



Strategic exploration of the future of Groningen Airport Eelde

Passenger aviation market and transport
forecast analysis

Submitted on March 18, 2016

Disclaimer

This report was created for the public shareholders of Groningen Airport Eelde NV:

Province of Drenthe (formally representing the collective shareholders of Groningen Airport Eelde NV)

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Lufthansa Consulting performed a 'Passenger aviation market analysis' based on a combination of desk research, an extensive analysis of available market data, years of experience in market analysis topics and a cross-check of draft results with relevant market experts in a 'market test' on March 10th.

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1. Introduction and methodology

Within the scope of this study, Lufthansa Consulting was contracted to perform a passenger and transport forecast analysis as input for the strategic future option for Groningen Airport Eelde. This document summarizes the main findings from the assignment and is only complete in conjunction with the detailed final report by Lufthansa Consulting.

In order to estimate the potential passenger volume for each market, a five step approach is adopted. First, the total theoretical traffic potential is calculated based on an evaluation of the propensity to travel at a regional level. The gap between the total theoretical traffic potential and the traffic already captured at Groningen corresponds to the traffic leakage to other airports. An evaluation of the relative attractiveness of competing airports based on the number of destinations, flights and road travel time enables the distribution of the leakage traffic across the competing airports. In a last step, the potential per O&D (origin and destination) is computed as the sum of the leakage traffic to the specific destination considered.

In the route evaluation process, six key performance indicators are used to assess the eligibility of a given destination:

- The recent traffic development to and from the competing airports needs to demonstrate a stable, if not growing, pattern over the last six years
- This traffic needs to reach a critical mass to make any additional operator entry likely to attract sufficient demand for a positive and stable development of the route
- The historical development through the successful market entries and exits reveal the sustainability of airline operations to the destinations considered
- From the supplier side, the degree of airport and airline competition was assessed, thus enabling to conclude on the degree of supplier concentration
- The typology of the current airline operating the route will also enable to gauge its attractiveness for further low cost entries
- Finally, the suitability of the route considered for one of the possible future airline operating in Groningen constitutes the most crucial decision factor

2. Current market environment

The competitive landscape of Groningen shows four main players in the Netherlands (Amsterdam, Rotterdam, Maastricht, Eindhoven) and four in Germany (Dusseldorf, Bremen, Munster, Weeze). The opening of Lelystad airport will increase Dutch domestic competition in the market segments low cost and, in part, charter. While Groningen Airport is comparable to Maastricht in size and scope, it lags behind the other competitors offering a larger portfolio of airlines and routes.

In order to determine the catchment area of Groningen Airport Eelde, the travel time by car from each COROP in the Netherlands to the airport was identified. The average travel time of all municipalities within a COROP was calculated to identify this distance. As a result, ten COROPs which are located within 60 minutes of travelling from Groningen were identified as the primary catchment area. Potential passengers from Overig Groningen and Noord-Drenthe can even reach the airport within 30 minutes. Within 45 minutes of driving, inhabitants of Delfzijl en omgeving, Overig Groningen, Zuidoost-Friesland, Zuidoost-Drenthe and Zuidwest-Drenthe can commute to Groningen. Noord-Friesland, Zuidwest-Friesland and Noord-Overijssel are within 60 minutes of travelling by car from Groningen.

This results in a total of over 2 million people with a GDP per capita of EUR 36,938 who live in Groningen's primary catchment area. A similar analysis of the competitors shows that no other airport has an overlapping primary catchment area. Even though there can be defined two secondary catchment areas (up to 120 minutes driving time) both West and East from the primary catchment area, the Eastern secondary catchment area falls into German territory. A conservative approach has been taken, given the strong cultural market behavior from German population to use national carriers and airports. Hence, this area is not considered as a potential source of traffic for Groningen airport. The Western secondary catchment area is in direct competition with Amsterdam primary catchment area and future Lelystad catchment area, which makes it unlikely that bigger volumes of leakage from this areas will feed into Groningen airport. The opening of Lelystad Airport in 2018 means that a competitor will be entering approximately into 38% of the catchment area of Groningen Airport Eelde, bearing potential consequences for Groningen Airport, such as increased competition for attraction of low cost carriers, reduced charter traffic based on a withdrawal of stopovers and a general shift of charter traffic, the latter potentially compensated for by other airlines. The hub feeder traffic is assumed to remain unaffected, since it is not focused upon by Lelystad Airport.

Almost six percent of the population in Groningen's catchment area is not of Dutch origin, creating potential for ethnic traffic. The airport already offers scheduled services to Gdansk (Poland) and London (United Kingdom) which are successful routes due to, among other factors, ethnic traffic. Besides the population with Polish and UK origin and excluding long distance countries and smaller minorities, there are German, Turkish, and Moroccan descents. All findings above are based on data from the Centraal Bureau voor de Statistiek (CBS).

3. Traffic analysis

3.1 Leisure summer routes

Leisure summer routes represent the mainstay of the current traffic in Groningen. They are characterized by a distinct seasonal pattern with demand and supply peaks in the summer months and limited or no traffic in winter. At present, flights to these destinations are mainly offered through tour operators and operated by traditional holiday charter airlines. Exemplary existing routes out of Groningen include the Greek, Canary and Balearic Islands as well as the Iberian Peninsula.

In general, this cluster shows a very stable development in terms of passenger volume since 2010, with an overall increase of the traffic to and from Groningen of approximately 10% over the last six years. A similar conclusion holds true for the trend observable at the competing airports. Up to two-digit growth rates year-on-year triggered passenger numbers to rise from 8.9 million in 2010 to 11.8 million in 2015, without any market exits of the competition over the respective time period.

A high-level screening of the leisure summer destination landscape in Europe and North Africa yielded in total 99 airports with potential for this type of traffic. Out of these, 32 were shortlisted to be subjected to close scrutiny. At the time of the study, a number of these routes are offered from Groningen, among others Heraklion (Greece), Antalya (Turkey), Palma de Mallorca and Gran Canaria (Spain). These destinations show a stable development since 2010 with potential for further growth, when comparing the volumes in Groningen with those of the competition.

In the context of an expansion of the current route portfolio two points need to be raised. Firstly, a number of popular summer holiday destinations are in recent times heavily impacted by political unrest and instability, for instance Greece and Turkey, but also tourism hotspots in Egypt (e.g. Sharm El Sheikh) and Tunisia (e.g. Djerba). They offer significant potential in the medium to long-term future and thus, should be reconsidered once political stabilization is achieved in these regions.

Secondly, the study reveals various destinations providing ideal opportunities for the launch of low cost services. Typical routes include Spain (Malaga, Alicante, Ibiza) and Italy (Catania, Bari), but also Marrakech, Malta and Split. In this scenario a low cost carrier could connect Groningen from some of its base airports. Alternatively, the airline could base an aircraft in Groningen, to serve these cities twice or three times weekly and capture a relevant market share from the competition.

3.2 City break routes

The city break destinations refer to European cities with cultural, historical and architectural attractions to which tourists usually travel for a weekend, or even up to a week. They are primarily served by low cost carriers and have in most cases some seasonality with demand peaks generally observed in the summer months.

The city break segment developed sporadically at Groningen airport in the past six years marked by market exits of Vueling and Ryanair between 2012 and 2014. Currently, only London Southend, which was launched by Stobart in 2014, is served from Groningen. The competing airports, in contrast, successfully managed to attract a steadily growing air traffic demand, demonstrating a potential for further growth for Groningen airport in this market segment.

Within the route evaluation and the qualitative assessment 36 airports were considered as potential destinations to serve out of Groningen. 28 of these were pre-selected for a thorough analysis.

Lufthansa Consulting's final recommendation focuses on eight potential routes forming three development scenarios of Groningen Airport Eelde. Each scenario corresponding to a specific low cost airline deployment strategy.

- Prague, Lisbon, Berlin and Porto were identified as a good fit in the event of Ryanair resuming services in Groningen
- Budapest and Bucharest correspond to Wizzair's Eastern European regional bases and suit the airline's strategy to strengthen its services into the Netherlands
- The cities of Barcelona and Rome represent strong bases in Vueling's network and the launch of these services is consistent with the airline's recent expansion strategy into Netherlands, aiming to avoid direct competition with Ryanair in its strategic choice of new destinations.

3.3 Hub feeder routes

The study also highlights the importance of a hub feeder route out of Groningen. In order to foster stable growth, it is vital to convince a large network airline (or one of its subsidiary with an online agreement) to launch feeder flights from Groningen into the respective hub airport. This would lead to a significant increase of possible connections for passengers starting their journey in Groningen and an offer of long-haul services to e.g. North America or Far East. Therefore, the route evaluation of a hub feeder connection out of Groningen considers potential point-to-point traffic on the flight, all the network effects at the hub airport, as well as potential beyond connections in Groningen.

In general, a hub feeder is characterized by a high number of frequencies. As it is crucial to hit the outbound waves at the connecting airport, the timing of the flights needs to be determined carefully. Usually, the bank structure of a large hub airport shows significant potential for onward flights in the morning hours and in the early evening, sometimes complemented by further waves in the afternoon. Taking the minimum connecting time at the respective airport into account, a schedule can be developed that maximizes the number of hits at the hub, thereby generating the highest possible network effect to offer the optimum service level.

According to the study, it is recommendable to primarily target hub feeder flights from Groningen Airport Eelde to Copenhagen. Negotiations with the relevant carriers are already in process and an interline agreement with SAS is in place. The airport of the Danish capital offers a broad range of destinations in Europe, North Africa, Middle East, North America and South East Asia. In addition to the hub in Copenhagen, SAS operates connecting flights out of Stockholm and Oslo. As all these cities not only generate significant transfer passengers but also a considerable amount of local point-to-point demand, they should be thoroughly assessed as additional strategic options in the future.

Besides Copenhagen, some alternatives were identified. For instance, Turkish Airlines provides an interesting option due to its current rapid expansion with flights from its hub in Istanbul to Rotterdam, Amsterdam and 14 destinations in Germany. In addition to extensive local demand, Turkish Airlines offers the largest network worldwide, linking Istanbul to an unparalleled number of countries around the globe. Similarly, a hub feeder service to Lufthansa's hub in Munich can be beneficial for Groningen. Talks initiated some years ago, however, did not yield the desired result; Lufthansa launched services to Rotterdam in 2013.

3.4 Other routes

Destinations clustered as “others” refer to markets with no clear predominant demand characteristic but rather a combination of multiple purposes of travel with often a notable share of ethnic traffic.

Groningen airport recently introduced services to this market cluster through Wizzair operations to Gdansk in 2014 which strongly performed since then. The traffic at the competing airports steadily increased in the past six years revealing potential for further development. These markets, in most cases, have a moderate level of competition.

For the route evaluation and the qualitative assessment of potential new routes to serve from Groningen, 85 airports were identified, from which seven were pre-selected for a thorough analysis. The remaining 76 airports had a total traffic volume from the competition below 200,000 passengers in 2015 and were, therefore, considered insufficient to represent potential for a new operator entry.

Lufthansa Consulting’s final recommendation includes four potential routes with two being evaluated as possible replacement options to the current operations to Gdansk.

- In line with its expansion strategy into the Netherlands, Wizzair could consider linking Belgrade and Riga to a second Dutch airport and, thus, enlarge its destination portfolio from its Eastern European regional bases.
- Furthermore, Katowice or Warsaw in Poland could represent a good alternative for Wizzair’s operations to Gdansk in case declining demand on the route is observed in the future. These destinations show more stability and potential in their latest traffic developments.

4. Potential route developments

Building upon the findings from the preceding analyses, three distinct route developments are considered. These cases are designed in a way to reflect the individual threats and opportunities Groningen is facing. Specifically, one development centers on the materialization of a hub feeder service, whereas the others address a potential market entry of a low cost airline or a focus solely on traditional charter routes. In the next step, these different developments are used as basis for the traffic forecast scenarios that gives an indication of the development of the passenger volumes in Groningen for each of the aforementioned cases in the medium-term future.

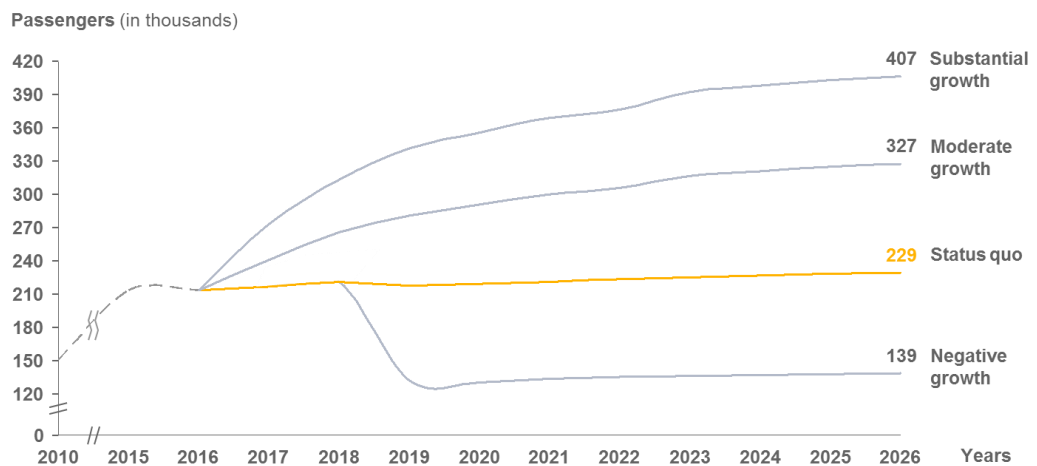
The main underlying assumption of **the first route development is the establishment of a hub feeder service** into Copenhagen. Using Groningen as a spoke of the network creates a significant amount of demand, both due to local and connecting passengers. Furthermore, it is assumed that all other route clusters remain unchanged. Meaning that no low cost carrier will initiate services to or from Groningen and the holiday charter segment will neither lose nor gain routes. These untouched routes, however, will grow naturally driven by the development of socio-economic indicators such as population growth and GDP evolvement. Demand for the feeder flights into Copenhagen, presumed to be launched in 2017, will ramp up over a period of two years, reaching full potential in 2019. This traffic will remain unaffected by the potential opening of Lelystad Airport in mid-2018 as LEY is not expected to compete in the hub feeder segment.

The **second route development foresees the market entry of a low cost carrier** into Groningen, whereby a number of additional destinations are launched. Heavily stimulating the market, the new entrant generates a considerable amount of demand that would be inexistent without this airline. While the same growth is accounted for, no hub feeder services and no explicit expansion of the charter business are considered. However, the opening of Lelystad will heavily impact on the operations of this carrier in Groningen, as low fares and further incentives could make the operator move to Lelystad instead.

Finally, the **third type of route development focuses on the operation of traditional charter routes**. Assuming Transavia will cease some routes in Groningen, the gaps they leave would be closed by other operators such as TUIfly. Tour operators would shift existing routes to other airlines and thus there will be no focus on expanding the current destination portfolio. This results in stagnating demand.

5. Traffic forecast

The traffic forecast comprises of a short- to medium-term prognosis for the period until 2026. The short- to medium-term traffic forecast is directly evaluated based on the different possible route developments and the predicted effect of Lelystad airport's entry into service. In a first step, a bottom up approach is conducted to create the passenger forecast according to each scenario. To do so, all routes in a specific scenario and their respective traffic volumes are summed up, taking into account the market size, the launch date and a ramp-up factor to reach the entire potential in the third year. The effect of Lelystad airport's entry into service is taken into consideration with various expected impacts according to the scenarios:



- **Negative growth:** The main hypothesis are that **no additional efforts** will be provided by the airport or its shareholders into the development of new routes and **Lelystadt competition** materializes in a drop of all regular routes and several charter destinations. These assumptions results in no potential for growth among Low Cost carriers nor the implementation of hub connectivity. Also it would imply the shift of some charter routes to the competing airports. This will result in a drop of the traffic of around 40% of the current volume. Nevertheless a minimum volume of traffic will still remain at the airport
- **Status quo scenario:** As in the previous scenario, **no additional efforts** are provided for route development. The competition of Lelystadt is expected to be focused on the Low Cost market. The risk of Transavia shifting part of its operations to Lelystad is highly probable. Yet, other airlines such as TUIfly and Corendon are expected to fill the gap left by Transavia as it is already observed recently. Nevertheless, there will be no expansion of the number of destinations

offered. As a result the airport traffic volume will remain almost unchanged.

- **Moderate growth scenario:** Additional investment efforts in the route development will materialize in the implementation of a **hub feeder connection OR a Low Cost airline** expanding its operation at the airport. In case of the Low Cost expansion at GRQ, the Lelystad effect is taken into account as for the low cost routes, the threat is much higher as Lelystad airport is expected to serve as a base for low cost operations and will directly compete with Groningen.
- **Substantial growth scenario:** In this case considerable efforts are committed to the development of routes. This scenario, is supported in the hypothesis that the airport will have the full support of its shareholders, the region and other local entities. In this case, the airport could launch the hub feeder connection and attract one Low Cost airline to launch several routes. The effect of Lelystad is expected to have partial effect and only in specific routes will have a real impact depending in the Low Cost that will operate in GRQ. Independently of which LCC will operate at GRQ vs LEY, a proper incentive scheme needs to be developed in order to maintain this traffic.

For the long-term traffic forecast, a high level mathematical approach was used to predict the traffic evolution after 2026 based on the population and GDP evolution in the Netherlands.

Lufthansa Consulting considers that in case sufficient resources are committed to the airport route development, the most plausible evolution of GRQ traffic volumes will be in line with the Moderate growth scenario.

With no changes in route development efforts, the predicted volumes are in the range of the Status quo scenario with tendency to the Negative scenario

6. Strategic recommendation

In summary, the study at hand reveals a number of strategic options for the future of Groningen Airport Eelde. These strategic recommendations are based on three main pillars, i.e. hub feeder services, low cost operations and traditional holiday charter traffic. Each traffic type has its own specifics and requires a certain set of next steps to ensure a successful implementation of the services.

First of all, the launch of **hub feeder flights should take top priority** in the strategic action plan of the airport. As stated above, frequencies and timing of the flights are critical to hit the hub waves and successfully operate this business

model. Operational considerations, however, are not the only success factor. Since a large part of the target group of hub feeders consists of business travelers looking for long-haul connections, commercial aspects need to be factored in.

Concretely speaking, a loyal Flying Blue status member, who would always take ground transportation to Amsterdam to catch a nonstop intercontinental flight, is likely to be very hesitant to change his travel behavior. This is not only due to habit and airport facilities in Amsterdam, but also due to the customer loyalty program at Air France/KLM. The SAS connection via Copenhagen would mean a change to Star Alliance and the frequent flyer program EuroBonus. Making a loyal customer switch to another program will require strictly enforced travel policies for companies in the Groningen region, stating that transportation from Groningen must always be the preferred option, if available. Therefore the overall success of the hub feeder connection will require complementary policies and commitment from the region and local institutions to the use of Groningen Airport Eelde over connecting via competing airports.

Likewise, certain preconditions must be met for the successful introduction of **low cost services** in Groningen. Experience shows that airports need to commit to not insignificant monetary investments in order to attract low cost airlines. By offering low airport and passenger fees, efficient infrastructure and marketing campaigns these airlines are incentivized to launch services from an airport that in return will provide considerably benefits from the traffic and additional operator triggers. An annual marketing budget of € 500,000 per route is recommended for such purposes. Also in the case of Groningen it must be made sure that sufficient funds and commitment are available to offer the necessary framework conditions for low cost services, such as for incentives and risk cover guarantees.

Finally, Groningen airport should continue to foster the proactive and frequent exchange with the tour operators, as already done in the past. For the development of the charter routes it is essential to be in close contact with the most influential operators, as this volatile market segment is continuously undergoing changes.