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Vliegwiél Twente Maatschappij i.o.

***Twente Airport
Demand Analysis and Evaluation***

Executive Summary

April 2008

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1. INTRODUCTION

Vliegwiél Twente Maatschappij i.o. ("VTM") is evaluating the potential uses of the former military airport in Twente and, as part of this evaluation, is assessing the possibility of developing a commercial passenger airport at the site.

L.E.K. Consulting (International) Limited ("L.E.K.") has been asked by VTM to assist in this assessment by preparing demand and cash flow models for a commercial passenger airport operation at the site.

Our approach, agreed with VTM, has been to construct scenarios with consistent assumptions for the interactions between three key requirements:

1. the operating "model" for the airport and its requirements to be economically viable;
2. the "supply" of seats, routes and frequencies by the types of airlines who would be assumed to be flying there; and
3. the potential "demand" that can be generated from outbound and inbound passengers who would find such an airport an attractive proposition.

In determining our conclusions, we have assessed a wide range of data sources, including previous studies for VTM, information available to Ministerie van Verkeer en Waterstaat, and publicly-available sources, and we have held discussions with airlines and other airports. These data are nonetheless limited compared to the evidence base that we would expect to be required to support an investment case, which would include (but is not necessarily limited to) information on passenger trips through airports other than Amsterdam Schiphol and surveys of travel behaviours, attitudes and preferences of people living within a reasonable catchment area of Twente airport. In addition, the study has been undertaken with limited time and resources. The analyses presented in this report are intended to provide a valuable input into VTM's decision-making process, but are necessarily preliminary and cannot be relied upon for investment purposes.

It should also be noted that our reports and models are subject to the contract between VTM and L.E.K. and may not be relied upon by any other parties for any purpose whatsoever.

2. CASH FLOW MODEL

We have constructed for VTM a cash flow model that estimates the economics of the development and operation of the airport, based on the revenues received from airlines and passengers, and the associated operating and investment costs. The model follows accepted industry approaches to evaluating commercial viability from a project-finance perspective, using a discounted cash flow (DCF) method to calculate a net present value (NPV).

2.1. Model Inputs

We have based the model inputs for costs (to the airport) and charges (to airlines and passengers) on prior work undertaken for VTM, and have assessed the reasonableness of these assumptions, where possible, by reference to observed benchmarks at other airports.

Overall, we conclude that the estimated cost and revenue assumptions (on a per passenger basis at the assumed patronage level) are plausible, but possibly optimistic:

- the estimated costs are plausible, but are at the low end of comparisons with other airports; a focus on running the airport with low costs will be beneficial to the economic prospects of the operation but is likely to require careful management
- the estimated aeronautical charges are relatively low compared with comparisons, but in line with nearby Münster/Osnabrück, which correctly reflects the competitive situation which would exist and the requirement to attract airlines to the airport as it develops and grows; and
- the estimated non-aeronautical revenues (retail and car parking income per passenger) are also plausible, but potentially overstate the opportunities to attract these additional passenger expenditures, particularly during the initial phases of airport development when the retail offer is likely to be limited.

Validation of the achievability of the cost structure and assumed charges would be a key area where further work would be required to support an investment case.

The passenger demand underlying the revenue assumptions is forecast by the demand model. A contribution from general aviation and cargo operations is also included, based on prior assumptions.

2.2. Breakeven Analysis

We have used the cash flow model to assess the required level of demand for the airport to break even economically. This breakeven analysis is sensitive to the assumed relationships between airline services and the (net) aeronautical and other passenger revenues received.

It is common industry practice for airports to seek to attract airlines by discounting fees and/or offering support for marketing costs; we have made assumptions on the level of these discounts based on the traffic mix expected in each scenario. From an investment perspective, the breakeven analysis is also dependent on the level of required investment and the expected rate of return required by the investors in the business; we have considered a range for this required return.

We have carried out the breakeven analysis at three different levels, described in terms of the minimum required passenger numbers in 2020. For our base case scenario:

- At an investment breakeven (zero NPV), the investments made in developing the airport can be repaid with an appropriate return for the risk involved. This requires passenger numbers in 2020 to reach
 - c.1.8m with a required return at the public sector end of the range of required returns, and
 - c.3.0m or higher for more entrepreneurial, commercial investment criteria
- Annual breakeven on profit before interest and tax charges (EBIT) allows the airport to meet day-to-day costs and maintain its assets, but the initial investment is “sunk”, does not earn a commercial return, and cannot be financed through debt. This level of breakeven is reached at around 0.9-1.0m passengers in 2020
- Breakeven EBITDA (approximately, the cash flow before interest, annual investment capex and tax) allows the airport to meet operations costs but not renew its assets or finance investment without further support from its owners. This breakeven is reached at around 0.6-0.7m passengers in 2020

Below this, negative EBITDA would require ongoing explicit subsidy of operating expenses.

3. DEMAND MODEL

We have constructed a demand model as a tool to aid the evaluation of the demand potential for commercial passenger services from Twente airport. It indicates the likely outcomes of internally-consistent, plausible commercial scenarios. It should be noted that the model is specifically designed for this analysis and is not intended as a general-purpose model of the airports in the region (further work would be required to allow this more general usage).

3.1. Model Design and Testing

The demand model has been designed to estimate the impact on existing demand caused by the (potential) introduction of operations at Twente airport (based on a number of scenarios), and specifically to assess the interaction between the numbers of flights offered, the demand attracted to them and the resulting load factors (the proportion of flown seats that are occupied) on the flights, a key determinant of airline profitability.

Model inputs are based on the most reliable sources available to the study team, notably published statistics on airport offerings and performance and geographic data such as population size and driving times sourced from a leading provider of such location-based data.

The model is not calibrated against potential passengers' preferences or observed behaviours as these data are not available; validation of the implied passenger choices would be a key area where further work would be required to support an investment case. However, the results of the model accord well to the observed demand levels at the existing airports before assessing the introduction of services at Twente airport (without being calibrated so to do), and the resulting demand shifts in response to services at Twente appear intuitive and reasonable.

Given the inevitable uncertainties in the inputs and assumptions used in the model, it is important to judge the results in the light of the sensitivity of the model outputs to changes in its key assumptions; we have assessed these sensitivities, and we have also simulated the distribution and range of possible outputs by estimating the uncertainties in those inputs, using probabilistic modelling techniques commonly known as Monte Carlo simulations. While the range of possible outcomes is wide, reflecting these uncertainties and the sensitivity of the model to airline economics, the implication of the sensitivity and simulation analyses is that the overall conclusions with regard to economic viability appear to be robust, i.e., there are few combinations of assumptions that lead to overall conclusions different to the base case.

3.2. Base Case

We have constructed a base case scenario based on a replication of the development of Bristol (UK) International Airport, i.e., a mix of typical short-haul scheduled

services, led by a strong low-cost offer, served by typical Boeing 737 / Airbus A320-type aircraft.

The analysis of this base case scenario leads to the conclusion that it is not possible, for any level of assumed services, to reach load factors on these flights that would make them economically viable. This implies that no airline would run services from the airport on a sustainable basis.

This conclusion results from the combination of the high level of nearby airport competition, the relatively small catchment area of the airport due to its transport links (especially North/South access by road), and the relatively small population in this area. The success of Bristol airport, in comparison, can be shown to be due to its nearby population being larger, travelling more frequently by air, and having fewer alternative options in terms of other nearby airports offering a good range of service frequencies.

Varying the model inputs and assumptions within plausible ranges, including possible reductions in driving times as a result of new road schemes or the underlying attractiveness of the passenger experience at smaller airports, can lead to potentially viable flight offerings at Twente airport, but not in sufficient number to lead to a commercially-sustainable operation.

3.3. Other Scenarios

Faced with the failure of the base case, we have considered the potential for other operational models targeted to attract different traffic mixes:

- An airport exclusively served by low cost carriers (similar to Weeze, currently a 100% Ryanair airport) would attract passengers based on price. However, low-cost carriers fly larger planes at higher load factors, which raises the benchmark for average route profitability and makes the scenario unviable
- If demand is concentrated on select routes (such as the traffic at Groningen airport due to the nearby energy businesses), some flights may be profitable even if aggregate demand levels, on average, would suggest otherwise. However, demand from around the Twente area is not sufficiently focused on any specific destinations to support any such routes
- Even if a scheduled frequency is not plausible, a once weekly summer flight to selected leisure destinations might be. However, while attracting charter airlines would appear to be possible, the level of demand from the nearby population is not sufficient to support the airport's costs
- Airline operations utilising smaller aircraft, with higher ticket pricing, can support services from some regional airports. These services are primarily targeted at the business market and therefore needs to be sustainable from that demand (e.g., VLM services at Rotterdam). Such a service could, under very favourable assumptions about airline economics, sustain profitable flights at Twente airport but this would remain economically unviable for the airport from an investment perspective.

Our search for potential alternative scenarios focused on passenger services, rather than cargo or general aviation, although these are considered briefly in following next section.

4. OTHER KEY CONSIDERATIONS

There are other factors, not captured in our demand analysis, which could affect the commercial viability of an airport. We have separately considered a number of these that could offer an opportunity for Twente airport

4.1. National Aviation Policy

There is the potential that the development of national aviation policy could generate a scenario that results in a forecast of viable demand at Twente airport.

In particular, we have considered the possible consequences of restrictions on the development of Amsterdam Schiphol, for example following possible recommendations of the Tafel van Alders consultation group set up to advise the Government on balancing Schiphol development with noise and environmental considerations.

If Schiphol is constrained at 480,000 air-traffic movements p.a., and the mooted development of Lelystad airport does not take place, then, as the general demand for air travel grows over time, a proportion of the demand that would otherwise be attracted to Schiphol, but could not be served from there, would be attracted to Twente instead. In one modelled scenario this reached c.2.6m passengers in 2020. However, although this is above the breakeven passenger numbers for typical public-sector returns, it is still below the breakeven point based on the returns an entrepreneurial investor may require

4.2. Other Potential Sources of Revenue or Demand

During the course of our study, a number of other potential sources of revenue and/or demand have been suggested, which we have briefly considered:

1. Basing an MRO (aircraft maintenance, repair and overhaul) service provider at the airport could provide an addition revenue stream from land and runway use. However, initial research indicates that airport revenues from such operations tend to be small and demand for additional facilities in North-West Europe is limited
2. A cargo-focused airport would face significant competition from the large European cargo hubs, but could benefit from the growth in airfreight if a major airfreight operator establishes a base at Twente. A requirement for this is, however, likely to be an airport that can receive significant numbers of flights during the night. Assessing this opportunity further would centre on

engaging in specific discussions with the major airfreight operators (e.g. TNT, DHL, UPS, FedEx)

3. A general aviation (GA) focused airport would attract some traffic (as Twente has in the past), in particular if Leystad is developed into a LCC airport and this displaces business aviation. However, initial research indicates that few European GA airports are economically viable without public subsidy. Assessing the potential of a such an airport would involve an assessment of the European GA market and a detailed investigation of potential local demand
4. Basing a 'careport' specialist medical facility in close proximity to the airport could synergistically drive demand for services at both sites. While this depends on the existence of a viable airport, the incremental demand might benefit a marginal case like the regional jets scenario sufficiently to pass a breakeven hurdle
5. Improving access to the site through new rail access infrastructure would enlarge the effective catchment area. However, current guidelines applied by ProRail/NS would require established passenger volumes at the airport to justify such investment
6. Re-basing military operations at the site and sharing costs could, depending on the cost sharing arrangements, allow viable commercial operations (as at Eindhoven and Newquay in the UK), but this is clearly subject to broader public-policy decisions

5. CONCLUSIONS

Our cash flow analysis indicates that investment breakeven (positive NPV) requires passenger numbers in 2020 to reach between c.1.8m with a required return at the public sector end of the range of required returns, and c.3.0m or higher for more entrepreneurial, commercial investment criteria, for a mixed use commercial passenger airport.

Our demand analysis leads to the conclusion that it is not possible, for any level of assumed services, to reach average flight load factors that would make them economically viable. We have also considered the potential for other operational models targeted to attract different traffic mixes, and although in certain very specific circumstances these can support potentially viable routes, the level of demand would not provide an economic return for the airport.

However, there is the potential that the development of national aviation policy could generate a scenario that results in a forecast of viable demand at Twente airport, in particular if there are tight restrictions on the development of Amsterdam Schiphol airport. We have not considered the prospects of an airport focused on cargo or general aviation.

Overall therefore this study indicates that it is unlikely that a viable and sustainable commercial passenger airport could be developed at Twente without public financial support, due to the relatively high levels of nearby airport competition (many of which are similarly uneconomic) and the relatively low levels of nearby demand for air travel. This conclusion is reinforced by the fact that the cost and revenue assumptions based on prior work, although plausible, may be at the optimistic end of the spectrum.

Whether the development of a passenger airport on the site is an appropriate course of action is therefore dependent on the estimated broader socio-economic benefits that the airport could bring to the region and a comparative assessment of the (net) value available from alternate uses of the land after the existing contents have been removed.