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Evaluating Possibilities of Regional Tourism Services in the Air-passenger Transport Global Market (A Case Study of Latvian Market)

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Abstract The research outlines the issue of specific regional service distribution in small countries' outbound tourism market, as ancillary non-aviation services on the global market of air-passenger transport services (as illustrated by the Latvian market data). The article provides the statistics of passenger flows at Riga airport, which allows evaluating the number of foreign airline passengers arriving in Latvia, considering them as potential consumers of ancillary services in the regional spheres of tourism, leisure, education, etc. The material puts forward the idea of regional service aggregation in the framework of the Next Distribution Capability model introduced by the International Air Transport Association, in cooperation with airline carriers, Global Distribution Systems and international travel associations. The regional aggregator's potential profit was also assessed; and a number of recommendations about its setup and functional structure, as a business company, were offered. PEST-analysis was conducted demonstrating how various factors influence the effectiveness indices for market launches of air-passenger transport services. The paper also emphasizes the expediency of engaging state administration and local government bodies in carrying out a project aimed at creating an aggregator for global distribution of regional services to enhance Latvia's upmarket image and its promotion abroad.

Keywords Air-passenger Transport, Regional Services, Ancillary Non-aviation Services, Global Distribution, Booking, Aggregator

1. Introduction

Since 1991 when the country restored its independence from the Soviet Union, travel and tourism for the Republic of Latvia was considered a priority industry. Inbound and domestic tourism, as well as regional tourism, is the subject of scientific research in the government plan for economic and political development of Latvia. In 2014 Ministry of Economics of Latvia has taken a major step introducing a travel and tourism development policy for 2014-2020 where highlighted the significance of the tourism for Latvian economy and focused on the needs to encourage Latvian tourism competitiveness, promote true values of rural and nature tourism and boost dynamic growth [1].

The Organisation for Economic Co-operation and Development (OECD), where Latvia became a member state in 2016, is an intergovernmental forum in which member countries compare and exchange policy experiences, identify good practices in light of emerging challenges, and promote decisions and recommendations to produce better policies for better lives. The OECD Tourism Committee acts as the OECD platform for exchange, monitoring structural changes affecting the development of domestic and international tourism and support the sustainable economic growth of tourism. OECD guidance strongly outlines the need of long-term tourism development strategy in fast-changing environment of the digital era due to the essential economic contribution of the sector [2].

Young scientists Salaeva and Tarakanova [3,4] dedicated their scientific studies to Latvian tourism focusing on Jurmala region, and its increasing importance as one of Latvia's main drivers of economic development, published several articles and delivered powerful speech at international conferences.

Tourism and hospitality services are heavily dependent on marketing because of the sector specifics. Therefore marketers in their scientific works recognized a key role of marketing communications in the tourism industry. Prominent Latvian marketer Voznjuka in her doctoral dissertation investigated the concept of territorial marketing in travel and tourism analyzing Latgale region [5].

Researchers and scientists echoed on the tourism instrumental role to bolster economic growth. However, author believes that existing research ideas are struggling

to fully address the issue of sustainable tourism growth and lack practical recommendations and efficient solutions for improving economic and social returns generated by tourism. Author offers a new revolutionary approach to tourism development through effective channels of travel service promotion and sales leveraging on information technology and innovation, particularly, Global Distribution System.

Currently, along with air carriage, passengers are able to book various ancillary services (AS) [6]: ground or water transportation; airport transfer; hotel accommodation; car rental; VIP services, etc. Such services are considered to be common standard ones in travelling and tourism and can be booked via Global Distribution Systems (GDS), such as Amadeus, Galileo, Sabre and others.

It should be taken into account that:

- air carriage is certified by an e-ticket issued by an airline company or international electronic billing systems, for instance, BSP (Billing and Settlement Plan) under the authority of IATA (International Air Transport Association);
- ancillary non-aviation services are recorded in MCO (Miscellaneous Charges Order) issued by an airline company or in EMD (Electronic Miscellaneous Document) by BSP IATA. Such sets of services are presented as packages, informationally and technologically connected with the corresponding e-ticket.

Along with that, specific regional tourism services are unavailable for reservation or marketing in a single package together with air carriage, especially in small countries, which greatly differ in their national, cultural, natural, etc. features and charm. Most crucially, they can easily arouse high interest in airline passengers coming there on leisure days, for example at weekends and on public holidays.

Such service outage on the global air transport market is mainly explained by poor organization and suppliers' lack of inventory systems to store the service content and ensure their online reservation, allocation problems and underfunding.

The main spheres for granting specific regional services are as follows:

- accommodation provided by 3* (and cheaper) hotels, not being part of international hotel networks;
- rural tourism;
- city breaks;
- medical and wellness tourism;
- guided tours to regional areas, towns and places of interest;
- one- or two-day nature-filled vacation that includes hunting, fishing, mushroom picking, hiking, horse-riding, safari, boating, relaxation in a sauna, etc.

Numerous one- or two-day guided tours to Latvian sights and recreation tours priced from 30 to 45 euro with various service packages are listed on websites of local travel agencies.

The enumerated services, as well as non-mentioned specific regional ones, which are to be distributed in the global air transport market, can be referred to as Regional Specific Ancillary Services (RSAS) and, in respect to Latvia - Latvian Specific Ancillary Services (LSAS). Here foreign air passengers are regarded as target LSAS consumers.

LSAS global market distribution has the following basic goals:

- offering foreigners leisure-time activities during their short or mid-term stay in Latvia (5-10 days);
- service sector employees' income level increasing and employment boosting;
- Latvia's international promotion.

LSAS can be characterized by:

- a short service provision period, mainly 24 hours or weekends and holidays;
- comfortable conditions including providing necessary equipage;
- the possibility to reserve and sell them online in a single package with air carriage via GDS, airline and travel companies' websites.

The suggested solution to the existing problem is underlain by the introduction of a regional aggregator to distribute LSAS with the help of the Next Distribution Capability model (NDC) of International Air Transport Association (IATA) [7].

2. Estimating the Number of Foreign Air Passengers Arriving to Latvia, as Potential LSAS Consumers

This task can be approached using the official statistical data about the passenger flows at Riga airport [8-10], which are presented in lines 1-4 in Table 1. These data correspondingly reflect:

1. Overall air passenger flow (arriving and departing) (P).
2. Percentage of transfer passengers from the total passenger flow.
3. The number of connecting passengers (P_t).
4. The number of performed flights (N).
5. The calculated data obtained by the author and presented in lines 5-8 in Table 1 cover:
6. Passenger flow without transit (P_k).
7. The number of arriving non-connecting (terminal) passengers (P_{pk}).
8. Annual growth/decrease percentage of P_{pk}.(ΔP_{pk}).
9. The average number of non-connecting passengers arriving per flight (P_{pkr}).
10. The estimated data got under certain assumptions made by the author show the number of terminal foreign passengers arriving in Latvia P_f. The data are presented in line 9, Table 1.

Table 1. Statistical, calculated and estimated data about passenger flows at Riga airport

№	Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	Passengers. Total (P), (th)	2495	3161	3691	4067	4664	5107	4768	4793	4814	5162	5401
2	Transit, (% from (1))	4	5	14	33	38	37	35	32	29	25	27
3	Transit (P_t), (th)	100	158	517	1342	1772	1890	1669	1534	1396	1291	1473
4	Flights (N), (th)	40,2	47,3	57,2	60,1	68,1	72,9	68,6	67,4	65,8	68,1	68,1
5	Non-connecting passengers (P_k), (th)	2395	3003	3174	2725	2892	3217	3099	3259	3418	3871	3928
6	Arriving non-connecting passengers (P_{pk}), (th)	1200	1502	1587	1362	1446	1608	1549	1629	1709	1935	1964
7	% growth of P_{pk} (ΔP_{pk})		25,2	5,6	-14,2	6,2	11,2	-3,7	5,2	4,9	13,2	1,5
8	Average number of arriving passengers per flight (P_{pkn})	60	53	55	45	43	44	45	48	52	57	58
9	Arriving foreign passengers (P_f), (th)	772	964	1020	876	930	1034	996	1044	1099	1244	1263

The table is set by the author on the ground of the official statistical data for Latvia.

In compliance with the statistical data to 2015, about 80% of passenger turnover is handled to 16 destinations (P_d) [10] (Figure 1), especially more than 1/3 (approximately 38%) to Germany, the United Kingdom and Russian Federation.

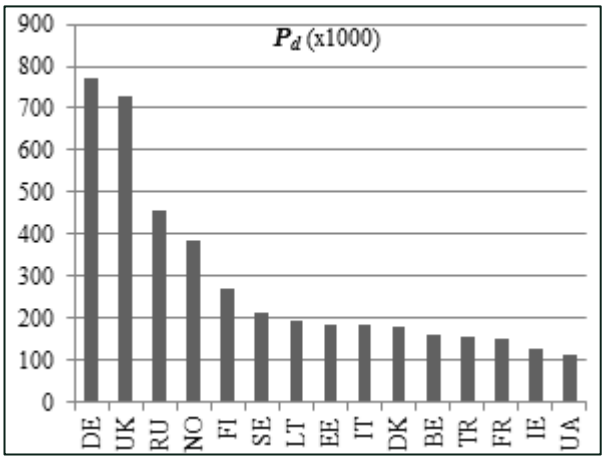

Figure 1. Grading the main passenger destinations at Riga airport. A self-devised diagram on the basis of the official statistical data for Latvia

Firstly, let us estimate the number of arriving (terminal) airline passengers with account of transit. Logic and the statistical data given in [10] suggest that the number of arriving passengers and the number of departing ones (without transit) are almost equal. For instance, 2015 accounts for 2585 and 2577 correspondingly, so the number of arriving (terminal) passengers can be defined by the expression:

$$P_{pk} = ½ \ (P\text{-}P_t) \qquad (1)$$

The calculated P_{pk} values and their dynamic pattern are presented in line 6 Table 1 and in the diagram (Figure 2).

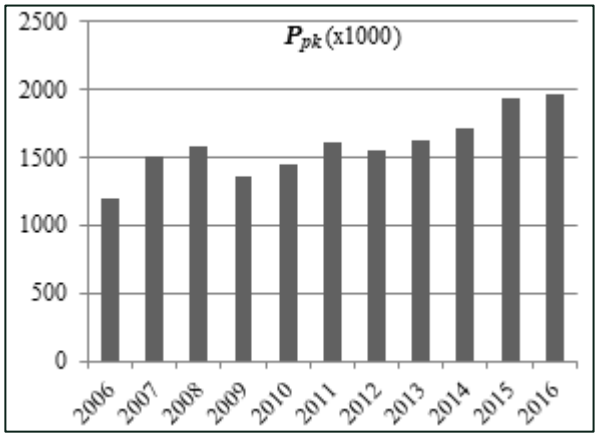

Figure 2. Dynamic patterns of non-connecting arrivals. Self-devised diagram

The bar chart in Fig. 3 devised from the calculations by formula (1) (line 7, Table 1) depicts the dynamic pattern of relative annual growth/decrease (%) in the number of arriving terminal passengers (ΔP_{pk}) with an average annual increase of about 5.5% in recent decade. The P_{pk} estimated number calculated according to the formula (2), and the P_{pk} average value with the annual growth $\Delta P_{pk} \approx 5.5\%$ can be used to estimate the number of arriving airline passengers and predict the trend in the short term – the nearest two years.

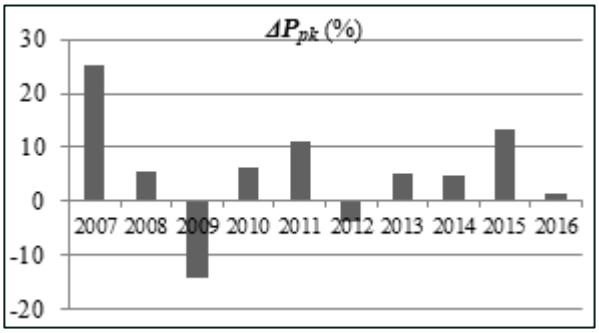

Figure 3. Dynamic pattern of relative growth/decrease in the number of arriving terminal air passengers Self-devised diagram.

To calculate the total number of arriving foreign airline passengers (P_f) let us suggest the formula:

$$P_f = P_{pk} (k_c\ d_{fc} + (1-k_c)\ d_{fl}) \quad (3)$$

where P_{pk} – the value defined by the expression (1);

k_c – the number of passengers arriving on-board traditional airline companies;

d_{fc} – the share of foreigners in the passenger flow taking traditional airline companies' flights;

d_{fl} – the share of foreigners in the passenger flow travelling on low-cost air carriers' flights.

It should be noted that official statistics on k_c, d_{fc} and d_{fl} indicators are not kept. However, having conducted an analysis of the flight schedule at Riga airport, the local labor migration data and expert evidence, it can be most probably assumed that:

- the share of passengers flying with traditional airlines in the overall passenger flow makes k_c = 0.9, whereas the number of those choosing low-cost carriers is $(1-k_c) = 0.1$.
- the share of foreigners in the overall passenger flow at Riga airport makes d_{fc} = 0.67 of the total passenger flow handled by traditional air carriers; and $d_{fl} = 0.4$ is taken by low-cost carriers.

The calculated data (P_f) under the made assumptions are presented in line 9 Table 1 with a 2017 forecast and illustrated in the bar chart in Figure 4.

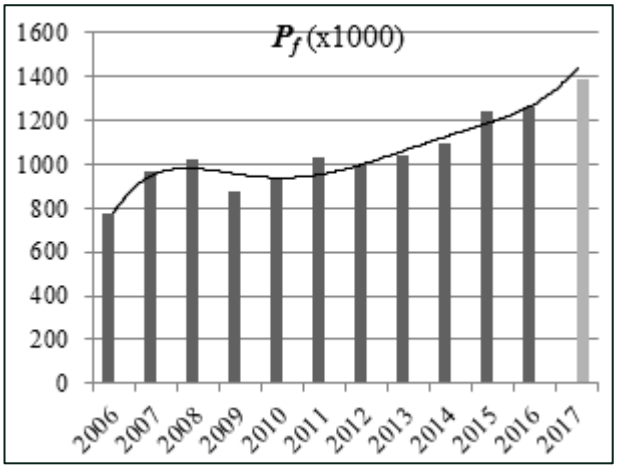

Figure 4. Dynamic pattern of non-connecting foreign arrivals and an outlined trend. Self-devised diagram

Fig. 4 shows an approximating curve of the P_f, trend obtained using Trendline Excel tool set to estimate a 2017 forecast. A high coefficient of determination $R^2 = 0.9132$, close to 1, suggests that the approximating curve showing the changing number of arriving terminal air passengers is quite accurately described by the polynomial:

$$y = 0.1042\ x^5 - 3.639\ x^4 + 47.804\ x^3 - 283.74\ x^2 + \\ +746.71\ x + 271.09 \quad (5)$$

The trend allows to suggest that in 2017 the number of arriving foreign air passengers may increase up to 1400. The given calculations were conducted in 2017. Next calculations carried out using the received statistics to 2017 [11], provide the indicator value equaling 1388 (the black bar for 2017). Thus, the error in forecasting makes less than 1%, which makes it possible to use the expressions (5) for future short-term predictions.

If we assume that no more than 1% from the arriving foreign air passengers use LSAS, the total amount of booked services anytime soon will mount to S = 14 th on average annually. The conducted estimated calculation of the S value allows assessing the potential LSAS distribution on the global market of air transport.

3. Difficult Issues about Introducing Aggregator for LSAS Distribution on the Global Market of Air-passenger Transport

Prior to exploring problems about launching LSAS in the global market, it should be noted that IATA (International Aviation Transport Association) is currently applying a new technology called «New Distribution Capability» (NDC) [2], that allows to aggregate non-aviation AS and air carriages in single packages. The key role is performed by an aggregator (considered a system technologically and a company structurally) connected through the corresponding interface to the CRS (Computer Reservation System) of airline companies, global GDS or information systems (IS) of travel agencies.

Fig. 5 shows a self-devised schematic representation of such technology functional and structural implementation in the given sphere [12]. The dashed lines show offline-connections (contract relations, business accounting, supervision and reporting) and the arrows illustrate technological online-connections (service reservation and marketing) between regional and global market participants. CRS_{AL} is an inventory system owned by the air carrier ensuring reservation, sales of flights and suppliers' ancillary non-aviation services with direct registration in MCO (through their offices and websites). $CRS_{ag,}$ in its turn, is the aggregator's inventory system ensuring allocation and supervision of LSAS resource, as well as the interface for booking supplier's services via CRS_{AL} and GDS. GDS ensures reservation and marketing of flights and suppliers' ancillary non-aviation services with their registration in EMD.

The first problem of LSAS launch in the global market is technological one, as it is deemed necessary to develop the CRS_{ag} reservation system and the technology of an aggregator functioning.

The second problem lies in the field of the aggregator's economy. To describe it fully let us roughly estimate potential profit from LSAS sales taking into account the formulated calculation premises about the number of orders. According to the analysis of the data got from the

mentioned Latvian tour companies' websites, the charge for a local one-day tour or a city break ranges between 30 and 40 euro per person. This charge comprises a minimum set of services, usually including the attendance of a group lead, a guide and a bus ticket. It should be emphasized that such a service set is appropriate for offering only to natives, whereas foreign air passengers may get puzzled when being additionally charged. Foreigners should get a full package when booking, and it should include meal service, tickets to museums and other services, along with air carriage itself.

Let us assume that an average price for a full LSAS package will make about 60 euro (C = 60 euro). On top of that it is necessary to estimate the cost of LSAS resource allocation, aggregation and their distribution on the global market. Should the cost of such services is estimated according to the proposed model and following the examples of GDS and CRS, it will not exceed 5 euro – V = 5 euro/service. From our point of view, the total cost (C+V) = 65 euro should not disaffect LSAS consumers.

With all made premises the calculated annual revenue of LSAS suppliers (D) and the aggregator (G), correspondingly, are rated as follows:

$$D = C \text{ x } S = 14000 \text{ x } 65 = 910000 \text{ (euro)},$$

and

$$G = C \text{ x } V = 70000 \text{ (euro)}.$$

Let us assess the impact of exogenous factors and business risks using the method of Pest-analysis [13] (Table 2).

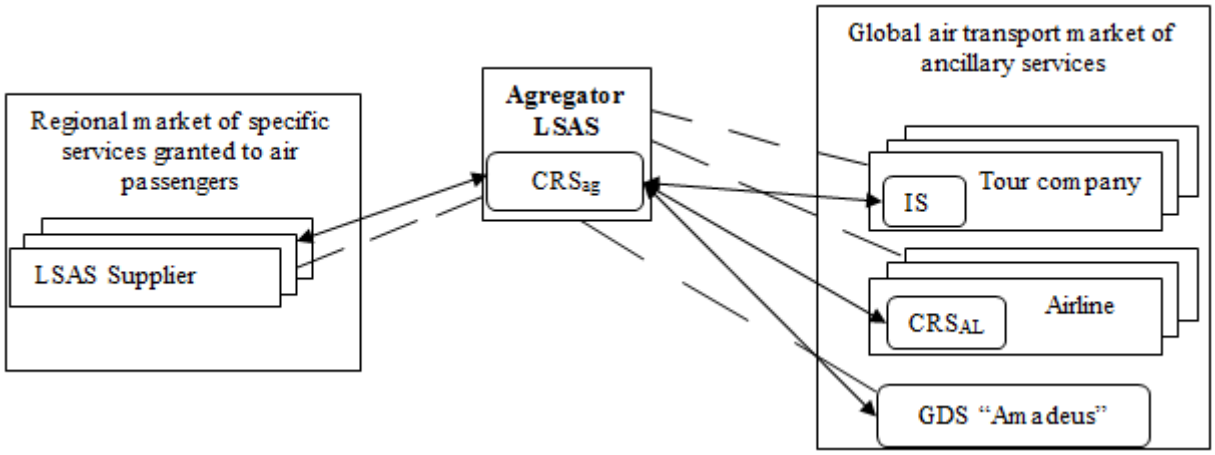

Figure 5. Schematic representation of LSAS functional and structural distribution. Self-drawn schematic layout

Table 2. PEST-analysis LSAS development

Factors	Factor impact on LSAS development
Political	LSAS development and their allocation for disposal of passenger flights at an aggregator's platform is fully in compliant with the main public policy priorities in the sphere of export potential boosting, rural tourism development and Latvia's promotion abroad. global air transport market of ancillary services
Economic	The AS market, where an aggregator is to function, is fast-growing. A high rate of foreign air passengers' purchasing power will contribute to the LSAS market development after due managerial procedures and providing direct Internet access to these services. At the same time, the annual revenue estimated at 70000 euro, even if it could be doubled, is evidently not enough to ensure the LSAS aggregator's effective performance.
Social	Latvian personnel skill level in the spheres of IT and tourism is very high, so no problem will occur in exploring most modern distribution models like NDC. LSAS development and their distribution for disposal on the global air-passenger market will contribute to an increase in the number of up-scale workspaces around Latvia, people's occupational level and wealth.
Technological	Latvia is reckoned among advanced countries exploiting info-communication technologies, which can be successfully adopted only together with the aggregator's corresponding IT under development, including CRS_{ag} and necessary interfaces with external systems.

4. Recommendations about Solving Problems with LSAS Distribution Framing on the Global Market of Ancillary non-aviation Services

The main recommendations and their short grounding can be outlined in the following points:

1. Conceivably, there can be no more than one operating aggregator in Latvia, as the calculated revenue from LSAS distribution (about 70000 euro annually) cannot be enough to leave gaps in the market for several aggregators. In addition to that, even one aggregator may find it highly problematic to achieve competent rates of operating performance, unless all the parties concerned (public and local authorities, for-profit organizations in the sphere of tourism and others) pool together efforts in promoting such a vital project of LSAS distribution on the global ancillary non-aviation service market. All the listed parties concerned may also join together efforts to develop a single aggregator for the Baltic States.

   To begin with, the project managers should identify all potentially related participants, to carry out a feasibility study and reveal possible sources of funding. This process can be managed and supervised by the following governmental organizations: Tūrisma Attīstības Valsts Aģentūra, Latvijas investīciju un attīstības aģentūra, in collaboration with Association Latvian Travel Agency, Lauku Tūrisma Attīstību Latvijā, Latvijas Lauku tūrisma asociācija, Lauku Celotājs, etc. It is also essential to hold extensive consultations with Air Baltic, as a company performing flights carrying 50% of all passengers passing through Riga airport.

2. Depending on the decisions taken by the project managers, there are several ways to create an aggregator in the framework of:
   a) joint-stock company, partially government- and/or local government-owned, and supported by involved service-oriented companies;
   b) limited liability company supported by involved service firms;
   c) travel agency running an inventory CRS, for instance Tez Tour;
   d) Amadeus Latvija.

   The most feasible options of ensuring an aggregator development and its future operation with positive regard to the project and local specifics are the first and third ones (a, c).

   The least feasible one is the second option (b) due to the difficulty in assigning the project leader and its funding.

   The most efficient one in terms of development and commercialization is the forth option (d), as Amadeus Latvija possesses all the necessary software toolkit for carrying out such projects. Although, Amadeus Latvija is an affiliated company and its support granted to such a project can stay beyond commercial interests. In a similar vein, Amadeus Latvija (and this is under its scope) can render distribution and consulting services, as well as supply an inventory product to the aggregator.

3. It is necessary to go into the issue of the project co-financing by the European Union funds at the early stages of the aggregator's CRS_{ag} and IT development, as well as the possibility of gaining public funding on the account of the state international promotion.
4. It is essential to ensure the aggregator's efficient performance, whatever its structure could be, it seems necessary to enhance the variety of distributed LSAS. The listed economic indicators were calculated in terms of one-day LSAS only distribution among foreign air passengers. However, this technology can also be applied for marketing multi-day home-base tours, accommodation in capital and regional low-star hotels, private houses and other market participants not running their own CRS, expanding the LSAS consumer group, adding there, for instance, railway and ferry passengers, etc.
5. If the aggregator is developed at the premises of a travel agency running an inventory system, CRS_{ag} should be chosen from Amadeus products, which could ensure the interface and Amadeus GDS compatibility.
6. LSAS suppliers should guarantee the deployment of this CRS_{ag} service resource and supervise it in order to ensure online booking. To achieve that, these companies should run remote dispatch terminals and keep an in-house operator controlling the LSAS resource.

5. Conclusions

The article gives positive regard to an aggregator development aimed at distribution of specific regional services for incoming tourism in small countries (as exemplified by Latvia) on the global air passenger market. The research contains the author's calculated estimates for the amount of arriving air passengers, potential LSAS consumers, on the base of the official statistical data provided by Riga airport. The author also proposed a schematic representation of the aggregator-based LSAS functional and structural distribution, exploiting software tools of the NDC project launched by IATA. The latter was

strengthened by providing the aggregator's estimated revenues and formulating recommendations about its development and effective performance maintenance.

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