteria:

- the type of entities' functioning coordination (horizontal, vertical and conglomerate),
- the nature of relations (competition, cooperation, cooperation),
- the relation towards an individual supply chain member (internal, external),
- the relation towards a consumer as a supply chain member (direct, indirect),
- the characteristics of a tourism system (two-party relationships between government and tourism organizations, relationships between government and the private sector, three-party relationships between government, tourism organizations and the private sector, relationships between tourists and residents, relationships between tourists and destinations, relationships between tour operators and destinations).

The first type of relations in tourism supply chains are most often analysed in the subject literature. The coordination of entities' functioning can present either a market or managerial nature. Market coordination incurs costs related to market research, negotiating agreements, monitoring of agreements implementation, possible costs of arbitrage. All these costs are referred to as transactional costs<sup>10</sup> or coordination costs through price. Their reduction is possible as a result of top-down resource allocation management in a company, however, it is connected with the occurrence of managerial coordination costs. The interdependencies within market coordination can take the form of the following relations:

- horizontal – when companies presenting the same business profile merge searching for economies of scale,

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<sup>8</sup> *Sieci logistyczne [Logistics networks]*, ed. M. Ciesielski, Poznań University of Economics Publishing House, Poznań 2002, p. 32.

<sup>9</sup> *Ibidem*, p. 33.

<sup>10</sup> O. Williamson, *The Economic Institutions of Capitalism: Firms, Markets and Relational Contracting*, Free Press, New York 1985, p. 38-42.

- vertical – when entities merge to take over the production line (backward integration) or sales and distribution network (forward integration),
- conglomerates (functional) – when an enterprise representing one market merges with a company from another market to intensify tourism product sales, e.g. the cooperation of a tour operator and a publisher of books or a trade network.

Business goals resulting from closer and tighter relations between market entities include the following: the retention of clients; increased revenue; reduced costs and improved operational efficiency, remaining competitive to assess and responding to risks and opportunities in the market; management of risks and being ahead of legislative requirements; enhanced staff performance, achievement of better recruitment and staff retention, since satisfied staff are the key asset; the protection of core business assets (environment and culture); and enhanced brand value, reputation and market share, protecting the image and status, particularly in the case of listed companies<sup>11</sup>. The success of tourism enterprises in a supply chain can be obtained by the collaboration of businesses via combining their capital, labour, land, technology, efforts, knowledge, abilities and other diverse resources<sup>12</sup>.

The fundamental reason, supporting the establishment of strong relations by the tourism market entities, is the desire to obtain the economies of scale. Already at the beginning of the 20<sup>th</sup> century the search for the economies of scale was the main factor responsible for the establishment of the first hotel chains. It refers to large, small and medium enterprises. The largest tourism companies usually represent corporations integrated both horizontally and vertically, as e.g. the Accor group which has the controlling stakes of hotels in over 100 countries worldwide (horizontal integration). The famous corporation, Walt Disney Company, offers in its portfolio not only amusement parks but also hotels, road transport enterprises and its own tourist agencies (forward vertical integration). The consolidated enterprises often take the form of alliances based on the complementary, rather than competitive, principle. A good example is Orbitz, established by 5 American airlines, also offering hotel accommodation services and car rentals. In the case of hotel networks the integration objectives in supply chains result from an increasing bargaining power which allows cutting the supply costs, negotiating better contracts in cooperation with tour operators and agencies, searching for business partners among e.g. airlines, etc. This allows increased sales efficiency by extending the product range and being present in a larger number of markets. The relations within a supply chain in the hospitality business are frequently constructed as a result of facilities' purchase, or through license sharing, less often by managerial contracts and hotel leasing. Small hotels, in order to meet the competition pressure imposed by large chains, also enter into lasting relations by signing marketing agreements (e.g. Polish Prestige Hotels & Resorts and STARHotels), or joining franchise chains. In the 90s of the 20<sup>th</sup> century new relations in supply

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<sup>11</sup> Ibidem, p. 1.

<sup>12</sup> A. Öztüren, S. Güven, *Supply Chain Management as a Sustainable Performance Booster for the Accommodation Enterprises: Evidence from North Cyprus Tourism Sector*, "International Journal of Business and Management" 2009, Vol. 4, No 2, p. 97-111.

chains in the hospitality sector were initiated and took advantage of outsourcing. It is commonly used in gastronomy, transport, conference and banqueting organization, parking, sport, recreation, medical and cosmetic, trade, cleaning, laundry services, IT support, accounting, etc.

New possibilities in making contacts and strengthening cooperation relations in tourism were opened as a result of Information and Communication Technology (ICT) development. ICT is recognized as a potential tool for cost reduction and enabling effective business processes<sup>13</sup>. ICT covers, among others: computer reservation system (CRS), global distribution system (GDS), world wide web (www), the Internet, the Extranet, the Intranet, social media and mobile phones. Tourism represents an increasingly ICT-intensive industry that is heavily dependent on innovations which enable the effective distribution of its products/services and the management of its customer relationships. All of the business functions of TSC partners, including marketing, product design and planning, demand management and forecasting, R&D, the management of physical, financial and information flows, CRM and HRM, are closely linked to ICT<sup>14</sup>. ICT offers ample opportunities for organizations by ensuring efficiency in operations, providing electronic payment systems, making communication easier and frequent between business partners, meeting orders, facilitating inventory management and improving their supply chain performance. Therefore, to be competitive in the current business world many companies, also in tourism, are using ICT in their supply chain management functions<sup>15</sup>. In particular, the development of www towards web 3.0 results in changes in the supply chain functioning, which allows two-way information flow in real time, its verification, as well as direct contact between partners<sup>16</sup>.

ICT has also strengthened tourist's independence in tourism product construction and thus upgraded its importance among the components of the tourism supply chain. It participates in creating the so-called dynamic packages, i.e. customized packages of tourism services and flexible modification of their prices<sup>17</sup>. In the European Union this form of purchase is already used by 23% of tourists, and in some countries (e.g. Ireland, Sweden, Slovenia, Italy) the respective share exceeds even 40%. The sales volume indicates that traditional tourist events constitute 40% of the total tourism market (98,4 billion EUR), whereas the so-called "dynamic packages" – 33%<sup>18</sup>. ICT also creates new challenges for tour operators in terms of establishing relations in a supply chain. Due to the fact that manufacturers of partial services transfer the risk of running a business to tour

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<sup>13</sup> A. Poon, *Tourism, technology and competitive strategies*, CABI, New York 1993, p. 15; W. Werthner, S. Klein, *Information technology and tourism – a challenging relationship*, Springer, New York 1999, p. 19; D. Buhalis, *ETourism: Information technology for strategic tourism management*, Prentice Hall, London 2003, p. 155.

<sup>14</sup> Song, p. 163.

<sup>15</sup> A.K. Tarofder, G. Marthandan, A. V. Mohan, P. Tarofder, *Web technology In supply chain: an empirical investigation*, "Business Process Management Journal" 2013, vol. 19, No 3, p. 431-458.

<sup>16</sup> For more vide: G. Even, M. Peacock, *A Comparative Study of ICT, Tourism and Hospitality SMEs in Europe*, [in:] *Information and Communication Technologies in Tourism*, ed. D. Buhalis, W. Schertler, Conference Proceedings of the Enter Conference, Springer, Vienna 2000.

<sup>17</sup> Vide E. Laws, *Managing Package Tourism: Relationships, Responsibilities and Service Quality in the Inclusive Holiday Industry*, International Thomson Business Press, London 1997.

<sup>18</sup> European Documentation Centre ([http://cde.uwm.edu.pl/komunikaty\\_KE/komke416.html](http://cde.uwm.edu.pl/komunikaty_KE/komke416.html)) access on 24<sup>th</sup> April 2012.



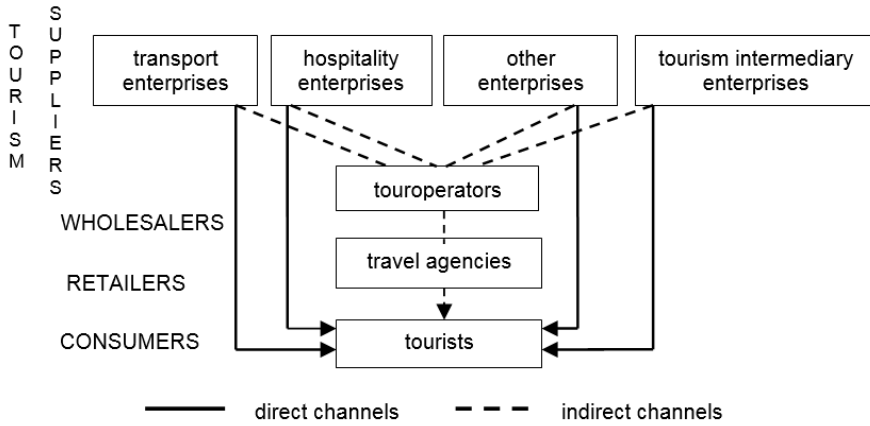
operators, for the latter it is of key importance to ensure an adequately high sales level. So far it has been possible as a result of maintaining large networks of travel agencies which, however, also involved adequate expenditure. The application of ICT in a supply chain allows obtaining the same affect, but at a lower cost. If business activities are moved to a network the tendency to control the supply chain maintains (vertical integration forward). Concentration and consolidation processes, taking place in the tourism sector, resulted in the establishment of a virtual tourism market under the influence of ICT, e.g.: InterActiveCorp (merger of Expedia, Hotels.com and WorldSpan), Cendant (Orbitz, ebookers, Octopus-Travel.com), Priceline (takeover of ActiveHotels), Lastminute.com (purchased HolidaysAutos, MedHotels Lastminute.de and several smaller companies). More examples of major takeovers are: Opodo purchased by GDS Amadeus or Travelocity (currently owned by GDS Sabre).

The increasing complexity of a supply chain structure remains the consequence of various relations (e.g. vertical, horizontal, competitive, cooperative) between entities on the tourism market, its specific nature, its major actors and the exchanged item. Moreover, a tourism supply chain is modified by the development of innovation, especially in terms of ICT.

### **Tourism supply chain models**

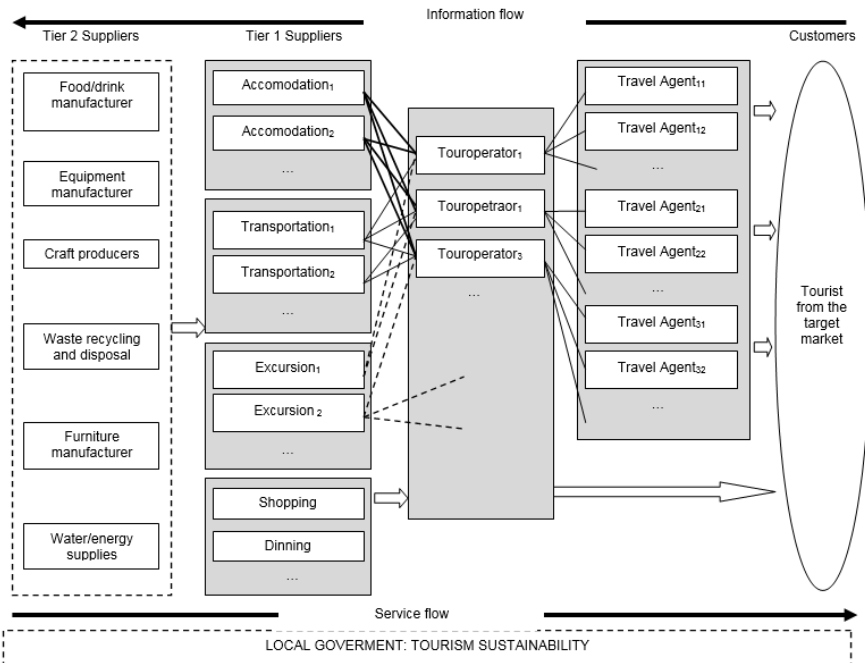
The review of Polish and foreign literature allowed identifying the most representative tourism supply chain concepts. In Polish literature the most cited TSC model is the one prepared by Altkorn (Fig. 1). The author analyses the tourism supply chain in a marketing perspective, emphasizing its role in the process of tourism product distribution. It can be classified as a linear model indicating the sequential nature of relations from manufacturers to tourists. Its idea was based directly on functional models in production and therefore does not emphasize strongly enough the specificity of tourism as such, as well as the process of tourism product supply.

In international literature the most representative model is the one prepared by X. Zhang, H. Song and G.Q. Huang (Fig. 2) on the basis of Page's work. They proposed a more general TSC network within a destination, which consists of including the second-tier suppliers to TSC who supply services or products to the first-tier suppliers. Other TSC concepts do not take it into account (e.g. Altkorn's model). The first tier of TSC upstream covers direct suppliers who supply tourism services directly to intermediaries. The typical direct suppliers are represented by: theme parks, shopping centres, hotels, bars and restaurants, handicraft shops, and transportation operators. X. Zhang et al. emphasizes the important role played by local authorities at every stage of a tourism product creation. It means that local authorities are recognized by them as a typical link in TSC. The authors also list other TSC members, such as business associations facilitating public and private sector collaboration. TSC framework description also takes into account power relationships and business links among partners.



**Fig. 1. Distribution channels of a tourism product**

Source: J. Altkorn, *Marketing w turystyce [Marketing in tourism]*, Wydawnictwo Naukowe PWN [PWN Scientific Publishers], Warsaw 1993, p. 131.



**Fig 2. A typical TSC within a destination**

Source: X. Zhang, H. Song, G.Q. Huang, *Tourism supply chain management...*, op. cit., p. 345-35.

Altkorn's and Zhang's models refer to the process of tourism services package creation where the most important role is played by a tour operator, referred to

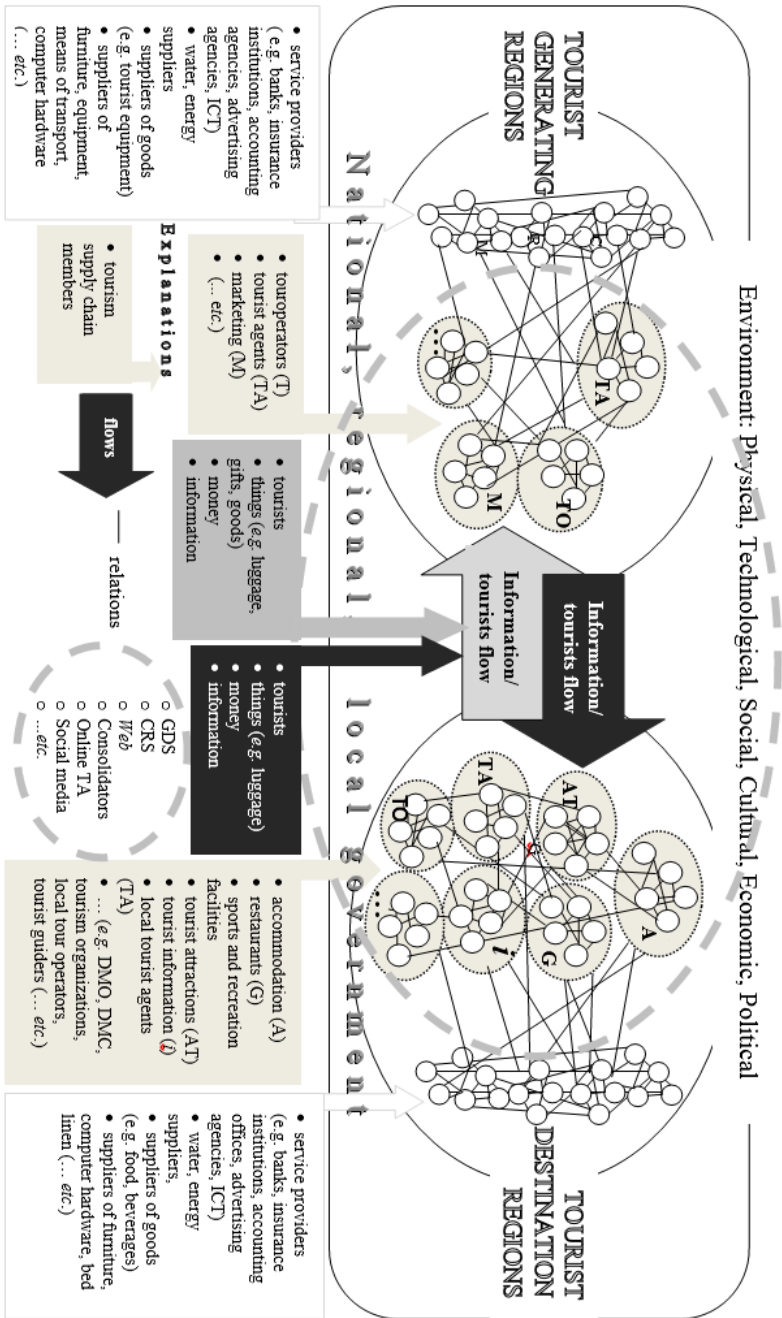
as the principal. Such tour operators are responsible for combining individual services and tourism goods into packages delivered to tourists by retailers. In this model tourists are placed at the downstream end, whereas the stream of offered services takes the direction from suppliers to tourists representing the target market. These models disregard the two basic characteristics of services – immateriality and inseparability of production and consumption. It should also be noted that such an approach describes only some of the relations occurring in a tourism supply chain. It does not cover the relationship between tourists and a destination consisting of an individual selection of particular services package by tourists, as well as purchasing individual services in a given tourism destination in order to add attractiveness to the previously bought tourism package from a retailer. Such individuality of purchase behaviour, presented by tourists, keeps increasing along with ICT development and mainly owing to CRS, Web, as well as the functioning of the so-called consolidators. The above quoted authors of models discussed in the article approach the role of ICT in TSC from various angles. J. Altkorn does not recognize the role of information technology at all. On the other hand, X. Zhang *et al.* emphasize the growing significance of ICT in the tourism industry, however, they do not present it in a graphic form of a model (Fig. 2). Nevertheless, the subject literature does offer works which clearly demonstrate virtual entities functioning in a tourism supply chain based on Information and Communication Technology (for example Alford's model).

In the process of TSC model construction for the purposes of the hereby study the Authors followed certain assumptions:

- tourist demand is mobile whereas the supply is strictly connected with a destination (emphasized by N. Leiper),
- the tourism supply chain is present both, in tourist destination regions and tourist generating regions,
- the high diversity of entities (business and non-business, public and private sectors), as well as complexity (including non-material services) of the tourism market object.
- the most important TSC member is a tourist, who is present in the chain not only as a purchasing agent, but also as an integrator, designer and co-creator of a tourism product,
- the development of Information and Communication Technology facilitates a tourist in his/her active participation in the process of tourism product creation.

As a result a tourist can make an individual purchase of a flight ticket, accommodation, a meal, admission to a museum or a ticket to a concert. The development of ICT also influences the advancing virtualization and networking nature of economic activities in tourism, also resulting in the creation of the new type of entities present at particular TSC stages.

The model suggested in the article (Fig. 3) is based on X. Zhang, H. Song and G.Q. Huang's, N. Leiper's and Ph. Alford's works.



**Fig. 3. A structure of the typical tourism supply chain**  
Source: authors' compilation

It offers the possibility of more extensive adaptation to the specific nature of the tourism system. The authors are of the opinion that the streams flowing in TSC are not represented by services but by tourists themselves and things they own, as well as information and financial means.

Therefore, they emphasize the immobile nature of a tourism product, i.e. its close relationship with a destination. In this model a tour operator is not perceived as the principal, whereas e.g. the consolidators gain importance, who by means of grouping the bookings made by tourists can achieve lower prices of services (accommodation, transport, attractions, etc.) in a supply chain and thus strengthen their competitive position in a supply chain against tour operators. By facilitating tourists in their individual creation of specific service packages they weaken the role of a tour operator as the sole tourist package creator on the market. TSC model emphasizes the networking orientation of operations performed by diverse tourism entities and the complexity of their mutual relationships. The following relationships have been distinguished: two-party relationships between government and tourism organizations, relationships between government and the private sector, tourism organizations and the private sector, three-party relationships between government, tourism organizations and the private sector – DMO or DMC, relationships between a tourist and a destination, relationships between tour operators and destinations. Just as it is true for X. Zhang *et al.* model, the role of public authorities in the process of a tourism product development was emphasized.

### Final remarks

The focus on the above discussed research problem was inspired by the need to supplement the existing TSC models with additional components resulting from the dynamic transformations occurring in the tourism market and related to ICT development, as well as emphasizing the specific nature of the tourism system. The complexity characteristic for tourism results in the fact that the construction of TSC model is not an easy task. The difficulty lies in the transparent presentation, based on a simplified model, of all the complex relations occurring between the numerous diverse entities functioning in both, the real and virtual environment at particular stages of the tourism product creation and supply. The authors are fully aware of the limitations present in the suggested model and find it an incentive and inspiration to carry out further research and scientific discussions.

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