



STRATEGIC PARTNERSHIPS FOR INNOVATION AND INTELLIGENT CONCEPTS FOR TRANSPORT AND MOBILITY

Antoaneta Kirova

Economy and Accounting in Transport Department, "Todor Kableshkov"
University of Transport, Sofia, Bulgaria

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Abstract

The European Commission aims to create a Single European Transport Area by removing residual barriers between modes of transport and national systems, facilitating the integration process and facilitating the emergence of multinational transport providers with the possibility of intramodality. The Integrated Transport Strategy of the Republic of Bulgaria until 2030 provides for specific measures to achieve strategic objectives, answer specific priorities, and solve the identified problems in the transport sector. The thesis of the presented paper is that to reduce fuel consumption and increase the energy efficiency of transport, deploy alternative energy sources, improve transport system management (through intelligent transport and information systems and by increasing institutional capacity), as well as to develop efficient intermodal solutions, the creation of cluster associations in the transport sector is crucial. The research made has brought forward certain practical achievements discussed hereto. Further different strategic forms within the transport sectors are investigated, related to the process of clustering.

Keywords: Clusters, strategic alliances, transport sector, European transport policy

1 PRIORITIES OF EUROPEAN TRANSPORT POLICY

The third White paper on the future of the transport sector until 2050, named "Roadmap to a Single European Transport Area - towards a competitive and resource efficient transport system", the Commission describes the transition of the transport sector from the old to the new challenges and identifies ways to overcome them

The address of the author:

Antoaneta Kirova

[✉ toni.kirova@gmail.com](mailto:toni.kirova@gmail.com)

(COM_COM(2011)0144, 2011). The position of the executive body is revealed in setting an overall target of reducing greenhouse gas emissions by at least 60% by 2050 compared to the levels in 1990, without hindering transport development and endangering mobility, together with a current goal for intermediate reduction of around 20% by 2020-2030 compared to their 2008 levels. However, these targets appear far too low compared to those set at the Paris Conference on Climate Change in December 2015 (Council of the EU, 2015), namely to reduce greenhouse gas emissions by at least 40% between 2021 and 2030. The achievement of drastic cuts in



emissions by 2020, the common transport policy must address, resolve and present economic and environmental challenges. This means more limited and cleaner use of energy by transport, better exploitation of modern infrastructures and further reducing the negative impact on the environment. The White Paper on Transport sets out 10 objectives (such as transfer of 30% of freight road transport, to rail, sea transport or IWW by 2030, reaching more than 50% by 2050; tripling the length of the high-speed rail network to 2030 and transferring to railways the majority of passenger movements at short distances by 2050; the deployment of a fully functioning multimodal "core network" TEN-T in the Union by 2030, a high quality and high-capacity network by 2050, as well as relevant information services, etc.) The European Commission aims to create a Single European Transport Area by removing residual barriers between modes of transport and national systems, facilitating the integration process and facilitating the emergence of multinational transport providers with the possibility of intermodality. To avoid tensions and violations in the strict application of the competition rules in all modes of transport, the proposed policy provides for greater harmonization and better enforcement of social, environmental, safety and security rules, and minimum standards of service and user rights.

Another strategic issue relates to innovation, including new technological solutions as well as changing behavior towards more sustainable forms of mobility. Finally, the modern transport infrastructure network requires significant resources, such as diverse sources of funding and implementation of intelligent systems and the transport sector, which is the largest beneficiary of the Connecting Europe Facility (CEF) with a budget amounting at € 26 billion by 2020.

A second resolution on the implementation of the 2011 White Paper was adopted in 2015, headed "Equity and Future Action for Sustainable Mobility". In the framework of the mid-term review, the EP insists on a clear vision on the current implementation of 40 initiatives, highlighting the

significant difference between the objectives and the operational and financial means of their achievement. A number of recommendations have been made to integrate all modes of transport for the purpose of a more efficient, sustainable, competitive and user-friendly transport system. Among the main issues raised are intermodality, modern infrastructure, the financing of Intelligent Transport Systems, urban mobility, the role of consumers in transport policy and the global dimensions of transport (SWD(2016) 226 final, 2016).

The Report of EP on the new opportunities of the SMEs in the transport sector, including mutual business models (2015/2349(INI)) (Riquet, 2016) states, that while highlighting anti-competitive practices, resulting from the difference in the implementation of EU rules in the Member States, "new opportunities offered by small transport companies and new joint business models" are welcomed¹.

The Integrated Transport Strategy of the Republic of Bulgaria until 2030 (anon, 2017) identifies problems in the transport sector as well as offering solutions and definite measures towards the achievement of each strategic goal and every strategic priority:

- Reducing fuel consumption and increasing the energy efficiency of the transport sector. The existence and functioning of clusters, based upon the idea of alternative energy sources' application as well as clusters related to vehicles using alternative fuels would aid the achievement of this objective, bringing forward the opportunity of "green transport";
- Improving the management of the transport system (through the implementation of intelligent transport systems as well as other types of information systems for improving the management process and increasing the institutional capacity) can also be achieved on the basis of clustering;
- Development of intermodal transport through terminals with logistics operators, concentrated around them, appears to be one

¹ In the field of wages and social security systems, which leads to serious distortions (social dumping) as well as security challenges

of the most appropriate options for the establishment of clusters, with participating carriers, infrastructure, and logistics agents, customs as well as the users of transport services, involved in the clusters' activities;

- Ensuring conditions for fair competition, which can also be achieved by cooperation, shared vision for the future development of transport industry and common development strategy.

Within the framework of the Connecting Europe Facility (CEF), in the process of realization of the Implementation Program of SESAR Initiative (EC, 2017), among the recommended policies of the European Commission is to develop business associations and clusters of excellence, with the view of creating an internal and external environment for cross-sectoral cooperation and technology development in order to support the diversification and modernization of business structures. "Clusters are powerful tools to boost industrial competitiveness, innovation, and regional growth ... They can be used both in the design phase and in the implementation phase of smart specialization strategies" (The European Union, Regional policy, 2012).

We have found enough evidence supporting the process of clustering and exploiting the positive results of cluster activities within the transport sector, which are further explained below.

2 CLUSTERS IN THE TRANSPORT SECTOR IN SUPPORT OF EUROPEAN TRANSPORT POLICY

Clusters represent agglomerations of interconnected companies and their associated supporting institutions; the cluster framework is established for the production and offering of similar or related goods or services in a separate field of activities with opportunities of mutual relation between different industries. The cluster participants by presumption are situated in a geographic proximity, including companies, business associations, training or providing technical assistance or services companies, etc.

According to the definition of the European Cluster Observatory, the cluster is a regional concentration of economic activities and the industries represented in them, which are linked through multiple cross-sectoral links (also called "related diversification") (Roelandt & Hertog, 2017). It includes various kinds of companies, representing suppliers, producers of intermediate or final products and service providers, as well as innovation actors such as research and education institutions, specialized government agencies, financial actors and many other organizations. Within the frames of OECD, a methodological survey between the member states was carried dedicated to analyzing existing clusters and policy initiatives in this field (Aerospace Valley, 2017).

The impact of clusters in the transport sector affects the transport-related industry (represented by the production of vehicles and other transport means and equipment), the process of creation of transport services and, indirectly, the opportunities for implementing transport policy by promoting efforts for a pan-European transport market and reducing the harmful effects of transport.

An example of best practices is in the global level competitive "Aerospace Valley" Cluster, which begins from uniting the local competitive advantages of the regions "Mid-Pyrenees" and Aquitaine has been transformed into European Aerospace Cluster Partnership (EACP) establishing a network of European aerospace clusters (Loubet, 2017). In France, it is leading both in terms of R & D and the potential to maintain 130,000 jobs in the sector, including 1 600 enterprises, 1/3 of the country's workforce in aviation and over 50% of those employed in the space sector. Among the cluster, participants are 8500 researchers and 2 of the 3 prestigious aeronautics and space engineering schools in France. There are also 7 colleges, SMEs (260 enterprises), industrial leaders (60 organizations of OEM¹ type as major players²), 45 training organizations, 17 research centers, organizations for economic development, public and regional institutions, trade organizations, including their

¹ Original equipment manufacturers

² Airbus, Dassault-Aviation, Sogerma, Thales Alenia Space; the providers of electrical equipment are Alstom, Freescale, Continental Automotive, Thales Avionics;

equipment suppliers are Alema, EADS Composites Aquitaine, Creuzet. The Science & Research centers are ONERA, INRIA, CNES, CEA, CERFACS, with universities ISAE, ENAC, EMAC, Universities of Toulouse, Bordeaux and Peau

partnerships. The chosen organization form is "association" (LOI 1901) (Onera, 2017), and financing is equally divided between the French government, the local authorities and participants' contributions. So far, 480 joint research projects have been carried out, bringing together the sector and the research potential, with a total budget of EUR 725 million, of which EUR 307 million for public funding (for instance ONERA (Goranova, 2016), a French Aerospace Lab as an important component of the aerospace strategy).

The value chain is based on outsourcing the production of parts, assemblies, and details, as well as on the activities of the cluster partners (for the plane wings, fuel cells, engines - GE, Rolls Royce). The cluster body located in Toulouse is responsible for assembling and the final integration. In addition to the support of the French government, the cluster is backed and works closely with other established clusters in the country, such as Ast tech and PEGASE.

The global aerospace cluster network includes foreign clusters in this field from Canada, China, Spain, etc. Bulgarian companies can also become participants in the international industrial cluster for aircraft construction (NCITES, 2017).

Global competition is expressed through lower cost levels, increasingly integrated "client-supplier" relationships, and OEMs restrict the number of suppliers with new programs using underpaid skilled workforce (from Mexico, China, India, Russia, Brazil, Malaysia and Morocco). In recent years it has been represented by emerging aerospace clusters in Canada, where airplane hulls are produced. Over the next 10 years, aerospace innovations will be radical, with the most important factor being cost reduction and improved customer service. Over the next 10 years, aerospace innovations will be of the incremental type, with the most important factor being cost reduction and improved customer service (represented for instance by the Airbus planes).

In view of the fact of the growing market share of the aerospace industry in the global market¹, there is a strong potential for industrial and cluster development in the aviation industry. Consequently, developing aviation clusters in Asia account for about a third of future aircraft demand.

In Bulgaria, "National Cluster for Intelligent Transport and Energy Systems" (NCITES) unites telecommunication, IT companies as well as enterprises representing the transport and energy technical infrastructure. In supporting the development and best European practices' application process, the cluster is functioning in close collaboration with scientific and engineering organizations, trainers, as well as with representatives of the business companies, implementing innovative solutions realized for European infrastructure. NCITES was given a category of "Developing cluster" by EAFSME² in Bulgaria (Eriksson, 2013)

In the sphere of transport and logistics services, a well-known concept is the "logistics cluster" meaning a geographically concentrated complex of business-related logistics activities. Yossi Sheffi outlines the characteristic "positive feedback" of the development of logistics clusters and the features distinguishing them from other industrial clusters; the reasons for locating the company's distribution and value-adding activities to logistics clusters, the role of the government support in the form of investments, the regulatory and trade policy etc. (Sheffi, 2013)

From the viewpoint of logistics, industrially intensive clusters are agglomerations of: (1) companies providing logistics services such as 3PL³, transportation, warehousing and forwarding services; (2) logistics operations of industrial firms such as distribution activities for retailers, manufacturers and in most cases also post sales' services 3) companies, where logistics comprises a major part of the business. Similar logistics clusters include companies responsible for vehicle maintenance activities, software vendors,

¹ Meaning regions in Africa, the Asia Pacific region, Latin America, the Middle East, Russia and the CIS, where long-term GDP growth is above the world

average and their countries are consumers of a significant number of new aircraft

² Executive agency for fostering SMEs

³ Third party logistics

specialized law firms, international financial services providers, etc.

The similarities between logistics and industrial clusters lie in the created opportunities to increase productivity due to shared resources and availability of suppliers; developed networks of human resources, including knowledge and know-how sharing; silent communication and understanding; a high degree of confidence among the cluster companies; the availability of a dedicated fund of labor resources, as well as educational, training institutions and knowledge-intensive centers (universities, consultancy firms and think tanks).

The uniqueness of logistics clusters and their contribution to economic growth is represented by the economies of scope (mainly for direct transport operations) and economies of scale (due to the possibilities of consolidating consignments to be carried by different modes of transport); the joint provision of transportation capacity and storage and processing capacity of tangible products; providing opportunities for cooperation between suppliers in the conditions of demand fluctuations. Their advantages are expressed in the process of creating the value chains as well as in the provision of job opportunities supporting different forms of the production process. For these reasons, many regional and central governments, as well as plenty of real estate developers, invest in the development of logistics clusters (Rivera, Gligor, & Sheffi, 2016)

For practical reasons, to a certain extent, the concept "logistics center" can also be applied for the identification of logistics cluster. Logistics centers (or logistics parks) coordinate and control warehousing, transportation and information services between various companies by bringing together firms from different industries and by setting and implementation of new standards for development, design, and management of logistics activities.

The best European practices in the field of logistics clusters are represented by cluster formations in long-term EU member countries such as the Netherlands (Logistics Cluster in Port Rotterdam), but also by similar structures in the newly acceded countries, for example, the Estonian Logistics Cluster (Valgerist, 2017). The last one is realized following a mutual initiative, with a mission, dedicated to the international marketing of services, supported by all members, introducing Estonia's logistical advantages to targeted markets, R & D and education in the field of logistics. The Estonian logistics cluster was launched in June 2010, with major participation of the Estonian Ministry of economy and communications¹. The total number of members is 17, 14 of which are SMEs, as well as 2 university centers (n.d., 2017) The most prominent are Port of Tallinn, Estee Raudtee², EVR Cargo, Alexela Logistics, Baltic Rail, Tallinn Technology University, Mainor Business School, Estonian transit and logistics association (LTA), etc.

The developed sectoral transport activities of the cluster (railways, sea, and IWW³) are completely in accordance with the environmental requirements, warehousing and other ancillary activities are carried out within the emerging field "Logistics services". Supporting services are provided by the cluster in the field of internationalization, particularly for improving the access to the markets in non-EU countries (meaning China, Kazakhstan, etc.), to facilitate cooperation with partners in Member States⁴ (mostly Finland, Sweden and Latvia), promoting transparency and cooperation with other clusters (such as Estonian ICT cluster).

In Bulgaria, the Intermodal Transport and Logistics Cluster - Rousse was established in 2014 for cooperation in the field of transport and logistics in the Rousse region⁵. A Co-operation Agreement has been signed to improve interaction and increase the efficiency of activities in

¹ Realized through an investment project, 70% financed by EFRD, 30% - by the cluster members (total value 185700 Euro, period 15.01.2014 - 28.02.2015)

² Estonian Railways

³ Inland water ways

⁴ Participation in missions, events, study visits, fairs, transnational cooperation, etc.

⁵ Among the participants are Holding BDZ, JSC, representatives of the academic community within Angel Kanchev University of Russe, Executive Agency for exploration and maintenance of the Danube River, "Bulgarian River Navigation", JSC, Holleman Bulgaria,

participating organizations and companies in the emerging cluster¹.

In the field of promoting alternative energy sources and reducing the environmental pollution caused by transportation activities, the following clusters have been created in Bulgaria:

Industrial cluster "Electromobiles" (ICEM) established in 2014, as a national branch organization for mobility based on electricity, uniting industrial, technological and business development efforts, for strategic development, introducing regulatory changes, for higher and vocational education and training, standardization, efficient communication with the central government and local authorities, etc. The electromobility sector is already established and represented by producing charging stations, electric bicycles, and mopeds, oriented also towards the production of buses based on electrical motion. The cluster country forecasts suggest monthly growth of 200 - 300% of vehicles based on electricity. As far as hybrid vehicles are concerned, the expected growth will be stable, around 120%. The cluster has established close co-operation with 5 schools and 3 universities in the country for training of professionals in the field of electric mobility. 72 organizations represent full membership, while other 67 are in partnership (EVIC, 2017).

Efforts have been united around the creation of the National Charging Infrastructure for based on electricity vehicles – BULCHARGE, creation of community models and environment for conversion of vehicles in Bulgaria, offering innovative products in order to increase the competitiveness of the sector, according to the requirements and pressure of the European and world markets, cooperation in the field of new rules, norms and standards in this new industry, etc.

Marine Cluster Bulgaria (MCB, 2017) is a non-governmental organization, uniting the efforts of

all maritime sectors in Bulgaria, working for the sustainable development of the Bulgarian maritime economy through partnership and joint actions of all stakeholders. The association's aim is to create favorable conditions for the development and competitiveness of the maritime economy by introducing new organizational, product, market and technological solutions, training, implementation of good practices, as well as its promotion at national and international level. Members of the cluster are SMEs, non-governmental organizations, educational institutions, R & D centers². There is a great diversity of activities in different fields of the maritime economy, such as business (agency, brokerage, water transportation, ship management, ship bunkering, forwarding, and logistics), commodity surveillance; classification and conventional ship and floating facilities certification; ship design; repair and reconstruction; applied and applied research; education and training in maritime technical specialties; maritime law. Bulgarian Maritime Cluster (BMC) is a regular member of the European Marine Clusters Network and the Bulgarian Business Clusters Association. As a member of the European Maritime Cluster Network, BMC is in partnership with national maritime clusters in initiatives of the European Commission (Directorate-General for Maritime Affairs and Fishery). The organization has observing status and participates in the work of the Balkan and Black Sea Commission of the Conference of Peripheral Marine Regions.

To its members, BMC offers business, educational, advisory and legal services. BMC is an active member of the European Network of Maritime Clusters (ENMC, 2017) participating in project "Intelligent Transport Systems in Southeastern Europe", funded by the South-East Europe Transnational Cooperation Program. Its aim is to develop an institutional and technological

Ltd., Donau Transit, Ltd. And other companies and organizations.

¹ Within INTRAREGIO Project- ("Creating intermodal transport network through knowledge-based regional

research clusters"), financed through 7th Framework Programme of EC

² There are 15 organizations, among which the Military University "N. Vaptsarov", Tourism College, Varna, Bulgarian Register of Shipping, Bulgarian Shipowners' Association, brokerage and forwarding companies

framework for the harmonization of intelligent transport system specifications (Moralisyska, 2012)

Cluster Green transport (2017) is a non-profit association established by legal persons and individuals by the end of 2011 in Sofia. The cluster is focused exclusively on the development of intermodal freight and passenger transportation in Bulgaria, with objectives information, integration, consultancy and coordination activities for support and development of intermodal transport and related services. The cluster targets are the field of intermodality, integration of the capabilities of the Bulgarian transport system, expanding the market share of feeder and ferry operators as well as consolidating freight flows through block-trains, multimodal, hub-to-hub and door-to-door schemes. A common software and a web-based system are available for cluster members as well as third parties to for cargo information exchange, free reverse transport capacity (represented by wagons, containers, trailers, etc.), new products and terminal services. Legal assistance, as well as advisory services and training, are provided to aid cluster members.

On the basis of a memorandum for cooperation and development of new business opportunities between two sectors, Cluster Green Transport works together with Foundation ICT Cluster (ICTC, 2017). The purpose of the memorandum is to establish prerequisites for closer cooperation between the two clusters, committed to common efforts in the field of intelligent transport and the "green" economy in Bulgaria and the region, about deployment of innovation and intelligent transport solutions, leading to increased efficiency of the sector and its greater contribution to environmental protection and reduction of harmful substances. Business organizations will focus on implementing projects and transferring European and world best practices in the field of intelligent transport systems.

Creating a Consultation Platform for Synchronizing the process of gathering information on identified market opportunities and risks as well as the mutual coordination of the SESAR project implementation process includes users of the aviation space for services by civilian,

military operators, and the land-based operators. A process of the voluntary partnership is developed¹, which very much resembles cluster structure and includes both project management levels and application of funding opportunities through EC grants.

3 STRATEGIC ALLIANCES FOR CREATING VALUE CHAINS AND THEIR RELATIONSHIP TO BUSINESS CLUSTERS

According to the Official Airline Guide (OAG, 2017), containing information about 1000 liner carriers, as well as 3000 airports, upgrading is a continuous process and concerns the reference airports, destinations, and flight information. The exchange of information also enhances the sphere of international tariff rates and in practice, no airline can maintain a long-term competitive advantage based on price levels over the competitors. The of competition is oligopolistic, which again brings out certain considerations concerning the efficiency of deregulation of the competitive bidding for air transport services, especially price liberalization. Competitive rivalry undoubtedly exists, but it can be considered a threat in the following cases:

1. In the conditions of non-existing or insignificant barriers to entry of new competitors in the market (for example, a new airline must pay the same fares with the existing companies, i.e. there will be no extra access costs for using airport terminal services);
2. Entrance of an airline on a definite market, realizing short-term profits and abandoning it, without serious losses;
3. A breakthrough of an airline based upon price advantages, until there is a response from existing carriers, which usually takes time.

International networks for cooperation in the air transport sector are of particular importance in the period following deregulation and liberalization, because of their importance for the introduction of innovations and other advantages bringing forward raised economic efficiency. The influence

¹ SESAR Deployment Framework Partnership Agreement (FPA) was signed on 5.12.2014 by the

European Commission and the Consortium for the project implementation

of alliances between mutually connected companies is considered positive and promoting interactive learning between participating organizations through sharing of knowledge and information. The whole process is facilitated by trust, sharing of common values, and working methods. In order to determine the way of development of interconnected networks and their capabilities and constraints in terms of economic performance and competitiveness, the network structure, influenced by innovations and geography reasons is of utmost importance for alliances' establishment and functioning. In similarity with clusters, in terms of scope, aviation networks can be intra-regional and inter-regional.

As far as resources and competencies are concerned, internal development, also known as "organic growth", based upon complete decision-making autonomy, and the ability to grow within the frames of the external environment, can be achieved by a company, usually by means of horizontal integration (i.e. mergers and acquisitions). Although often applied, this way of implementing a growth strategy is risky because of the significant financial resources required, especially in the airline transport. (Malatesta & Thompson, 1993) In order to reduce the financial and other types of risk of mergers and acquisitions, other alternatives are applied in practice, such as strategic partnerships (Obregon, 2015). The objects of attention are the alliances, which are dependent on regional innovation systems, without significant obstacles concerning the maintained regional policies. In some cases, there are additional stimuli, such as external factors or side effects, as well as the existing social capital, which underlie cooperation. On the other hand, clusters also implement joint investment projects, to exploit new business opportunities. Also, in comparison to other methods of implementing a business strategy, in the case of strategic alliances we can distinguish between advantages and disadvantages. According to Rangan and Yoshino (1996), the strategic alliance can be determined based on the following features:

- Autonomy of partner companies after completion and during the existence of the strategic alliance in the field of activities, which are excluded from the contract agreement (while in the cases of acquisition or merger, at

least one company loses its economic and organizational autonomy);

- The participating companies are jointly responsible for the alliance's activities and mutually share benefits, while in other types of inter-company relationships (such as licensing, franchising, etc.), the participants also remain independent, but one of them defines the framework and conditions in the negotiation process;
- The contribution of the participating companies towards the strategic areas (meaning technology, marketing, and distribution) is permanent, with existing synergies, which are important results of each strategy. Therefore, alliances offer a joint, but flexible way to the development of a common strategy.

Together with clusters, alliances bring forward positive effects when each stakeholder gets added value. The generation of cost data within a strategic alliance is a factor for assessing the beneficial effect, aiding parties in the process of determining the duration and type of the established relationship created (Pietras & Stormer, 2001) While exploring new business opportunities, the partners must be flexible and compromise.

In turn, the same way as alliances, clusters establish strategic partnerships based on the opportunities to develop value chains. Other similarities between strategic alliances and clusters are as follows:

- The existence of trust between partners due to the need to share internal and market information;
- The alliance participants support the principle of free will and maintain their economic and organizational independence;
- The cooperation is of open and dynamic type, encouraging the use of opportunities arising during its implementation.

At the same time, participants in the alliance, as competitors in non-contract areas, cannot establish monopolistic structures, such as cartel. This further contributes to a stimulating business ecosystem. Both the Cluster and the Strategic Alliance clearly present the additional benefits for all participants.

The strategic alliances, typical for the air transport sector (Albers, Koch, & Ruff, 2005) cover different fields of activity:

- Code sharing (agreements between two airlines according to which each one may use the code of the other for the provision of flights in the general directions);
- Reservation of capacity (separation of a definite number of passenger seats for the passengers of an airline company on the flight boards of the other);
- Mutually connected frequent flyer programs;
- Common market and sales actions;
- Establishment of joint ventures for catering, ground handling, and airplane maintenance services;
- Joint flights for passengers and freight;
- Joint supplies and use of insurance services.

Wide represented are alliances that achieve mutual code sharing, perform joint frequent travel as well as overall marketing programs, aiming at increasing the market potential for all the members while dealing with the challenges outcoming from the globalization of air transport. Among the most important prerequisites is the existence of GDS¹, connecting the airline companies and the tour operators, initially at the regional level (Air France, Iberia, and Lufthansa established the system, Amadeus, together with SAS at the first stage). The alliance's purpose is to offer global travel services, the tactics being membership and a representative from every regional market. Thus, the geographic principle is applied, but not expressed in geographic concentration, as is the case with clusters. The major global airline alliances are represented below:

Table 1. Strategic alliances of airlines²

Alliance/Partners	Countries served	Revenue (Approx.)	Fleet size
Star - 15	124	USD 68 billion	2,058
One World - 8	135	USD 51 billion	1,983
Sky Team - 6	114	USD 50 billion	1,224
Wings - 3	100	USD 25 billion	899

Source: (Matsavela, 2014, p. 49)

Global alliances will continue to change in scope (each airline may join another alliance) and in the field of activities undertaken (for instance, Star Alliance own an IT - hub).

Traditionally, airlines and airports work together to establish a strong relationship with customers and suppliers, but there is a tendency towards establishing strategic alliances this time between airlines and airports. The tendency to proceed from purely market ties to closer cooperation activities is expressed in countries such as the USA, but in Europe, this process is lagging behind. The sharing of investment costs leads to a reduction of the financial risk in investment projects' implementation, hence the formation of an alliance of the "airport - airline" type, based on

a long-term mutual activity commitment is a flexible form enhancing the possibility of raising competitiveness.

The access, quality, and availability of facilities are factors, affecting both airports and airlines. For airline transport users, additional airport functions are important, while airlines assess ground facilities, number of check-in points, gates, airplane parking facilities and maintenance facilities. The task of the airport management is to provide for and maintain the infrastructure facilities, as part of the inbound and outbound logistics.

The potential areas of cooperation between airlines and airports fall into three main categories: capacity, marketing, and security. Capacity-

¹ Global systems for the allocation of seats

² Alliance Qualifyer, established by Swiss Air dissolved in 2002. Alliance Wings, with members

Northwest Airlines and KLM stopped existence, but Continental and KLM continue their collaboration

oriented cooperation is defined as a very promising area, and objectives include operational issues (optimization of traffic, improvement of communications by means of ICT, etc.) The existence of economic benefits requires long-term coordinated cooperation in the investment area. Strategically oriented marketing cooperation is based on the pursuit of a complex image.

In general, there is also evidence that modern air transport alliances resemble clusters by including cross-sectoral partnerships to tackle economic problems as well as the most important environmental problems (Goel, 2003)

4 CONCLUSIONS

Despite the similarities between the industrial cluster and the alliance generated by the value chain, there are also obvious differences in the following:

First of all, the requirements for the economic potential of an enterprise and the scale of development for new members within an industrial cluster and those entering a value chain alliance are different. For industrial clusters, barriers to entry and exit are low, without scale requirements. Most participants in the industrial clusters are SMEs, specialized in similar industries, while in the alliance, the barriers to entry and exit are relatively high. The structure of the alliance is mainly formed by companies, located along the value chain, with vertical complementary components emphasizing integration. Thus, the alliance could be horizontal or vertical.

Secondly, spatial layout requirements are different due to geographic concentration based on proximity for the industrial cluster, even if it is trans-border, while the alliance formed as a response to the contemporary competition within

the global management environment, with highly developed ICT requires interregional, even global spatial layout.

Thirdly, cluster motivation is concentrated on shared investment and transaction costs, customers, suppliers, raw materials, etc. The main reasons for the establishment of a strategic alliance are the need to tackle the challenges of the global competition as well as the economic potential of the participants. However, most important for both strategic options is the opportunity of sharing the R & D costs.

Fourthly, the industrial cluster establishes relations with external institutions, public authorities, etc., while for the alliance concentrated basically on business development, external intervention, aiming at any regulation of the activity is undesirable and unnecessary.

The analysis proves that industrial clusters and supply chain alliances have common features, but also differences. At the same time, the industrial cluster can provide the basis for building and adapt the strategic alliance by coordinating human resources, technology, and innovation in a given sector. On the other hand, the strategic alliance can regulate the competitive and cooperative relationships between enterprises within the industrial cluster through offering a flexible structure and working regime, helping the obtaining of competitive advantages.

The study of the correspondence between strategic alliances and industrial clusters shows the degree of integration and optimization of resources, enhancing the possibilities for coordination and sharing of competencies to increase the economic potential (Yuanqiang, 2010).

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