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Airport Development Strategies for Regional Airports in Latvia: Riga and Daugavpils Airports

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Introduction

Current performance and future prospects of regional airports is subject to a bundle of social, political, economic and technological factors. In fact, air transport sector and its development increasingly depends on changing role of means of cargo transport, global and regional economic and trade tendencies, increasing fuel prices, role of trade partnerships overseas, nationally and regionally, allocation and reallocation of different resources and a series of other indicators residing in global, national and regional political, economic and technological macro-, meso- and micro dimensions.

Regional airports have enjoyed far less attention as national airports due to existing national policies and development strategies. As a result, regional airports become underestimated in terms of their performance and competitive edge. Nevertheless, due to increasing globalisation and trade it is likely that passenger flows and cargo volumes will follow a paradigm of increase. Consequently, regional airports will be ineligible to assist the national airports and enable transport and handling of increased cargo flows in order to correspond to the growing demand. Indeed, regional airports bear a potential for servicing the air cargo market needs on macro-regional, national and regional scale. In this, they are also capable of accelerating regional development and safeguard better economic performance. Respectively, this study is a response to the changing global and regional setting, which, in turn, causes shifting in respective social and economic structures. It aims at showcasing potential development roadman for a regional airport, which has been highly underestimated on national level.

The study deals with the development patterns of the regional airports in Latvia and envisages the development tendencies on the short- and long-term basis. This study serves as an initial guide for regional planners and related sector stakeholders to facilitate the regional development programmes and strategies and to reveal the importance of the regional airports for the regional socio-economic development.
1 Air Transport Developments Patterns in the Baltic Sea Region

Air transport is a vital component of Baltic region international logistics networks, essential to managing and controlling the flow of goods, information and other resources from the source of production to the marketplace. It is difficult to accomplish any international trading, global export/import processes, international repositioning of raw materials/products and manufacturing without a professional logistical support. It involves the integration of information, transportation, warehousing, material handling and packaging. Company, such as FedEx, UPS, TNT, and DHL Express provide airfreight forwarding services between Baltic region and other countries.

In Baltic State larger cargo airlines tend to use new or recently built aircraft to carry their freight, but many use older aircraft, like the Boeing 707, Boeing 727, Douglas DC-8, DC-10, MD-11, Boeing 747, and the Ilyushin Il-76. Short range turboprop airliners such as the An-12, An-26, Fokker Friendship, and British Aerospace ATP are now being modified to accept standard air freight pallets to extend their working lives. This normally involves the replacement of glazed windows with opaque panels, the strengthening of the cabin floor and insertion of a broad top-hinged door in one side of the fuselage. Usage of large military airplanes for commercial purposes, pioneered by Ukraine's Antonov Airlines in the 1990s, has allowed new types of cargo in aerial transportation.

Key aspects of civil aviation in the Baltic Region are:

- Aviation infrastructure and management remains the responsibility of the public sector;
- Several major airlines operate from the major airports;
- Passenger traffic has steadily increased; cargo traffic, however, remains low.
2 Role of Air Transport on the Regional Scale – Case of Latvia in the BSR

2.1 Role of Cross-Regional and National Transport in Latvia

In Latvia, it is not necessary to use air transport for local cargo transportation, due to small area, lack of production and sales operations that require urgent delivery. Therefore, relatively well-developed land infrastructure makes use of alternative ways of transportation much more effective and economically efficient.

The implementation of intraregional airfreight transportation in Latvia compared with other countries in the Baltic region is average. The main reason is well-developed alternative cargo transportation infrastructures (road, sea and railway). But it is possible to improve the position of air cargo transportation between Latvia and Germany, because Germany for Latvia is one of the most economically important partners in the Baltic region. German Cargo Airlines are among the most influential and sustainable airline that can help in the development of airfreight in Latvia.

2.2 Role of Inter-regional / international transport for Latvia

There are three operating airports in Latvia: Riga International Airport, Liepaja International Airport and Ventspils Airport (Figure 1.). A fourth airport at Daugavpils (southern part of Latvia) is currently at an early development stage. Nearly 99% of all freight transport in Latvia goes through Riga International Airport. When Daugavpils International Airport is open, the airport will probably be a destination for airlines from Riga – the first real Latvian cross-country flights, as well as probably from Russia and Germany due to their cooperation.
In the case of Latvia the Government has also stressed the importance of regional airports in but at the same the Government has chosen not to participate in the ownership and in the operation of the regional airports but has left this to the municipalities where the airports are located. However, it should be mentioned that all investments and operational costs of the air-navigational systems – also in regional airports – are paid for by the Latvian Air Navigational Services – LGS.

Riga International Airport is state enterprise.

Regional airports Liepaja and Ventspils are State Municipality enterprises. Currently they are serving General aviation. The development of airports infrastructure has been started.
Airport "Jurmala" at Tukums is private airport, which is certified for commercial aviation activities at day and night in VFR conditions. There are ongoing activities to upgrade to category 7 and prepare airfield, service personnel and procedures for Instrumental Flights according CAT I precision approach procedures.

Daugavpils is developing airport. Local Municipality is looking for funding options to reconstruct Daugavpils airport "Lociki" and develop it up to level to provide services for International commercial aviation. Design has been started.


Interregional airfreight transportation in Latvia is almost not realized, because there is practically no demand for cargo transportation from Latvia to other countries, located far outside the Baltic region (because there is no constant need for exports and imports of goods between countries). Also a well-developed port system for the long routes, which is more beneficial for Latvia than airfreight carriage.

The air cargo SAS Cargo, Lufthansa and express package company, such as Fed Ex, DHL, UPS and TNT ensure one-day delivery within Europe and two days for the rest of the world. Some of these courier companies are using local airlines to implement the transportation of cargo.

2.3 Latvian Airports Performance and Statistical Indicators

The only airport of importance for scheduled traffic until now has been Riga International Airport, which has experienced a dramatic traffic increase after Latvia’s membership of the EU.
The general statistics of passengers and cargo flows in Latvia is shown at the Figures 2, and 3.

**Fig. 2: Passenger flows in Riga International Airport**

![Passenger flows in Riga International Airport](image)

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In 2012 the total volume of cargo increased in accordance of cargo flights launched from Riga to Afghanistan.

3 Development Scenarios for Regional Airports in Latvia

3.1 International Airport Riga

3.1.1 Infrastructure Development of Riga International Airport

On August 4, 2010 SJSC Riga International Airport concluded an agreement with the Ministry of Transport of the Republic of Latvia on the implementation of EU project

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2 Ibid.
„Development of Infrastructure of the Riga International Airport” (registration No. 3DP/3.3.1.4.0/10/IPIA/SM/001).

On September 18, 2013 amendments of the agreement on project „Development of Infrastructure of the Riga International Airport” of the EU fund were signed with the Ministry of Transport that prescribe that the project is being implemented until July 31, 2015 and three new activities are included in the project – reconstruction of apron No. 1, reconstruction of taxiways C and G, construction of a new fire station.

The aim of the project is to improve environmental conditions of the controlled and open areas, enhance air travel security standards and increase the capacity of Riga International Airport.

The total costs of the project are 81,012,846 LVL. The project is co-financed by the Cohesion Fund (41,114,034 LVL) and the state budget (8,255,847 LVL). The remaining costs of the project are covered by SJSC Riga International Airport.

Fig. 4: Infrastructure of Project Activities for Renovation of Riga International Airport in 2013
Renovation of runway pavement surface

Reconstruction of the runway was carried out in 1994 when asphalt concrete surface was constructed on top of the existing runway concrete slabs. Runway surface has been in use for 19 years. Reflective cracks copying the configuration of concrete slabs have emerged on the runway pavement over time.

It is planned that the surface renovation works will involve the repair of surface cracks and touchdown zone lights, incorporation of cable installation into the runway pavement, levelling cutting of the existing pavement, as well as the construction of a new underlayment and a wearing course, and renovation of marking.

Reinforcement of the runway strip and reinforcement of the safety area of northern end of the runway

Reinforcement of pavement of the runway strip and safety area of northern end of the runway will ensure that the potential consequences of an accident will be reduced and speeding up the rescue works will speed up in case the airplane goes down the runway when taking off or landing. It is also planned to carry out the construction of reinforced soil material in the runway strip area on both sides of the runway and at the northern end, which will increase the surface load carrying capacity to the values prescribed for in the technical project.
Construction of additional taxiways E and D

Two new taxiways that connect the runway with the apron area will be constructed during the project for the increase of runway capacity. The new taxiways will allow to clear the runway faster, as well as to reduce aircraft taxiing distance and time on the ground, in this way increasing the capacity and reducing the fuel consumption and thus the amount of harmful emissions.

Basic renovation of taxiways C and G

It is planned to renovate the asphalt concrete covering of taxiway during the basic renovation of the existing taxiways C and G.

Construction of category II lighting system at the northern end of the runway

Airfield approach lighting system at the northern end of the runway will be modernized during the project by adding appropriate category II lights. The works include the installation of the touchdown zone lights in the runway pavement, installation of side row lights in 300 meter long section before the runway threshold, the installation of horizon lights 150 meters from the runway threshold.

Reconstruction of apron No. 1

During the reconstruction of the apron No. 1, the old concrete pavement will be removed and new concrete pavement will be constructed, and the engineer networks (power, low-voltage networks, rain-water drainage) will be reconstructed. Rain-water drainage will be connected to newly built water treatment plants. The existing Densiphalt pavement in the area at the passenger terminal will be removed, new concrete pavement will be constructed at aircraft parking areas and asphalt concrete pavement will be constructed in the remaining area. By carrying out this activity, airfield safety will be improved and soil and groundwater contamination risk will be reduced.
Reconstruction of apron No. 2

During the reconstruction of the apron No. 2, the existing pavement will be fully removed and new pavement will be constructed, and the engineer networks will be reconstructed. The project solution provides for extending the apron by 5 parking spaces (by placing 13 aircraft stands in 3 rows).

Reconstruction of apron No. 3

As in the reconstruction of apron No. 2, the existing pavement of apron No. 3 will be fully reconstructed, and the engineer networks will be reconstructed. The number of aircraft parking spaces will be increased during the reconstruction of the apron No. 3. In total, there will be parking spaces for 22 Class C aircraft (or 18 C and 2 Class E aircraft).

Construction of two de-icing areas

Currently, the treatment of aircraft with de-icing fluid is carried out in aircraft parking spaces at aprons. It is planned to construct new de-icing platforms in northern and southern sides of the airfield during the project for simultaneous de-icing treatment of several aircraft. Full liquid waste collection and treatment will be provided during the aircraft treatment, thus preventing environmental pollution.

Rain-water sewage system and airfield drainage

Rain-water and airfield drainage system will be reconstructed, thus lowering the groundwater level at the airfield and accelerating rain-water drainage during heavy rainfall.

Vehicle washing hangar

Vehicle washing hangar for washing airfield equipment and other airport vehicles will be built in the airport technical area. The building will be equipped with separators of oil and other chemicals, separation of different waste fractions to ensure that the oil and waste leaked from vehicles is collected before being discharged into drains.
Construction of a waste collection hangar

A closed hangar will be built in the technical area where all the categories of waste generated within the airport will be taken before they are collected by licensed companies to be recycled or taken to the landfill. Waste containers placed in the area to ensure waste sorting by category (paper, cardboard, electric appliances, metal, glass, etc.), including a special compartment for hazardous waste (oils, paint, batteries, and other chemical waste) and bulk waste container.

Construction of a fire station

A new fire station will replace the two existing stations, improving airfield safety and reducing the travel time of the fire team to the fire or accident site.

Project implementation process:

1) Detail designs are created, according to which the works are carried out;

2) Agreements for the execution of construction works, construction supervision and construction field supervision are concluded.

Construction works related to the renovation of the runway pavement surface, runway strip reinforcement, construction of additional taxiway E and D, construction of category II lighting system at the northern end of the runway, reconstruction of aprons No. 2 and 3, construction of two de-icing areas, construction of rain-water drainage systems and airfield drainage, construction of vehicle washing and garbage collection hangars started on May 2, 2013 and are expected to be completed by August 31, 2014.

The new additional taxiway E has been built and put into operation, which is already used by aircraft for getting to/back from the runway. The construction work on the northern de-icing area has been completed.

To date, construction works planned for construction season of 2013 related to the construction of rain-water drainage and airfield drainage system, maintenance works on runway strip and runway end safety area, as well as construction of CAT II lighting
system have been completed. Reconstruction of apron No. 3 as well as construction of washing and waste collection hangars is being continued.

In construction season of 2014, in addition to the construction works started in 2013, it is planned to carry out renovation of the runway pavement, reconstruction of apron No. 2, construction of southern de-icing area.

Additional construction activities:

- An agreement with LLC "Merks" for construction of a fire station planned for 2014 has been concluded.

- Works on taxiways C and G have already been started in accordance with the agreement concluded with LLC "Binders". Basic renovation of taxiway G has been finished. Renovation of taxiway C will be carried out in 2014.

- Construction bidding has started for the reconstruction of apron No. 1. Reconstruction of apron No. 1 is scheduled for 2014-2015.

3.1.2 International Riga Airport Passenger Terminal Extension (5th phase)

The aim of the project is to improve environmental conditions of the passenger terminal and increase the capacity of Riga International Airport (see figures 5 and 6).

The total estimated costs of the project will be about 80 million EUR.
Fig. 5: International Airport "Riga" terminal extension (5th phase)
3.1.3 International Riga Airport Passenger Terminal Extension (6th phase)

The aim of the project is to improve environmental conditions of the passenger terminal and increase the capacity of Riga International Airport (see figure 7).

The total estimated costs of the project will be about 60 mil. EUR.
3.1.4 Forecast of Passenger and Cargo Flows at International Riga Airport

In accordance with expert conclusions the passengers and cargo flows forecast in Latvia are shown in figures 7 and 8.
Fig. 8: Forecast of passenger flow
3.2 Regional Daugavpils Airport

3.2.1 The Present Situation at Daugavpils Airport

Until 1994 Daugavpils airport was a former military airport used by Russian Air forces (Figures 14). However, it also served as a civil airport with more than 60,000 passengers per year. Cargo flights were also operated from the airport by the big factories for sales and supply. There were around 7 daily flights to Riga and 1 daily connection to Moscow and Minsk with more cargo charters taking place every week.
In February 2001 Daugavpils airport was certified as Airport Daugavpils and operated for private and charter flights for aircrafts with maximum take-off weight not more than 35 tones.

From June 2002 until now Daugavpils Airport has not been used and is not in operational condition. Actually the condition of the facilities and infrastructure are in poor shape or non-existing.

However, the Daugavpils municipality sees the development of the airport as an important contribution to the economic and social development of the municipality and an instrument and contributor to the development of industrial and commercial activities in the city and for the region in general.
In June 2006 Daugavpils airport with its buildings and structures (incl. RWY 2300m/42m) was transferred to the “Daugavpils Lidosta Ltd”, whose sole owner is Daugavpils City Council.

"Daugavpils Lidosta" Ltd. is created as a tool for airport administration. Administration of the enterprise consists of 3 members of the board (incl. chairman of the board) with equal rights to represent the enterprise. The enterprise does not have airport management structure and technologies related to it yet.

In accordance with the state strategic plans, including the Operational Programme “Infrastructure and Services”, and Daugavpils airport development plan issued in 2006, there is a necessity to work on the opportunities to revive and modernise the airport. The airport could also be integrated with the development of an industrial and technological park, centre of transport logistics and aviation related activities such as a flight school, aircraft maintenance facilities and an aircraft service centre.

3.2.2 Vision and Missions for Daugavpils Airport

In the document “Establishment Conception of International Regional Airport “Daugavpils” from 2007 the visions for Daugavpils Airport have been defined as follows: “To establish an international regional airport “Daugavpils” during the time period of 2007 – 2013, improving by this the accessibility of the region, promoting economic activities and attracting investments for the city and region”.

- The aim is to service:
  - International and domestic passenger traffic,
  - International and domestic cargo transport,
  - Charter flights.

Building up of the necessary infrastructure for establishing logistics centre and industrial zones in the territory of Daugavpils airport.
The document “Establishment Conception of International Regional Airport “Daugavpils” gives and overall description of the proposed airport development, which has been used as framework and input for the present Master Plan.

### 3.2.3 Development of Daugavpils Airport

Daugavpils is the second largest city in Latvia, an important economic centre in Latgale and the eastern border of the European Union. An airport is situated 15 km away from the city of Daugavpils, close to the highway Warsaw-St. Petersburg, 25-30 km from the borders of Belarus and Lithuania, 100 km from the Russian border. The establishing of international regional airport “Daugavpils” will ensure the accessibility of the city and the region and will enable the connection between the city and the centres of Europe and those of the world, will help to improve the economic situation for attracting investments for the region, to support the development of tourism and trade, as well as to increase the freight traffic in the city and region.

The airport will help to integrate into the single network of European transport and to become a member of full value in the air transport of this network. Development of regional airports, including reconstruction of the airport “Daugavpils”, is a significant element of the Latvian transport infrastructure development program for the period of 2007-2013. The development of Daugavpils airport is a priority not only in the development program of the city, but also in the spatial plan of Latgale region.

In order to implement the project Daugavpils City Council founded “Daugavpils lidosta” Ltd. (“Daugavpils Airport” Ltd.) in August 2005 and 100% of the core capital of the Ltd. is owned by the Daugavpils City Council. “Daugavpils lidosta” Ltd. is the owner of the piece of land of 231,77 ha (“Lociki”, Naujene, Daugavpils district) where the former military airport was located.

Pursuant to the regulations of Latvian transport infrastructure development regional airport development program, it is useful to build an international regional airport in Daugavpils within the time period of 2007 – 2013 and a runway fitted for instrumental
flights in daytime and night time, 2500 m long and 46 m wide with an artificial runway surfacing suitable for aircraft types Boeing-737, Boeing 757, AIR- BUS in order to ensure:

- International and domestic passenger traffic,
- International and domestic cargo transport,
- Charter flights,
- Building up of the necessary infrastructure for establishing logistics centre and industrial zones in the territory of Daugavpils airport.

The building of an international regional airport will also lead to further development of other activities aimed at establishing logistics centre and attracting investments and companies which are interested in undertaking business activities in the territory of airport (int.al. other activities are also - leasing out of airport premises and territory to shops, restaurants, offices and tourist agencies).

The carrying out and designing of the above mentioned activities require considerable amount of financial resources and time, the airport, therefore, can be launched as a result of two successive main stages (2014-2020).

During the implementation of Stage I of the project it is planned to launch the airport – for aviation flights of general importance with an unfinished runway. The length of the runway – 1200 m, width – 23 m. The establishing of this kind of air-port will help to:

- Resume and activate the aviation processes on the airport;
- Ensure the preconditions for organization of international and domestic flights;
- Involve the sports-instructional aviation, private aviation, border guard aviation and pilot-amateur aviation in the operation of the airport;
- Position Daugavpils as a city with a functioning airport;
Ensure the preconditions for investment attraction.

The main strip for manoeuvring with the length of 2000 m and the width of 44 m is the basis for establishing an airport. All the activities for launching the airport for aviation flights of general importance (repair work, preparation of documentation, specialist training) are included in full amount into the list of work planned for building and launching the international regional airport “Daugavpils”.

At the same time the activities of collecting and summarizing information will be undertaken in Stage I in order to:

- Work out a technical-economic substantiation for the project of international regional airport “Daugavpils”;
- Investigate the ecological situation in the territory of the airport;
- Develop Master Plan for the international regional airport “Daugavpils”.

During the implementation of Stage II of the project it is planned to build the international regional airport, to launch it and to certify it for commercial flights.

The development program for domestic air transport is now being worked out under the guidance of the Ministry of Transport of the RL and it is planned to decide in this program upon the necessary support from the state in order to provide for ensuring air transport.

Cargo transport is regarded as the most prospective direction of activity of the commercial airport “Daugavpils”, because the airport has an advantageous geographical position, it is close to the borders of neighbouring countries and is within reach of railways and highways.

The border regions of Lithuania also support the establishing of international airport Daugavpils.
The expenses for implementation of Stage II can, according to analogues, amount to 20 million Ls. As the possible financial sources the financing from EU structural funds and other support programs, the state and municipal funds are defined. It is also planned to attract private investments.

The proposed development of Daugavpils Airport will be carried out in phased manner in order to optimize the capital input. There are four phases development of the airport and the required development and investments (Figure 15):

- **Phase 1.** A temporary development of a short runway at the present parallel taxiway. This development will support the reopening and licensing of the airport for small GA airplanes.

- **Phase 2.** This will be the main phase of the airport development where the runway and centre taxiway will be renovated and a new apron will be constructed. Furthermore a terminal building and landside facilities will be constructed. All kinds of operational equipment will be added.

- **Phase 3.** This is an expansion of the developments in Phase 2 where the parallel taxiway will be rehabilitated and an expansion of the terminal building will be added.

- **Phase 4.** In the long run Phase 4 will allow further expansion of the airport both with respect to apron areas and further expansion of the terminal and landside facilities.
Fig. 11: Four phased development of the Daugavpils airport

Fig. 12: Visualisation of the Daugavpils airport
3.3 Forecast of Passenger and Cargo Development in Riga and Daugavpils

It is assumed that the airport will be opened for scheduled service in 2015 with a renovated and upgraded runway with ILS landing systems, a new apron, a modern terminal building and appropriate landside facilities. This is described as Phase II in the physical development of the airport.

It is a well known fact that the present road connection between Riga and Daugavpils is heavily congested and that the road is in poor shape. Upgradings will of course take place in the coming years but the traffic will continue to increase and add to the present problems.

Consequently it is assumed that an easy and swift air traffic connection between Riga and Daugavpils will attract an increasing number of passengers.

It is assumed that domestic traffic to Riga and to the West-Coast (Liepaja) will be established right from the start with 2 daily connections to Riga and 1 daily connection to Liepaja with a 50 seater aircraft. This traffic will gradually increase due to the expected economic growth in the region.

Due to the location and the characteristics of the catchment area it is assumed that the international routes will have a strong direction to the East and South including routes to Moscow, St. Petersburg, Kiev, Minsk and to regional destinations like Tallinn, Vilnius, Warzaw.

Furthermore Scandinavian destination will no doubt be on the destination lists and last not but least Dublin due to the fact that a large number of Latvians from the Daugavpils area working in Ireland. In addition to the scheduled services it is likely that some charter routes for instance to Turkey, Greece, Egypt and other holiday destinations will be established especially in the summer periods.
Initially it is likely that some cargo will be brought in and out of Daugavpils in the bellies of the passenger aircraft. This will mainly be smaller parcels. Ad hoc cargo charters may also be possible for instance regarding heavy machinery, live stocks etc.

However, more substantial cargo traffic will require the development of a cargo and logistic centre. Such a development will include aprons, cargo terminal and handling facilities and landside access for trucks and delivery vans. The development could also include facilities for express courier service companies like DHL, UPS and FedEx. Such facilities can be developed either at the private land next to the terminal building or on the Eastern side of the runway.

Provided that such a logistic centre will be developed Daugavpils has the opportunity to become a multimodal transit point for air cargo not only for Daugavpils itself but also for Eastern Lithuania, Northern Belarus and if the border procedures are eased also for the South Western part of Russia neighbouring Latvia.
No quantitative forecast has been produced due to the uncertainty regarding the development of the privately owned land next to the passenger area. Indicative discussions with this developer point to the direction of development of cargo facilities. In the longer run a cargo area could also be developed on the South Eastern side of the runway. However, it is impossible at this stage to quantify the possible development of the cargo business.
4 Marketing Concept for Regional Daugavpils Airport

4.1 Daugavpils Airport Marketing Practices

In May 2004 Latvia became member of the EU, which meant that all EU aviation directives and regulations were introduced. This also means that the aviation market has been completely liberalised in Latvia.

The membership of the EU has also triggered an increase in the economic activity in Latvia both with respect to investments and economic and social growth. This provides a solid basis for increases in the demand for both international and domestic traffic.

The demand has already increased dramatically in Riga Airport, which brings the growth rate in the aviation sector in Latvia in the top of the European growth rates.

The Daugavpils area and specifically Daugavpils Airport has not yet taken advantage of the new opportunities in the aviation sector. Daugavpils Airport is not operational for the time being. However, the Municipality has in 2007 published a document “Establishment Conception of International Regional Airport “Daugavpils”.

The visions for Daugavpils Airport have been defined as follows: To establish an international regional airport “Daugavpils”, improving by this the accessibility of the region, promoting economic activities and attracting investments for the city and region.

The aim is to service:

- International and domestic passenger traffic,
- International and domestic cargo transport,
- Charter flights.

Building up of the necessary infrastructure for establishing logistics centre and industrial zones in the territory of Daugavpils airport.
In order to achieve these visions and aims a total renovation and upgrading of the airport will be needed. Only the basic foundation and structure of the runway system can be used. All other structures and facilities have to be designed, developed and constructed as in the case of a “green-field” airport. The development and construction is proposed to be carried out in phased manner in order to optimize the capital input.

The airport will be designed for a total number of passengers of 1,1 mill and 12,500 operations in 2025. The catchment area includes the greater Daugavpils area, Eastern Lithuania, Northern Belarus and potentially also the neighbouring area of Russia.

The forecasted traffic includes routes to Riga, Moscow, St. Petersburg, Kiev, Minsk, Tallinn, Vilnius, Warsaw, Scandinavian destinations last not but least Dublin due to the fact that a large number of Latvians from the Daugavpils area working in Ireland.

Thus it is obvious that the airport development will give a major impact to the regional economy in Daugavpils, which supersedes the expected financial deficits in the airport. In a broader economic perspective the proposed airport development will be a very sensible and prudent investment.
4.2 Key Marketing Indicators of Daugavpils Airport

Until 1994 Daugavpils airport was a former military airport used by Russian Air forces. However, it also served as a civil airport with more than 60,000 passengers per year. Cargo flights were also operated from the airport by the big factories for sales and supply. There were around 7 daily flights to Riga and 1 daily connection to Moscow and Minsk with more cargo charters taking place every week.

In February 2001 Daugavpils airport was certified as Airport Daugavpils and operated for private and charter flights for aircrafts with maximum take-off weight not more than 35 tones.

From June 2002 until now Daugavpils Airport has not been used and is not in operational condition. Actually the condition of the facilities and infrastructure are in poor shape or non-existing.
However, the Daugavpils municipality sees the development of the airport as an important contribution to the economic and social development of the municipality and an instrument and contributor to the development of industrial and commercial activities in the city and for the region in general.

In June 2006 Daugavpils airport with its buildings and structures (incl. RWY 2300m/42m) was transferred to the “Daugavpils Lidosta Ltd”. whose sole owner is Daugavpils City Council. "Daugavpils Lidosta" Ltd. is created as a tool for airport administration. Administration of the enterprise consists of 3 members of the board (incl. chairman of the board) with equal rights to represent the enterprise. The enterprise does not have airport management structure and technologies related to it yet.

In accordance with the state strategic plans, including the Operational Programme “Infra-structure and Services”, and Daugavpils airport development plan, there is a necessity to work on the opportunities to revive and modernise the airport. The airport could also be integrated with the development of an industrial and technological park, centre of transport logistics and aviation related activities such as a flight school, aircraft maintenance facilities and an aircraft service centre.

4.3 Daugavpils Airport and its Market Catchment Area

Daugavpils is the second largest city in Latvia, an important economic centre in Latgale and the eastern border of the European Union. The airport is located in the North Eastern direction 15 km away from the city centre of Daugavpils, close to the highway Warsaw-St. Petersburg, 25-30 km from the borders of Belarus and Lithuania and 100 km from the Russian border (Figure 2). Thus the airport is well located from a transport and logistic point of view.

Important auto transport highway and railroad main pass through area of the rural district:
- Highway A13 Russian border (Grebenev) – Rezekne – Daugavpils – Lithuanian border (St. Petersburg);


- Several important international railroad lines pass through Latgale region:
  - Moscow – Rezekne – Jelgava – Ventspils;
  - Vitebsk – Daugavpils – Krustpils – Riga – Ventspils;

Railroads are located parallel to three main highways and make Jekabpils, Rezekne and Daugavpils important regional points.

Fig. 15: Daugavpils Airport Market Catchment Area
The airport is located in comparatively sparsely populated area. Close to the airport, there is Lociku parish with 1426 inhabitants. In the beginning of 2006 5949 people were registered in Naujene rural district, 82,78% of them were concentrated in large settlements, which are located close to Daugavpils city line – Vecstropi, Krauja, Stropi, Lociki, Naujene, Krauja.

According to the prospective territorial planning of Naujene rural district, it is anticipated to develop agricultural and industrial regions near the airport (closer to Daugavpils). Furthermore there are several prospective districts for tourism development close to the airport.
The primary catchment areas is of course the Greater Daugavpils and Latgale area itself. However, due to the proximity of several other medium sized cities and the lack of airports in these cities the catchment area is far bigger (Figure 3).

The catchment area includes Utena, Visaginas and Zarasai (Lithuania), Daugavpils and Kraslava (Latvia), and Verkhnedvinsk, Novopolotsk and Braslav (Belarus). The total area of the region is about 21,000 square kilometres and accommodates about 445,000 residents. The working age population is decreasing throughout the region due to a rapid outflow of skilled labour to Riga and to other European countries especially Ireland.

Fig. 17: Catchment Areas of Daugavpils Airport
Daugavpils, Visaginas and Novopolotsk historically were formed as industrial centres. However, the industrial restructuring that had taken place during the last 15 years has resulted in the decrease in employment and the replacement of big enterprises by medium-sized companies using modern technologies and creating higher added value.

The most important industries of the region are metal processing, wood processing, food processing, light chemical and construction industries. The Daugavpils municipality and the entire region is working hard to attract new industries and boost the regional economy and social development.

The tourism sector is developing quite quickly, especially rural tourism. The countryside of natural beauty combined with the recreation opportunities offered by the towns ensures the development of interesting and attractive tourism products. However, the region has an image that is not always conductive to its development. Ignalina APP, Novopolotsk chemical plants and the big industrial enterprises in Daugavpils make the region look as an environmentally-unfriendly territory, even though the existing nature resources – Country of Lakes, Daugava valley and others - testify to the opposite.

A possible renovation or a complete new EU funded Igalina APP could change this image in a positive way and the design, planning and construction work itself could contribute positively to the passenger flows from Daugavpils Airport.

4.4 Daugavpils Airport and Economic Implications for the Region

A pre-condition for the success of the above mentioned strategies and plans is an upgrading of the present traffic infrastructure which goes for roads, railroads and last but not least airports and air traffic connections. A reopening of the Daugavpils Airport will no doubt contribute to the economic and social growth. The airport will support the interest of new investors in the region and will support domestic and international business relations.
The establishing of international regional airport in Daugavpils will ensure the accessibility of the city and the region and will allow connection between the city and the centers of Europe, the airport will help to improve the economic situation for attracting investments for the region, to support the development of tourism and trade, as well as to increase the freight traffic in the city and region.

Furthermore the airport will help to integrate into the single network of European transport systems and to become a member of full value in the air transport of this network. Development of regional airports, including reconstruction of the airport “Daugavpils”, is a significant element of the Latvian transport infrastructure development program. The development of Daugavpils airport is a priority not only in the development program of the city, but also in the spatial plan for the Latgale region.

4.4.1 Potential for Latvian Air Transport Sector

It is assumed that the airport will be opened for scheduled service in 2015 with a renovated and upgraded runway with ILS landing systems, a new apron, a modern terminal building and appropriate landside facilities. This is described as Phase II in the physical development of the airport.

It is a well known fact that the present road connection between Riga and Daugavpils is heavily congested and that the road is in poor shape. Upgradings will of course take place in the coming years but the traffic will continue to increase and add to the present problems.

Consequently it is assumed that an easy and swift air traffic connection between Riga and Daugavpils will attract an increasing number of passengers.

It is assumed that domestic traffic to Riga and to the West-Coast (Liepaja) will be established right from the start with 2 daily connections to Riga and 1 daily connection to Liepaja with a 50 seater aircraft. This traffic will gradually increase due to the expected economic growth in the region.
Due to the location and the characteristics of the catchment area it is assumed that the international routes will have a strong direction to the East and South including routes to Moscow, St. Petersburg, Kiev, Minsk and to regional destinations like Tallinn, Vilnius, Warsaw.

Furthermore Scandinavian destination will no doubt be on the destination lists and last not but least Dublin due to the fact that a large number of Latvians from the Daugavpils area working in Ireland. In addition to the scheduled services it is likely that some charter routes for instance to Turkey, Greece, Egypt and other holiday destinations will be established especially in the summer periods.

If some of the LCCs (Low-Cost-Carriers) like Ryanair, Wizz Air or Russian LCCs for instance the new SkyExpress will take an interest in Daugavpils the traffic will no doubt boom within a few years. This has been seen in many European regional airports especially if there is an untapped market to go for. This is very much the case for the greater Daugavpils area.

The result of this forecast shows that Daugavpils within a 15 year forecast period will reach a level of 1,100,000 passengers out of which approx. 10% will be domestic traffic.

In the beginning of the forecast period a very strong increase will be seen due to the introduction of new routes and due to the fact that it will now become much cheaper and more convenient to travel directly from Daugavpils to domestic and different European destinations.

The actual development will of course depend on the airline interest of the airline operators to start new routes and if LCCs will enter the market. If for instance Ryanair will start a route to Dublin and a new Russian LCC will start routes to Moscow and St. Petersburg there is no doubt that the airport will get a “flying start” maybe even at a higher level than indicated in the forecast.
As an example it can be mentioned that Palanga Airport next to Kleipeda in Lithuania doubled the number of passengers from 2003 to 2006 and with a much smaller catchment area.

Initially it is likely that some cargo will be brought in and out of Daugavpils in the bellies of the passenger aircraft. This will mainly be smaller parcels. Ad hoc cargo charters may also be possible for instance regarding heavy machinery, live stocks etc.

However, more substantial cargo traffic will require the development of a cargo and logistic centre. Such a development will include aprons, cargo terminal and handling facilities and landside access for trucks and delivery vans. The development could also include facilities for express courier service companies like DHL, UPS and FedEx. Such facilities can be developed either at the private land next to the terminal building or on the Eastern side of the runway.

Provided that such a logistic centre will be developed Daugavpils has the opportunity to become a multimodal transit point for air cargo not only for Daugavpils itself but also for Eastern Lithuania, Northern Belarus and if the border procedures are eased also for the South Western part of Russia neighbouring Latvia.

No quantitative forecast has been produced due to the uncertainty regarding the development of the privately owned land next to the passenger area. Indicative discussions with this developer point in the direction of development of cargo facilities. In the longer run a cargo area could also be developed on the South Eastern side of the runway. However, it is impossible at this stage to quantify the possible development of the cargo business.

GA traffic and especially business and taxi traffic is expected to increase dramatically within the next decades due to increased globalisation and congestions in the major European airports. Even though the present economic situation is difficult in the Daugavpils area it is believed that the economic development will be improved in the forecast period and the possibility to fly directly to Daugavpils by private air-planes or
taxi flights will support the interest of potential investors and commercial international business partners.

Fig. 18: Forecast for aircraft movements

This development will be supported by the introduction of the new generation of business jets called VLJ (Very Light Jets) which will be much cheaper than the present business jets. It is expected that this development will revolutionize the airtaxi concept and that this market segment will boom. This will no doubt benefit an airport like Daugavpils.

Again no mathematical forecast has been produced but it is likely that 3-5 business aircraft could operate in and out of the airport daily.

Furthermore a number of private airplanes and training flights could operate from the airport. In total 10-20 operations per day are not unlikely.

Based on the forecast for passenger traffic, cargo traffic and GA traffic the forecast for movements (landings and take-offs) will amount to approx. 12,000 movements per year
out of which about 50% will be GA traffic and 50% scheduled passenger traffic (Figure 16).

4.4.2 Contribution of the Airport to Increasing Cargo Flows

As mentioned in the forecast chapter it is believed that a cargo and logistic centre can be developed in Daugavpils especially for import of perishables and high value goods for instance electronic equipment from Asia. The concept will be that the goods are brought into Daugavpils by air and reloaded onto trucks for transportation to the entire catchment area including Russia.

Furthermore when the economy is revitalised in the area there will be a need for express courier services where Daugavpils Airport could be developed into a courier hub.

The cargo area in the airport is located in the privately owned land East of the passenger apron. Consequently decisions regarding the development and in-vestment in this area are to be decided by the land owners and/or their associated partners. It has been indicated by the land-owners that the area most likely will be developed as a base for GA traffic with hangars, maintenance facilities flight school and other airport related activities. Some cargo related activities could also be considered in the far Eastern end of the privately owned land. However, today no final decision has been made by the private land-owner how to develop this land neighbouring the airport.

It is recommended that an agreement is made between the Daugavpils Airport Company and the private land owner in order not to duplicate each other and to make common use of the airport facilities including the manoeuvring areas and supply facilities. Furthermore the services of both parties should be included and integrated in the marketing and promotion of the airport.

As mentioned earlier the airport land includes more land than actually needed for the manoeuvring areas and the terminal complex. Today the land is farm land and with no
access roads or supply facilities at all. In the longer run and if the cargo traffic picks up it will be possible to develop a cargo centre or logistic centre on this side of the runway. This will require a comprehensive land development with a wide access road, landside terminal facilities, a cargo terminal and an appropriate apron for cargo aircraft.

4.5 Daugavpils Airport’s Performance Analysis and Evaluation

4.5.1 Overview of Airport’s Economic Viability

Daugavpils Airport will not become commercial viable within the Master Plan period and it will not be able to service the debt and pay back the proposed investments. This situation is quite common for small and medium sized regional airports.

However, the economic impacts for the society are important (see figure 17).

The primary effects will be saved time for the passengers, which will be able to go more directly to domestic and foreign destinations compared to the present rather long and inconvenient road transport to Riga followed by a flight to the final destination.

Secondly the airport itself will employ more people when traffic picks up both directly and also indirectly through different suppliers and service providers to the airport and
the airline operators. This will generate employment, income and tax revenue to the city.

The biggest socio-economic effect will most likely come from economic growth and employment in new industrial and business developments, which will be attracted to Daugavpils due to good air traffic connections.

There is no doubt that especially the international regional routes will become important for the international trade and for attracting international investors. Accessibility is an important parameter when choosing a new location for a production plant or other industrial and commercial activities.

For an ongoing airport with a known traffic structure, traffic volume and number of employees it is possible to estimate the regional economic impact from such an operation. For an almost “green field” airport like Daugavpils such a quantitative cost benefit analysis is more difficult to carry out.

Based on the traffic forecast the total number of passengers is expected to develop.

Furthermore the following assumptions have been made:

- Time savings for domestic and international airline passengers will be 3 hours in each direction compared to road transport.

- 80% of the airline passengers will be business people and 20% will be leisure or other passengers. This assumption is based on Scandinavian experience.

- Finally it is assumed that the value of time to business passengers will be 15 LVL per hour and 9 LVL for other passengers (this value is based on Norwegian, Swedish, Danish air traffic studies).

Based on these assumptions the following value of the saved time to passengers can be calculated (see figure 18).
This means that for instance in 2020 the value of the time savings will be 35 mill LVL, in 2025 it will be 41 mill LVL and in 2025 it will be 46 mill LVL.

For the whole forecast period to 2030 the accumulated savings will amount to 570 mill LVL in current prices. The corresponding NPV based on a discount factor of 4% p.a.) amounts to 398 mill LVL.

Even though the value of time will always be subject to discussion there is no doubt that especially in the case of Daugavpils and due to the poor and congested road connection the reopening of the airport will give a tremendous benefit to the travellers.

4.5.2 Implications for the Regional Labour Market

In the airport itself it is assumed that approx. 25 jobs will be established. The actual number will depend on the degree of outsourcing from the airport.
In addition to the airport jobs new jobs will be created in the companies, which will be suppliers to the airport with respect to maintenance work and services.

Assuming that another 25 jobs will be created from 2010 and that each employer will have an average salary of 120 LVL per month (the present minimum wage level in Latvia xxviii) the total income effect per year will be 7.500 LVL.

More important are the indirect job effects, which are related to the new jobs in new companies or in existing companies, which among other factors will expand due to the airport development.

Today the present work force in Daugavpils is estimated at approx. 70.000 persons. Assuming that the development of the airport in the long run will trigger 5% more jobs this will equal 3750 additional jobs. This could easily happen with just one or two new industries located in the Daugavpils area due to among other factors easy air connections and airport facilities. Of course this job creation will not happen overnight but throughout the forecast period. In this economic assessment it is assumed that the employment increase will follow a linear development from 2015 to 2030.

Assuming that the average salary will still be just 120 LVL per month the total result will be an accumulated income generation for the period 2016 to 2030 of 40 mill. LVL in current figures, which corresponds to a NPV of 25 mill. LVL for the said period.

4.5.3 Impact on the Regional and National Tourism Sector

The incoming tourism to Daugavpils will no doubt also benefit from an expansion of the airport. Assuming that after 2016 the airport will receive 150 foreign tourist per week in the summer season (12 weeks). Furthermore assuming that this tourism impact will increase to a 1500 tourist per week in 2030 (linear development) and that the average daily spending by these tourist will be 100 LVL this impact will accumulate to 86 mill. in total for the forecast period (in current prices) equal to a NPV value of 60 mill. LVL.
5 Concluding Observations

Based on the previous chapters the quantifiable economic impacts can be summarized as follows for the forecast period.

**Fig. 21: Total Economic Effects in Million LVL**

<table>
<thead>
<tr>
<th>Economic impacts</th>
<th>Current prices Million LVL</th>
<th>NPV Million LVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of time savings for passengers</td>
<td>570</td>
<td>398</td>
</tr>
<tr>
<td>Employment effects</td>
<td>39</td>
<td>26</td>
</tr>
<tr>
<td>Tourism effect</td>
<td>86</td>
<td>60</td>
</tr>
<tr>
<td>Total impact in the forecast period 2010-2025</td>
<td>695</td>
<td>484</td>
</tr>
</tbody>
</table>

It should be noticed that this estimate is based on a specific set of assumptions and the estimates for value of time and the employment effects will be difficult to measure and prove due to the fact that other factors than the airport development will also influence the development. However, it is likely and justifiable that an economic impact of more than 600 mill LVL equal to a NPV value of approx. 400 mill LVL will be achieved from the direct and indirect effects.

Thus it is obvious that the airport development will give a major impact to the regional economy in Daugavpils, which supersedes the expected financial deficits in the airport. In a broader economic perspective the proposed airport development will be a very sensible and prudent investment.
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