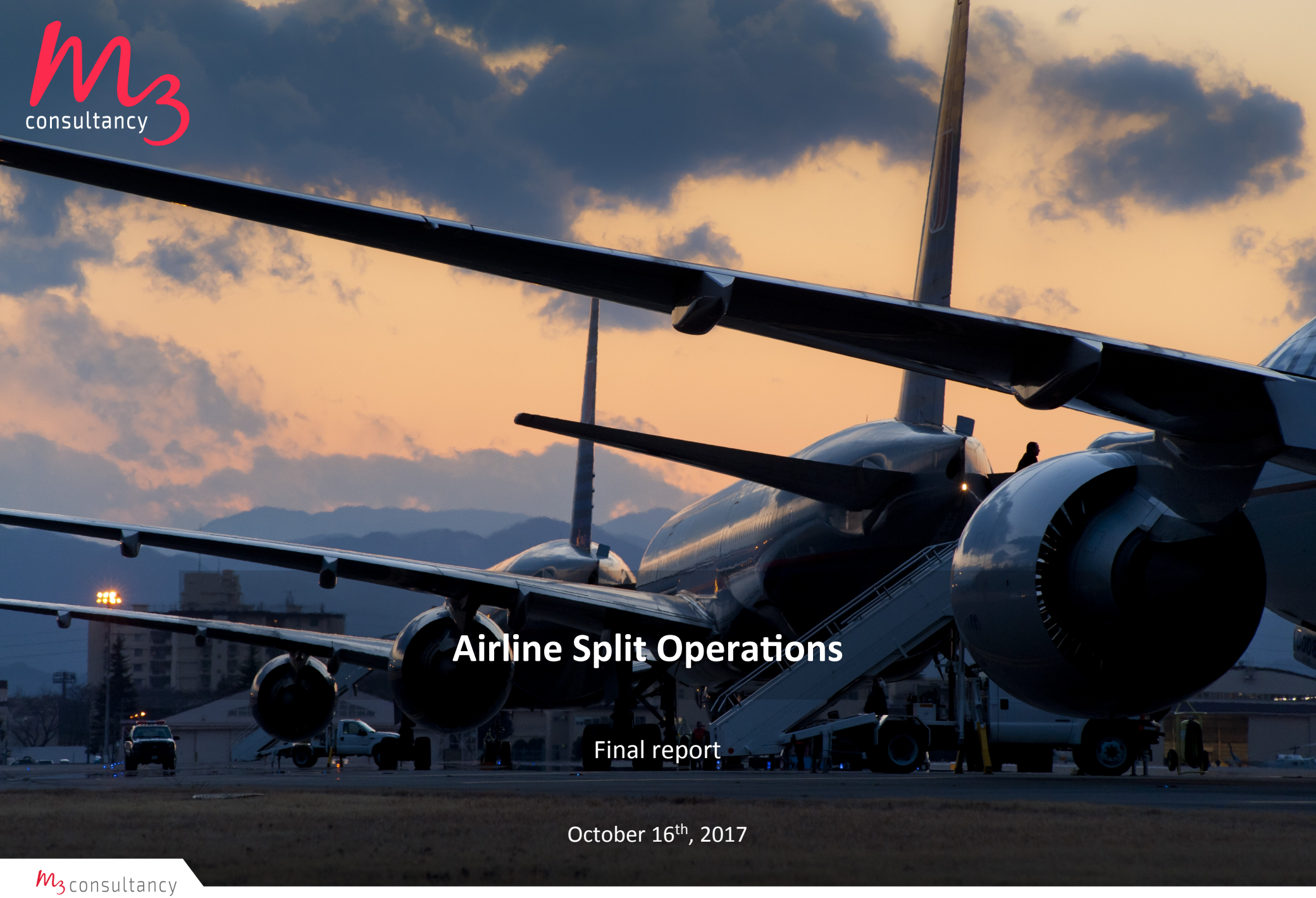

Airline Split Operations

Final report

October 16th, 2017

Executive summary

Key conclusions airline split operations research

- The opening of Lelystad Airport may result in airlines operating from/to both Schiphol and Lelystad, serving the same catchment area, in a split operation set up. This research describes **what kind of airline split operation models** exist and **under which conditions such operation may or may not be sustainable**. The basis for this research is an extensive analysis of flight schedules complemented with market developments. Client envisions a Traffic Distribution Rule (VVR) and requested to imply its implications.

- The term 'airline split operations' refers to network configurations where an airline operates from its home base to multiple destinations in the same catchment area or where an airline operates from another airport than its original home base in the same catchment area. The **main types of split operations** are: **'multi-airport', 'outside base', 'additional base',** and **'second home base'.** For the Dutch situation the 'second home base' type is not relevant

- **All three relevant types of split operations are being operated by airlines in the Dutch market for a long time**. From all regional airports in the Netherlands '*outside base*' operations are executed, while airlines have established '*additional bases*' at Eindhoven and Rotterdam (partly due to the lack of development potential at Schiphol). Foreign airlines, mainly network carriers, but also low cost airlines, operate flights from their foreign home base to a second airport in the Netherlands next to Schiphol ('*multi-airport*') or have done so in the past

- ***The 'Additional base'*** -type is well-suited for Lelystad from a market demand perspective. Scale seems to offset inconveniences and extra cost of a split operation in comparable cases. The opening hours as part of the license of Lelystad (06h00 until 23h00/24h00) meet the conditions that airlines require for a base. A more challenging requirement is the minimum scale of this type of operation. The typical start-up size of a base is 3 – 4 aircrafts resulting in approx. **6.000 – 10.000 ATMs per year. This will not be possible from day 1 at Lelystad**. The start-up period needs to provide airlines a credible perspective to develop towards that viable scale in 2 to 3 years from an efficiency point of view

- The '***Multi-airport***'-type **fits in terms of scale and desired opening hours** at Lelystad. The **operational conditions demanded by the airlines are minimal**, however, the commercial drawbacks compared to a 'single-airport' operation appear to be significant and therefore **little growth from the market can be expected**. Restrictions at Schiphol as a consequence of the VVR can, however, drive some demand for this type of operation at Lelystad. An analysis of SEO shows that with the current VVR approx. 7.500 flights (mainly by Turkish and Moroccan airlines) currently being operated at Schiphol, might be subject to either move to Lelystad, or alternatively be cancelled

- The ***'Outside base'***-type (the 'W'-operation) has long been applied by Dutch charter airlines to regional airports. There are **no objections from a cost- and operational feasibility point of view**, viability of a W-operation relies on yield perspective. Both **volume (ATMs) and schedule requirements** (mostly during the middle of the day) **can be well fitted** at Lelystad. However, there is a clear trend in the Netherlands and in Europe that the **charter model loses in importance against scheduled operations**. A **VVR that reliefs Schiphol of leisure flights in the morning (block 2) and afternoon (block 6)** needs to imply a free choice in slot time at Lelystad, in order for a carrier to make a 2nd or 3rd turn at Lelystad instead of at Schiphol

- '*Multi-airport*' and '*Outside base*' types of operation could be considered by airlines as a way to **start building presence** at an airport with the aim of developing into an '*additional base*', provided that the desired volume of that base can be achieved within an acceptable time frame (2-3 years)

Agenda

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- **Introduction**
- Airline split operation in the Netherlands
- Detailed review of airline split operation models
  - ‘Additional base’
  - ‘Multi-airport’
  - ‘Outside base’
- Relevant insights for the development of Lelystad Airport

Goal of this research is to define airline split operations models, determine conditions airlines require for each model and relate those to Lelystad airport

Framework of assignment

Objective

- Mapping the different models of airline split operations based on case studies

Scope

- The split operation models that are relevant for the Dutch airport
- The focus on which conditions (operating hours, number of allowed flights) are necessary for the airlines to succeed the split operation

Out of scope

- An assessment of negative effects if not all conditions for a split operation are met

Applied methodology

- Mapping airline split operations through archetypes
- Mapping the typical airline operating hours and the size of operation for each archetype based on analyses of schedule data
- Enriching the insights by analyzing the development of these archetypes over time and by gathering information about why certain developments happen (on instruction, no conversations with the airlines were held)
- Describing the expected conditions for airlines to operate in a split operation at Lelystad Airport, based on the archetypes and the impact of the envisioned Traffic Distribution Rule (VVR)

Disclaimer: the research in this report assumes that the basic airport infrastructure (accessibility, ground facilities) is in place and that the Traffic Distribution Rule (VVR) is in force

There are 5 ways an airline can operate from/to an airport of which 4 can be classified as split operations

ARCHETYPES FOR THE WAY AIRLINES OPERATE FROM/TO AN AIRPORT

No split operation — *Increasing degree of split operations* →

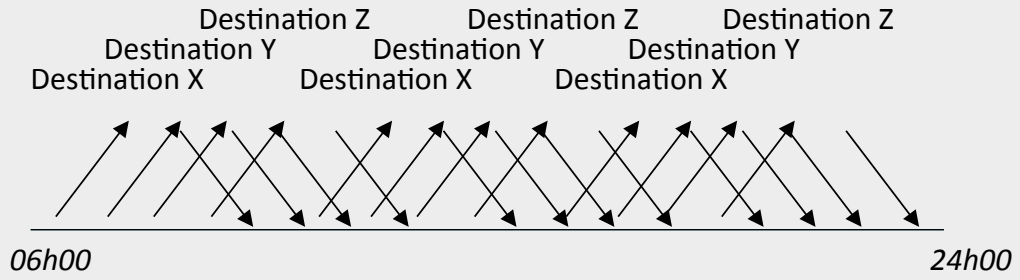
	SINGLE-AIRPORT	MULTI-AIRPORT	OUTSIDE BASE	ADDITIONAL BASE	SECOND HOME BASE
Description	Operating flights from a base to an airport that is the only one within that catchment area	Operating flights from a base to multiple airports located in the same catchment area	Operating flights on a route where neither departure nor arrival airport are a base of the airline (W-operation)	Operating flights from an additional base where aircraft and crew are based	Operating a substantial number of flights from a second home base near the current home base
Drivers	• Market opportunity	• Market opportunity (only at bigger metropoles) • Forced (if primary destination has no capacity to grow)	• Market opportunity (often charter airlines flying commissioned by tour operators)	• Market opportunity • Limited growth opportunities on current base	• Limited growth opportunities current home base • Sometimes defensive
Examples	• Germania at MST	• KLM at LIN and MXP • TK at RTM and AMS • KLM at LHR and LCY	• Transavia from GRQ/ MST to Spain	• easyJet at CDG and ORY • Transavia at MUC	• British Airways at LHR and LGW

The ‘multi-airport’-, ‘outside base’- and ‘additional base’-types of a split operation are relevant for the Dutch market

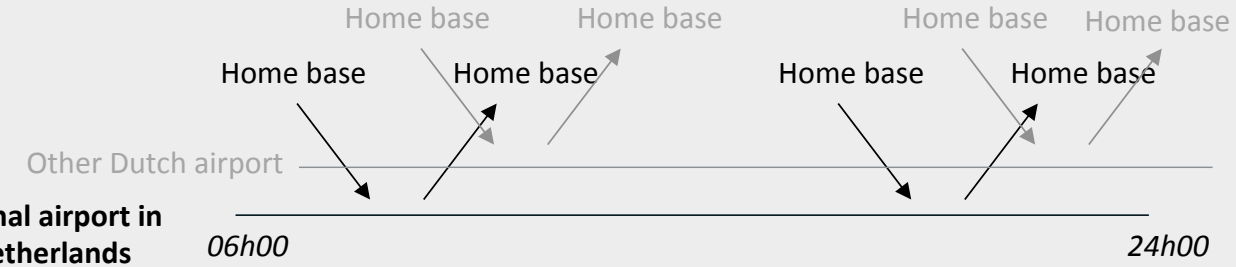
	SINGLE-AIRPORT	MULTI-AIRPORT	OUTSIDE BASE	ADDITIONAL BASE	SECOND HOME BASE
	• Most common archetype: serving one airport in a market from the base • No split operation and therefore out of scope for this research	• Multiple airlines fly or have been flying in the past both on Amsterdam and other regional airports in the Netherlands • Volumes are small (mostly less than 10 flights a week/ 1.000 ATMs a year) • Mostly foreign airlines	• Charter airlines flying from regional airports is a long-standing practice • In the Netherlands, these ‘outside base’-flights are usually done by Dutch airlines	• A number of airlines already have a base other than at Schiphol (Rotterdam and Eindhoven) • Especially low cost airlines are still increasing the number of bases • A condition for this type of operation is the availability of enough movements. In time, this archetype is possible at Lelystad	• Setting up a second home base hardly occurs and only appears at growth limitation and/or at enormous metropolis (London, Paris) • There is no need for a similar model in the Netherlands, neither is this size possible at Lelystad (for example 44k flights at LGW by BA)
Relevance for development of Lelystad/Dutch context	✗	✓	✓	✓	✗

The three relevant types of a split operation show a very distinctive traffic pattern at regional airports

ADDITIONAL BASE

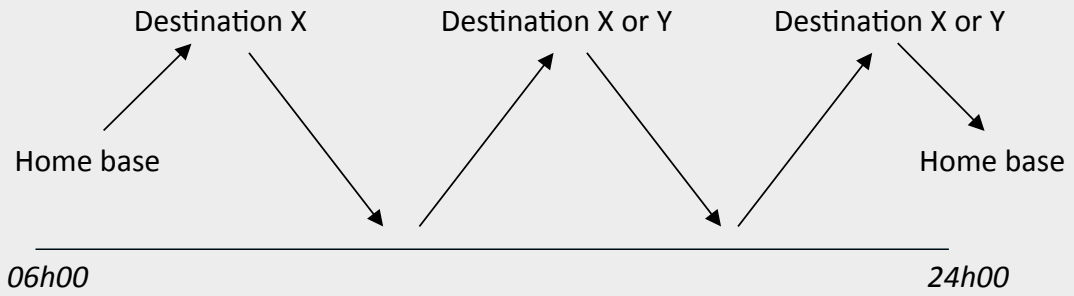


MULTI-AIRPORT



OUTSIDE BASE

(W-operation)



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All three relevant types of airline split operations are currently operated by multiple airlines at regional airports in the Netherlands

KEY AIRLINES OPERATING IN THE NETHERLANDS CATEGORIZED PER AIRPORT AND ARCHETYPE

Multi-airport
Outside base
Additional base
Home base

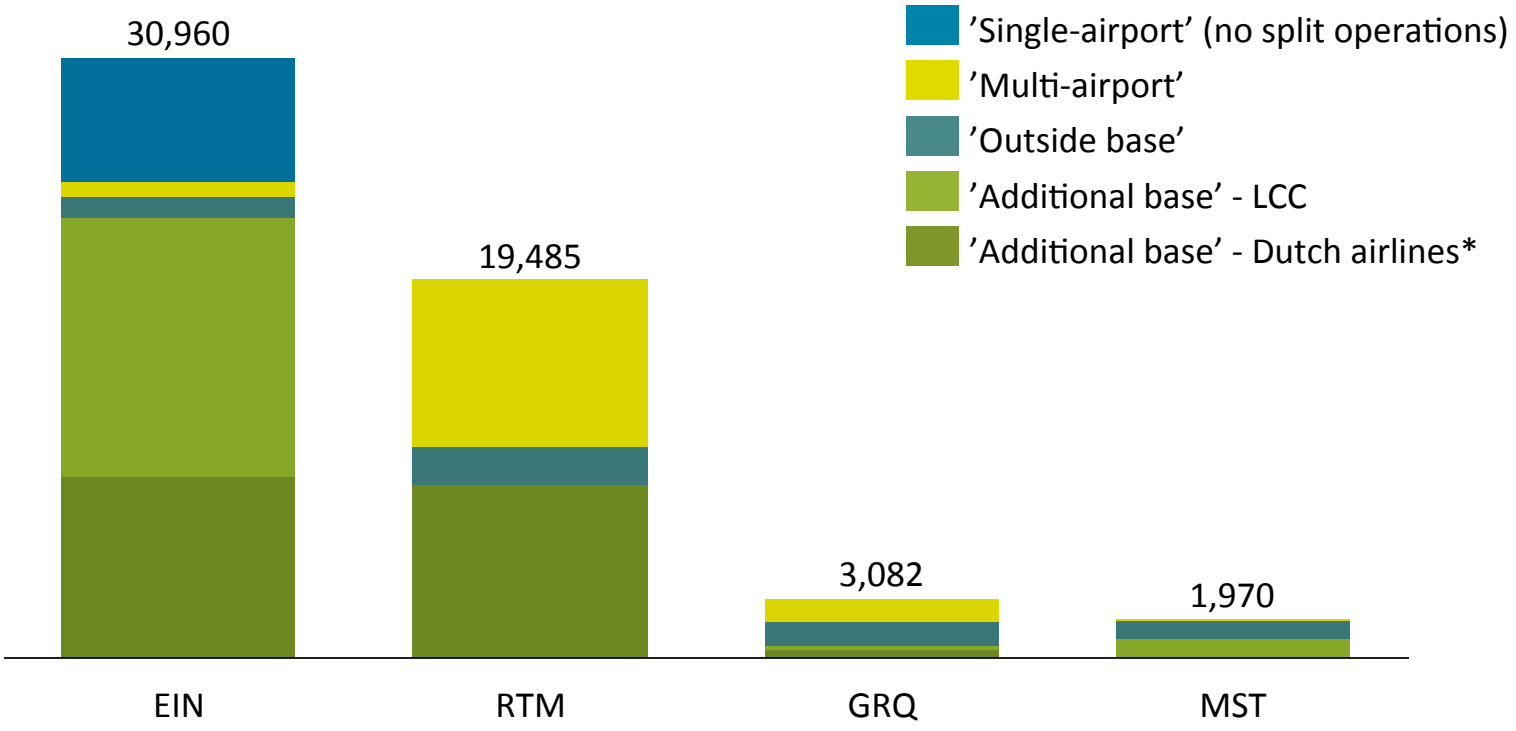
- The fact that each archetype occurs in the Netherlands, without the existence of policies, shows there is a market demand justifying such services (provided that certain conditions are met) and operational disadvantages can be overcome

* Based on schedule and airport

Source: OAG data; M3 Consultancy analysis

The ‘Additional base’-model is dominant in the Dutch market; ‘multi-airport’ is important for some airlines operating at Rotterdam/The Hague and Groningen

NUMBER OF ATMs CATEGORIZED PER REGIONAL AIRPORT AND ARCHETYPE IN 2016



* Dutch airlines operation at Eindhoven/Rotterdam are partly due to constraints in development at Schiphol

Source: OAG data; M3 Consultancy analysis

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The ‘Additional base’-operation is mainly applied by low cost airlines

ADDITIONAL BASE

Description

Typical airlines	▪ Dutch/foreign (hybrid) airlines
Operational adjustment in relation to single-airport	▪ A part of the current/new fleet is based at the additional base, at which aircraft typically start and end their day
Impact on the operation	▪ Significant - Airplane facilities are necessary: maintenance, briefing - Local crew is needed - Local ground facilities are necessary as well (station manager; flight duty operations > duplication with functions on other base) ▪ However, the impact of operating in a split operation will be mitigated with the scale size

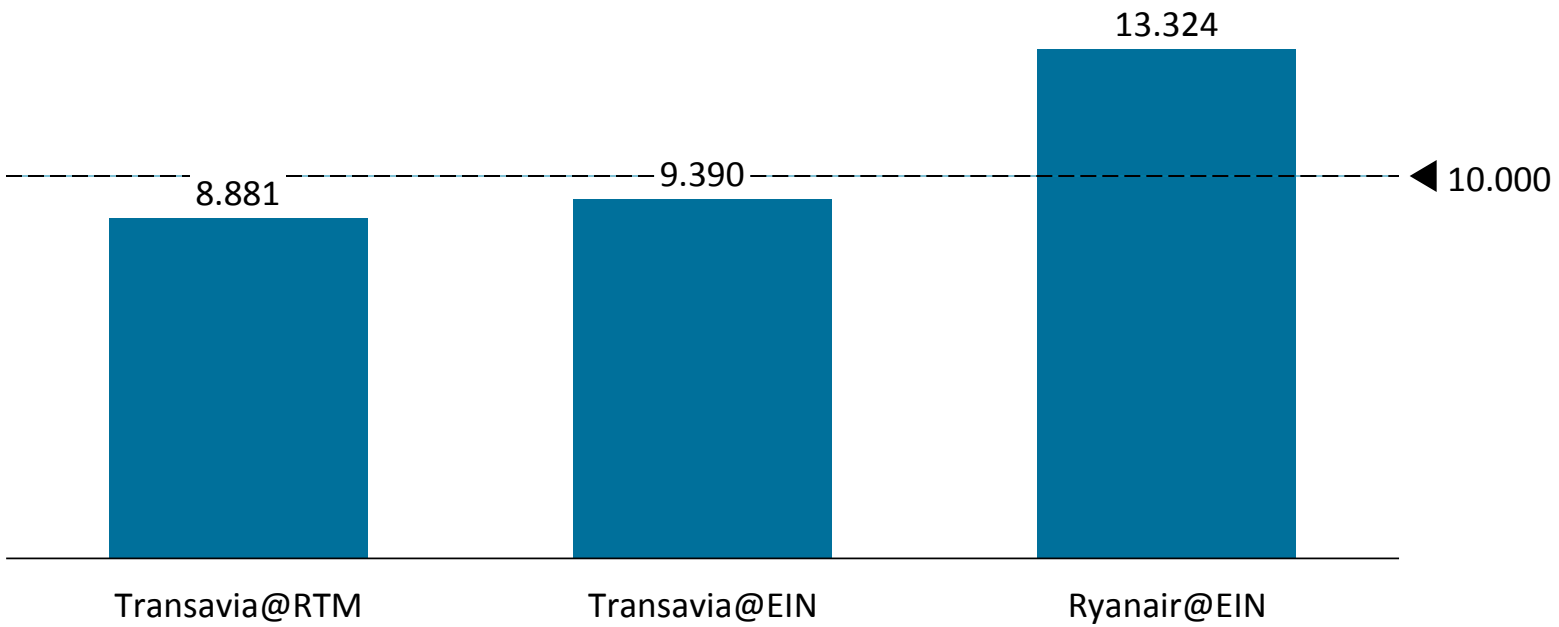
Insights from analysis/ case studies

A Dutch airports	▪ Transavia (RTM and EIN) and Ryanair (EIN) have bases at regional airports
B Trends	▪ Still, new bases are added by European low cost airlines such as easyJet, Norwegian and Wiz Air
C Typical size for airline	▪ Approximately 6.000 – 10.000 ATMs a year for broadly oriented low cost airline and 2.000 ATMs a year for ultra-low cost airlines such as Wizz Air
D Typical operating hours	▪ Departure wave at 6 - 8 a.m.; arrival wave at 10 p.m. - 12 a.m. ▪ During the day there is an irregularly pattern of flights ▪ A curfew at for example 11 p.m. at Paris Orly is not a reason to not operate on this airport due to the popular location, which however could be a barrier for Lelystad Airport
E Impact Traffic Distribution Rule	▪ The traffic distribution rule will likely encourage airlines to consider an ‘additional base’, but given capacity constrains this will initially have to be through other split operation models (*see next sections*)

A Airlines operate at a total of 3 'additional bases' at Dutch regional airports today, with an average of 10.000 ATMs a year per base

ADDITIONAL BASE

NUMBER OF ATMs PER YEAR PER AIRLINE AND AIRPORT IN 2016



Source: OAG data; M3 Consultancy analysis

B In recent years, low cost airlines have continuously been opening additional bases to expand their network

ADDITIONAL BASE

EXAMPLES: ADDITIONAL BASES FOR THREE LOW COST AIRLINES IN THE LAST 6 YEARS

Airline	Year	Airport
easyJet	2012	Lisbon, London–Southend, Nice, Toulouse
	2013	Hamburg
	2015	Amsterdam, Napels, Porto
Wizz Air	2015	Košice, Lublin, Debrecen
	2016	Iasi, Kutaise
	2017	Chisinau, Varna
Norwegian	2011	Helsinki
	2012	Malaga, Las Palmas,
	2013	Gatwick, Tenerife, Alicante
	2014	Barcelona-el prat, Madrid
	2016	Rome Fiumicino Airport
	2017	Edinburgh, Riga

- Low cost airlines keep expanding their network with additional bases
- easyJet and Norwegian set up new bases at big airports and cities, while Wizz Air prefers smaller airports

Source: OAG data; M3 Consultancy analysis

B Airlines indicate they are interested to open new bases in the Netherlands as well

ADDITIONAL BASE

Airline expert – “given the risk of recruiting local crew members and the potential costs of not having extra capacity when there are technical issues, an airline would want to base at least 3 or 4 airplanes as minimum scale when opening a new base. If an airline opens a new base with 1 airplane, they will do this with a crew from the home base that stays the night in a hotel and it is mostly due to PR reasons.”

TUI FLY STATIONEERT VLIEGTUIGEN IN ROTTERDAM EN EINDHOVEN

Not a real new base at Eindhoven, since airplanes will arrive from Morocco in the morning at Eindhoven and than continues it flight schedule from Eindhoven

21 september 2017 - 11:16 | Door: Klaas-Jan van Woerkom | Foto: Reismedia

RIJSWIJK - Vakantievlieger TUI fly stationeert in de zomer van 2018 vliegtuigen in Rotterdam en Eindhoven. “Ook met Groningen Airport Eelde zijn we in gesprek”, zegt TUI-topman Arjan Kers in gesprek met *Luchtvaartnieuws Magazine*.

Hij vreest met Corendon klem te komen zitten als hetzelfde voor Lelystad opgaat. "Op zich hebben we geen geen bezwaren tegen verhuizing. Maar er dreigt nu op Lelystad eenzelfde catastrofe als in Eindhoven. Er zijn nog altijd geen wettelijke regels en voorschriften."

Corendon has no objection against moving to Lelystad Airport if there are clear rules and regulations

Ryanair wil vanaf Lelystad Airport vliegen © ANP/Fotobewerking

RyanAir wil vanaf Lelystad vliegen

Het hoge woord is eruit: RyanAir wil vliegen vanaf Lelystad Airport. Wanneer de lerse prijsvechter de polder als uitvalsbasis gaat gebruiken, is nog onduidelijk.

Herre Stegenga 09-03-17, 22:00

Transavia seems interested to base 3 airplanes at Lelystad Airport

Nieuws

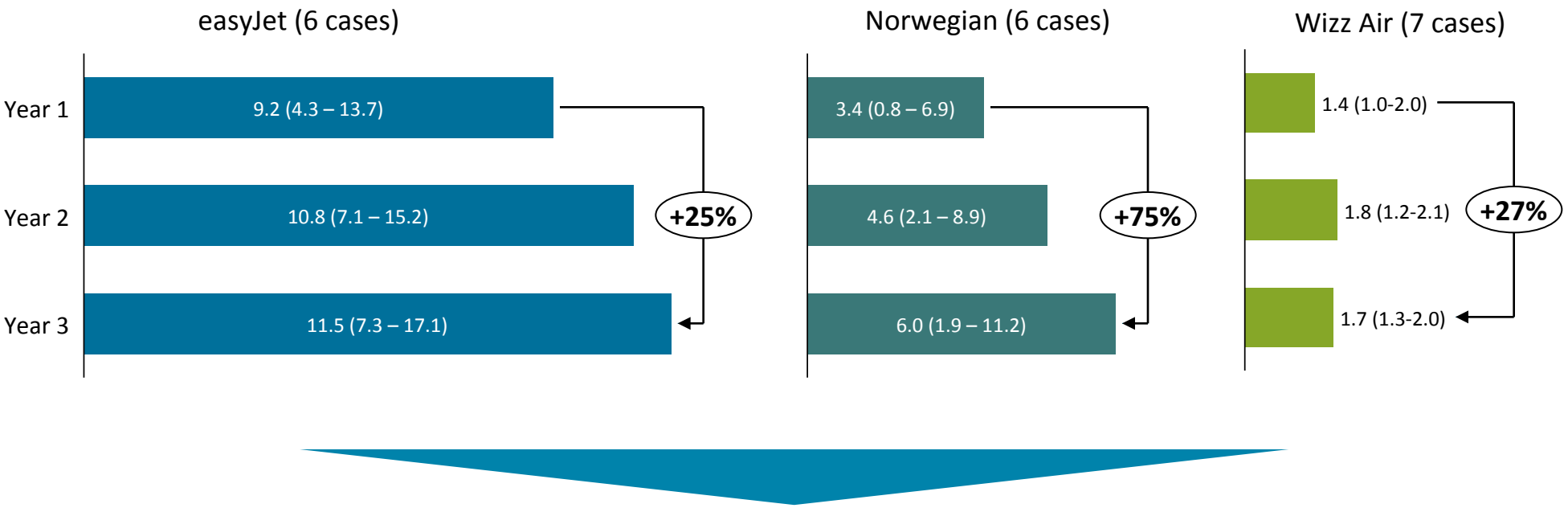
Transavia ‘onder voorwaarden’ naar Lelystad

1 september 2017 | 711 keer bekeken

C A new base needs the perspective to start at or quickly develop towards 6.000 flights or more per year

ADDITIONAL BASE

NUMBER OF ATMs PER YEAR FOR THE FIRST THREE YEARS AT WHICH EASYJET, NORWEGIAN AND WIZZ AIR HAVE OPENED AN ADDITIONAL BASE (in thousands)



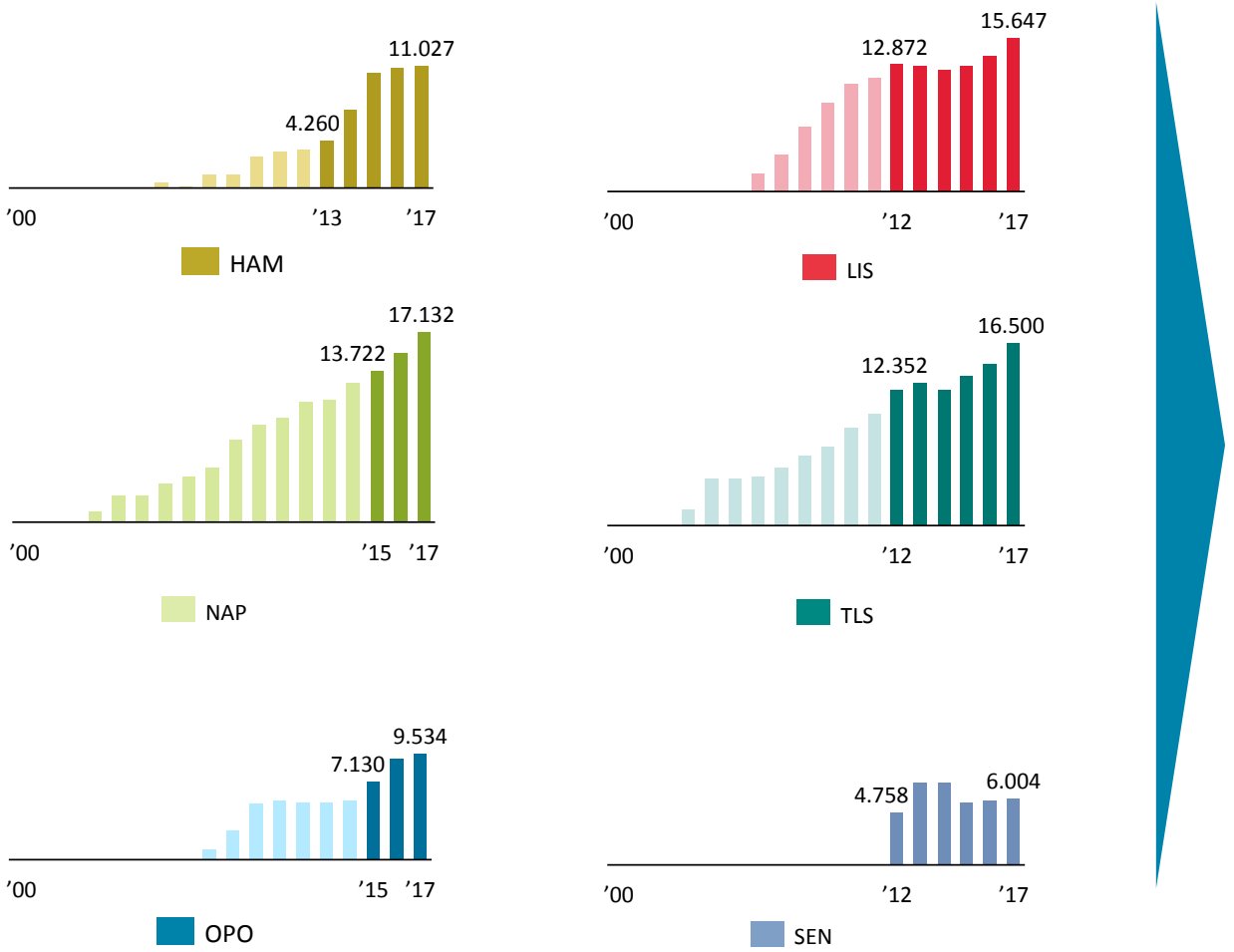
- easyJet is more focused on the business passengers and starts a new base with an average of 9.200 ATMs per year, while the ultra-low cost Wizz Air starts with only 1.500 ATMs a year
- All bases show a considerable growth in the first few years, which means that their base involves, apart from Wizz Air, quickly more than 6.000 ATMs a year

Source: OAG data; M3 Consultancy analysis

C easyJet mostly starts serving a 'single airport' to accumulate volume, before establishing a new base

ADDITIONAL BASE

TOTAL NUMBER OF ATMs PER YEAR BY EASYJET



- easyJet has a relatively long growth path before they start a base at an airport
- Before starting a base, easyJet operated most of their flights from and to these airports via the 'single-airport' model; from one of their bases in different catchment areas to these airports and back to their bases
- easyJet started immediately with 3 based airplanes at London Southend (SEN) and therefore there was no growth path

Source: OAG data; M3 Consultancy analysis

Case study - easyJet at Paris-Orly and Charles de Gaulle: background

ADDITIONAL BASE

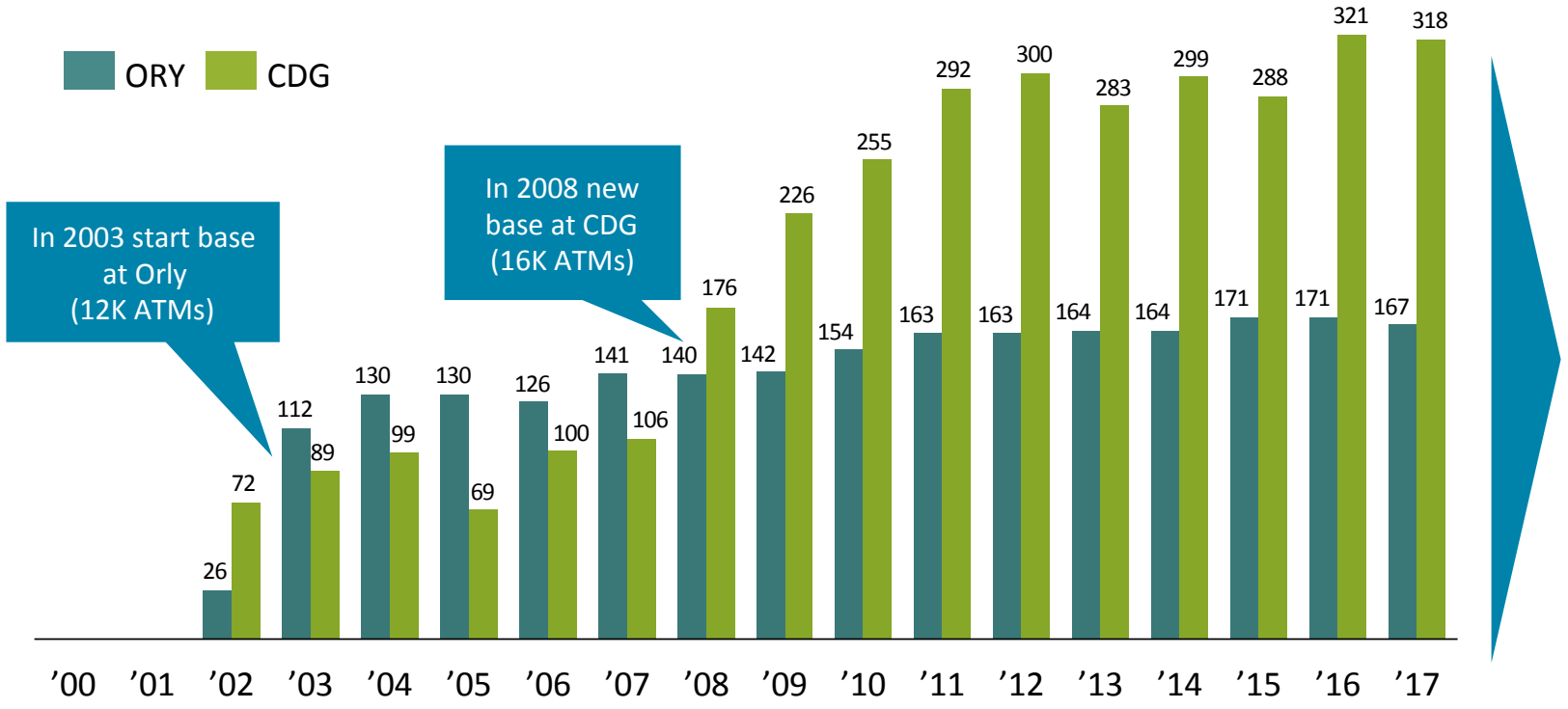
- easyJet has been operating at Paris-Orly airport, the most attractive airport for the OD passenger, since the early 2000s
- In 2007 easyJet announced it would invest EUR 600 million in expanding its presence in the Parisian market and would open a second based at Paris – Charles de Gaulle with 3 aircraft (next to the 6 aircrafts it had based at that time at Paris Orly). Its ambition was to grow from 9 to 20 aircraft and 12 million passengers in 3 years
- easyJet's decision to develop a new base at Charles de Gaulle was mainly triggered by the lack of expansion opportunities at Orly (cap of 250.000 ATMs/year), while Charles de Gaulle did have sufficient capacity. It was a not a decision based on cost differential as airport charges for both airports at the same

Source: press clippings, interview with former Aeroports de Paris airline marketing staff member

C Following the opening of its base at Paris-CDG, easyJet quickly reached an annual volume of 16.000 ATMs

ADDITIONAL BASE

TOTAL NUMBER OF DEPARTURES IN THE FIRST WEEK OF AUGUST BY EASYJET AT CGD AND ORY



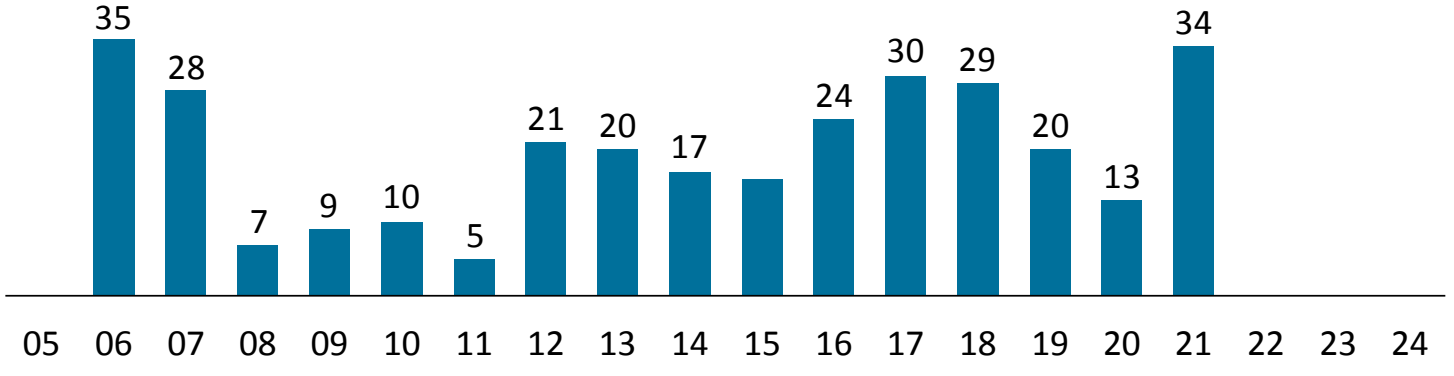
- easyJet already had a very sizeable operation at Paris-CDG before opening its base (flights from other bases into Paris)
- After the opening of an additional base at CDG it reached a volume of 16K ATMs

Source: OAG data; M3 Consultancy analysis

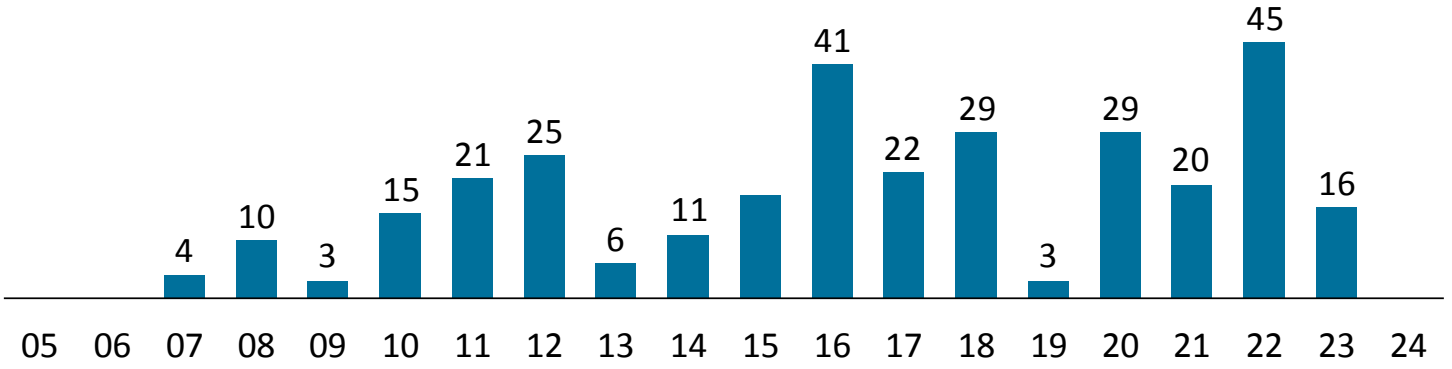
D easyJet's flights to CDG require long opening hours, having departure/ arrival peaks in the morning and late evening

ADDITIONAL BASE

WEEKLY NUMBER OF EASYJET FLIGHTS AT CDG PER HOUR DURING FIRST WEEK OF AUGUST 2017



Departing flights by easyJet from CDG



Arrival flights by easyJet at CDG

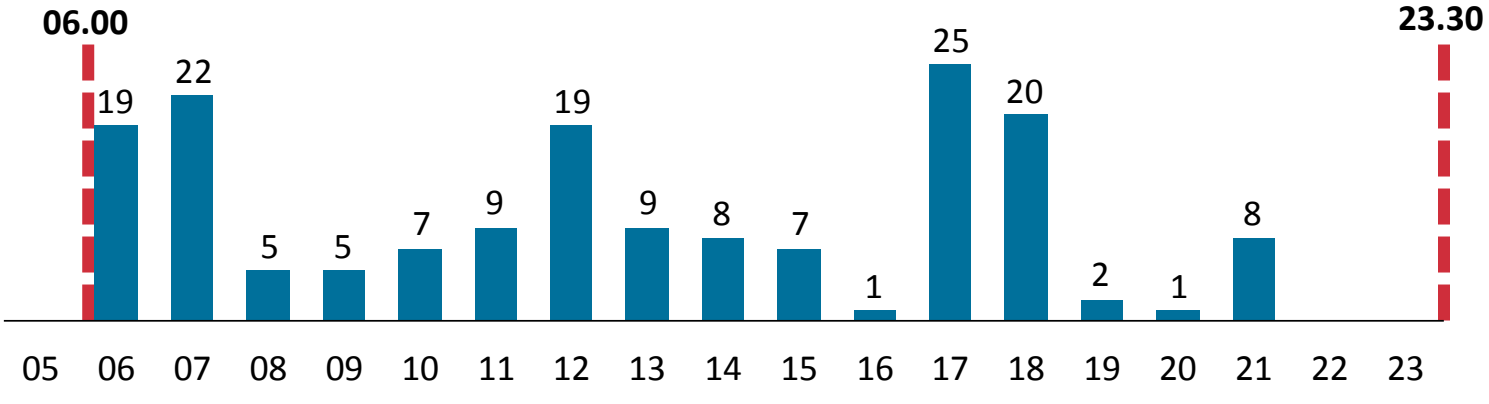
- 'Additional base'- flights peak in the early morning (departures) and late evening (arrival)
- During the day, flights will also arrive and depart, but there is a less clear pattern

Source: OAG data; M3 Consultancy analysis

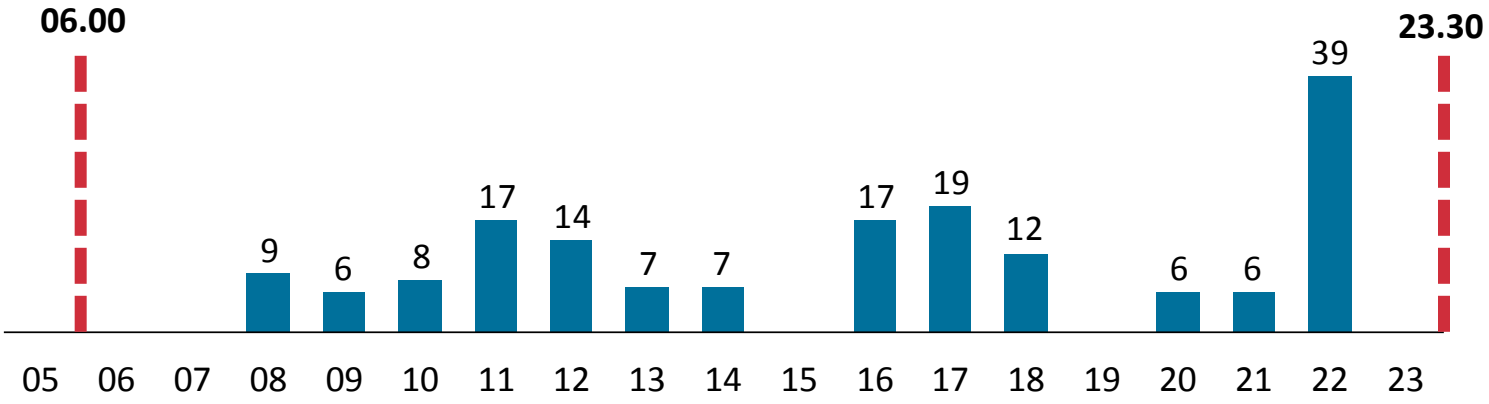
D easyJet's operation at ORY has an even more pronounced peak in the evening due to the curfew at 11.30 pm

ADDITIONAL BASE

WEEKLY NUMBER OF EASYJET FLIGHTS AT ORY PER HOUR DURING THE FIRST WEEK OF AUGUST 2017



Departing flights by easyJet from ORY



Arrival flights by easyJet at ORY

- Compared with CDG, the flights arriving at ORY, have an even stronger peak in the evening due to the curfew starting at 11.30 pm

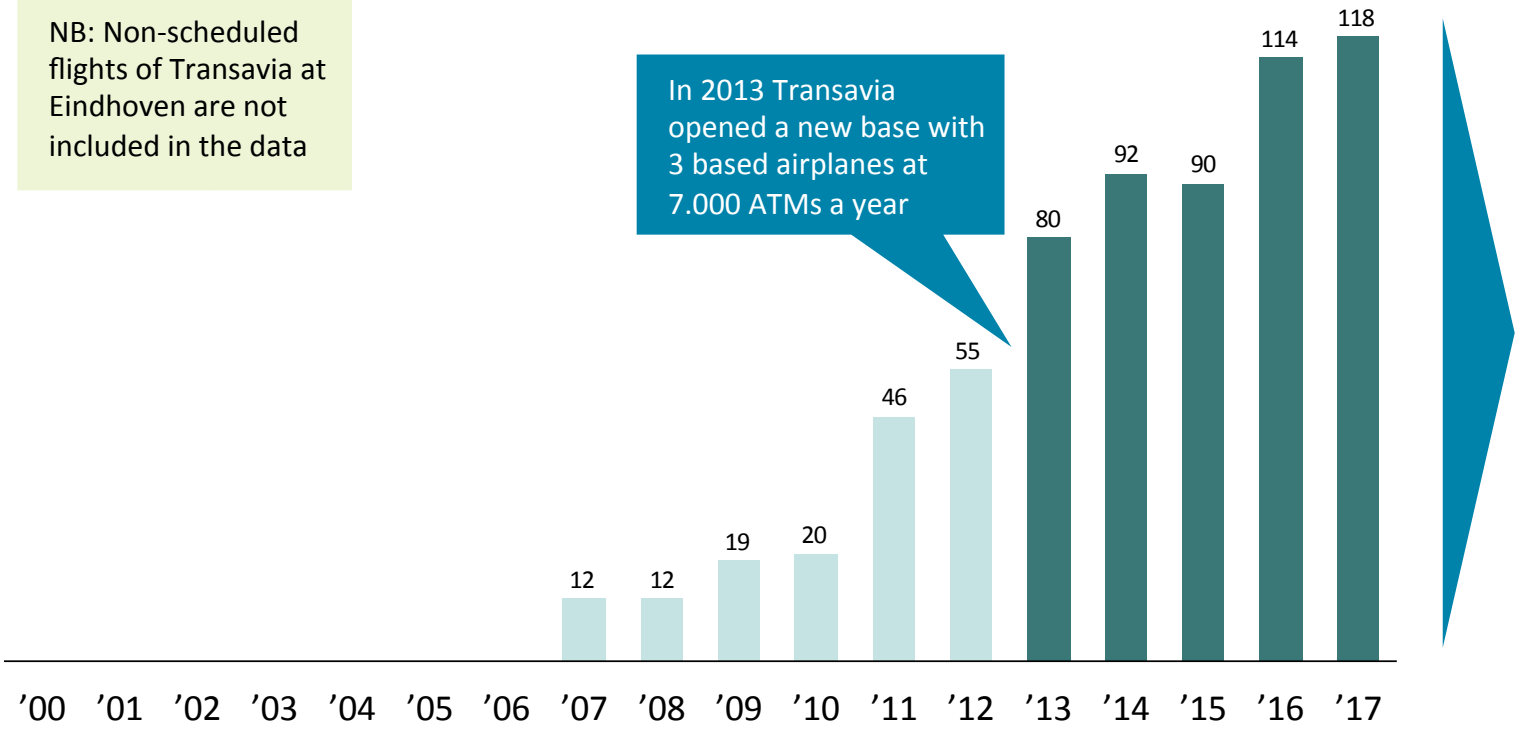
Source: OAG data; M3 Consultancy analysis

C Transavia started with an 'outside base'-operation to grow at Eindhoven before setting up its base there with 7.000 ATMs

ADDITIONAL BASE

TOTAL NUMBER OF DEPARTURES IN THE FIRST WEEK OF AUGUST BY TRANSAVIA AT EINDHOVEN

NB: Non-scheduled flights of Transavia at Eindhoven are not included in the data



- Transavia was able to operate a small number of flights through an 'outside base'-operation
- As soon as Transavia got the opportunity, Transavia opened a base with approx. 7.000 ATMs per year

Source: OAG data; M3 Consultancy analysis

Case study - Transavia at Munich: background

- Transavia announced in the end of 2015 the opening of a new base in Munich from summer 2016 with 4 based aircraft and additional 17 new destinations. This was their first base outside their home market in the Netherlands and France
- This was done with a Dutch Air Operators Certificate (AOC) with a local crew (approx. 100 crew members)
- However, in the beginning of 2017 Transavia had already decided to close down the base from the end of 2017 due to disappointing results

TRANSAVIA CONFIRMS OPENING OF ADITIONAL BASE IN MUNICH

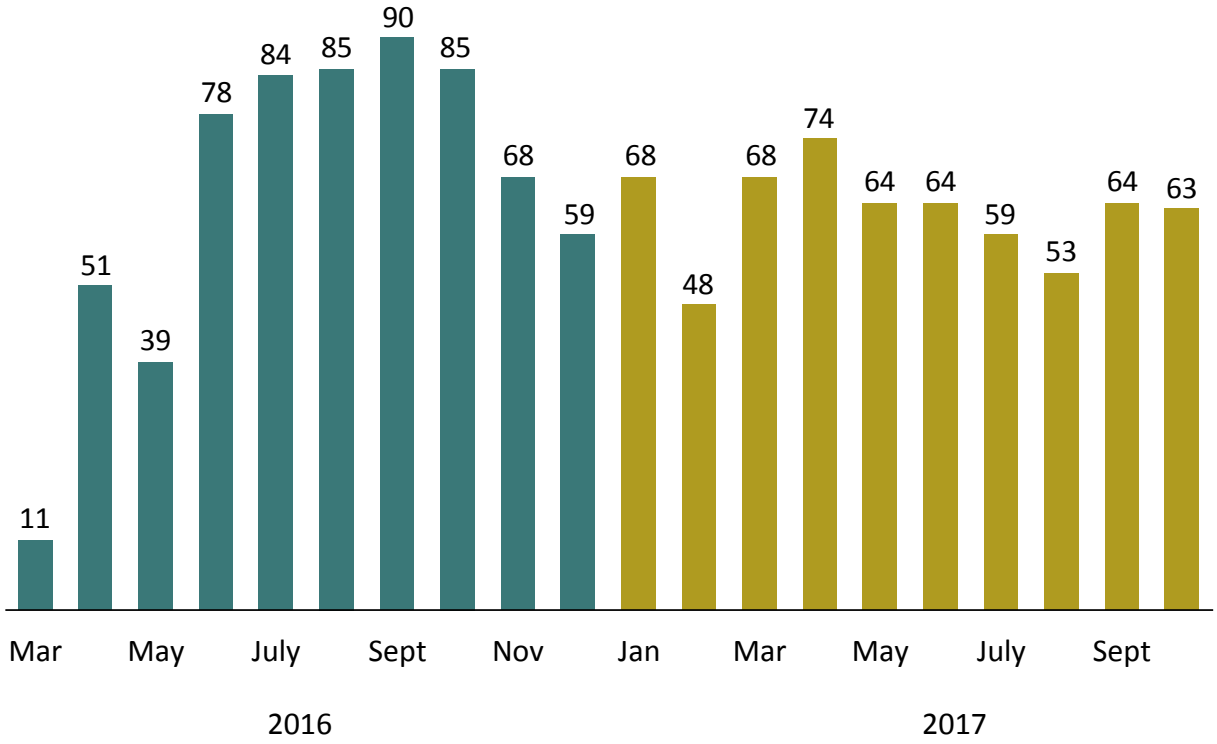
30 november 2015 - 14:00 | Door: onze redactie

Source: newspapers/website articles

C The additional base of Transavia at Munich started its first year with an operation of around 8.500 ATMs a year

ADDITIONAL BASE

AVERAGE NUMBER OF DEPARTURES PER WEEK BY TRANSAVIA AT MUNICH



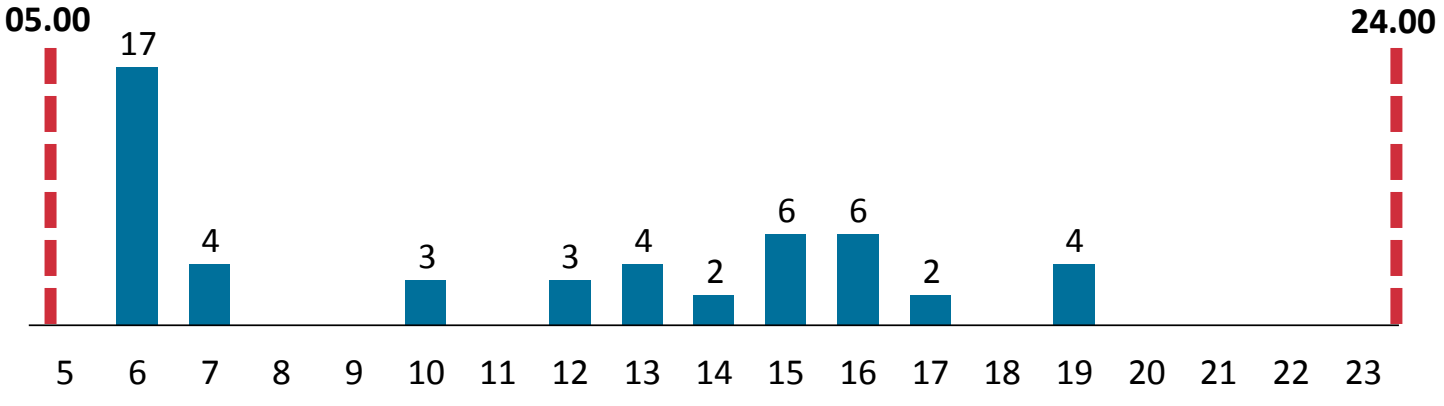
- In the first part of the operation, Transavia started with 80-85 departures per week (approx. 8.500 ATMs per year)
- In the second year, this was decreased to 65 departures per week (approx. 6.500 ATMS per year)

Source: OAG data; M3 Consultancy analysis

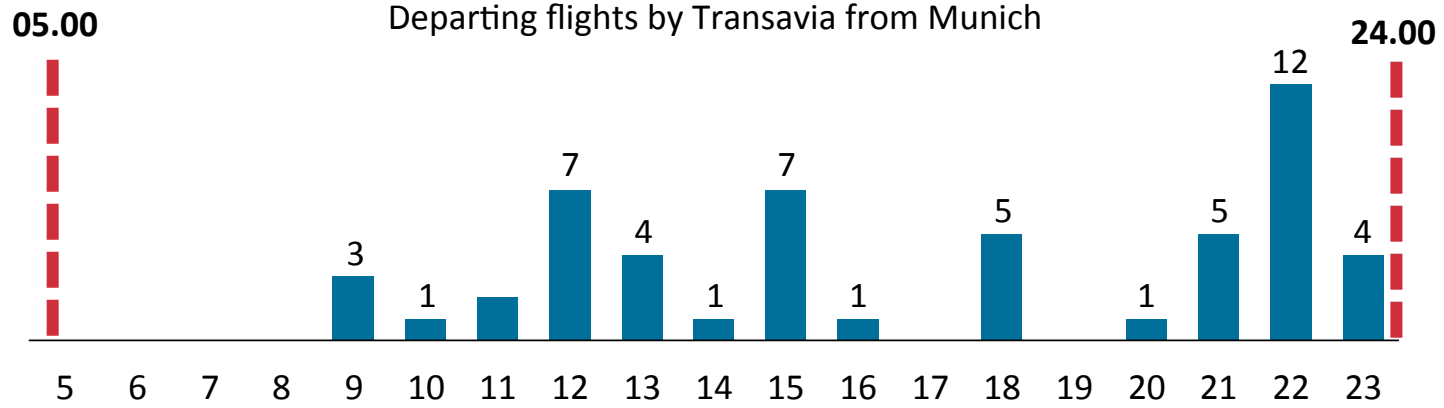
D Transavia fully exploits the opening hours of Munich airport with a distinctive departing- and arriving peak

ADDITIONAL BASE

WEEKLY NUMBER OF TRANSAVIA FLIGHTS AT MUNICH PER HOUR DURING FIRST WEEK OF AUGUST 2017



Departing flights by Transavia from Munich



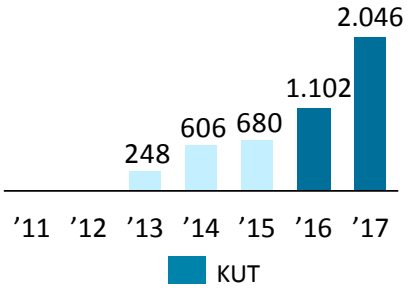
Arrival flights by Transavia at Munich

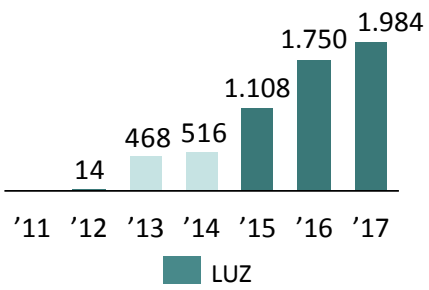
Source: OAG data; M3 Consultancy analysis

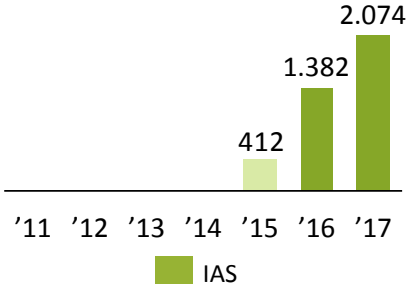
C Wizz Air typically operates smaller bases than any other airline, and operates flights for 2 to 3 years before starting a new base

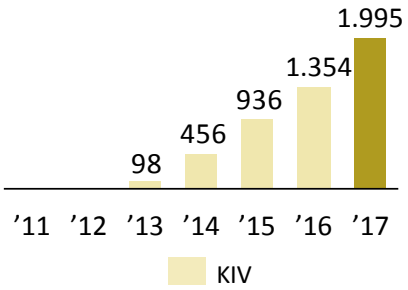
ADDITIONAL BASE

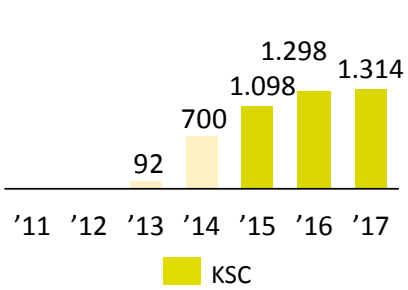
TOTAL NUMBER OF ATMs A YEAR BY WIZZ AIR

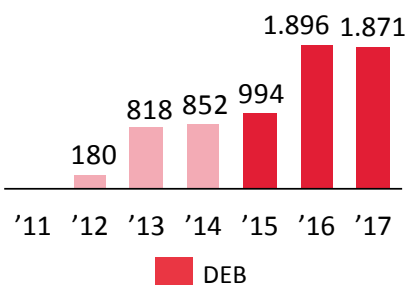




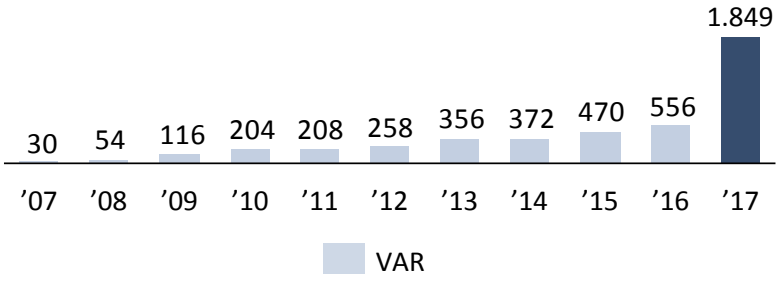








These 6 bases have a similar growth path; Wizz Air starts with a small number of 'single airport' flights for a couple of years to one of their bases (mostly to LTN, VLN and BUD). After opening a base on one of these airports, they increase the number of flights beyond 1000 per year and fly to other non-base airports as well



Before Wizz Air opened a base in '17 at Varna, Wizz air only flew from LTN to Varna. After opening a base here, Wizz Air started flights from Varna to non-base airports with a low frequency (twice a week), but also to one of their bases in Sofia with a higher frequency (7 times a week)

Source: OAG data; M3 Consultancy analysis

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- Introduction
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  - **'Multi-airport'**
  - 'Outside base'
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A ‘multi-airport’-operation is mainly run by foreign airlines to feed their flights from their home bases

MULTI-AIRPORT

Description

Typical airlines	▪ Foreign carriers
Operational adjustment in relation to single-airport	▪ Part of the flights from the home base to 1 destination will be done at a second airport in the same catchment area
Impact on the operation	▪ Very limited: - No adjustments at their home base airports - Little or no effect for crew - Limited increase in ground handling costs

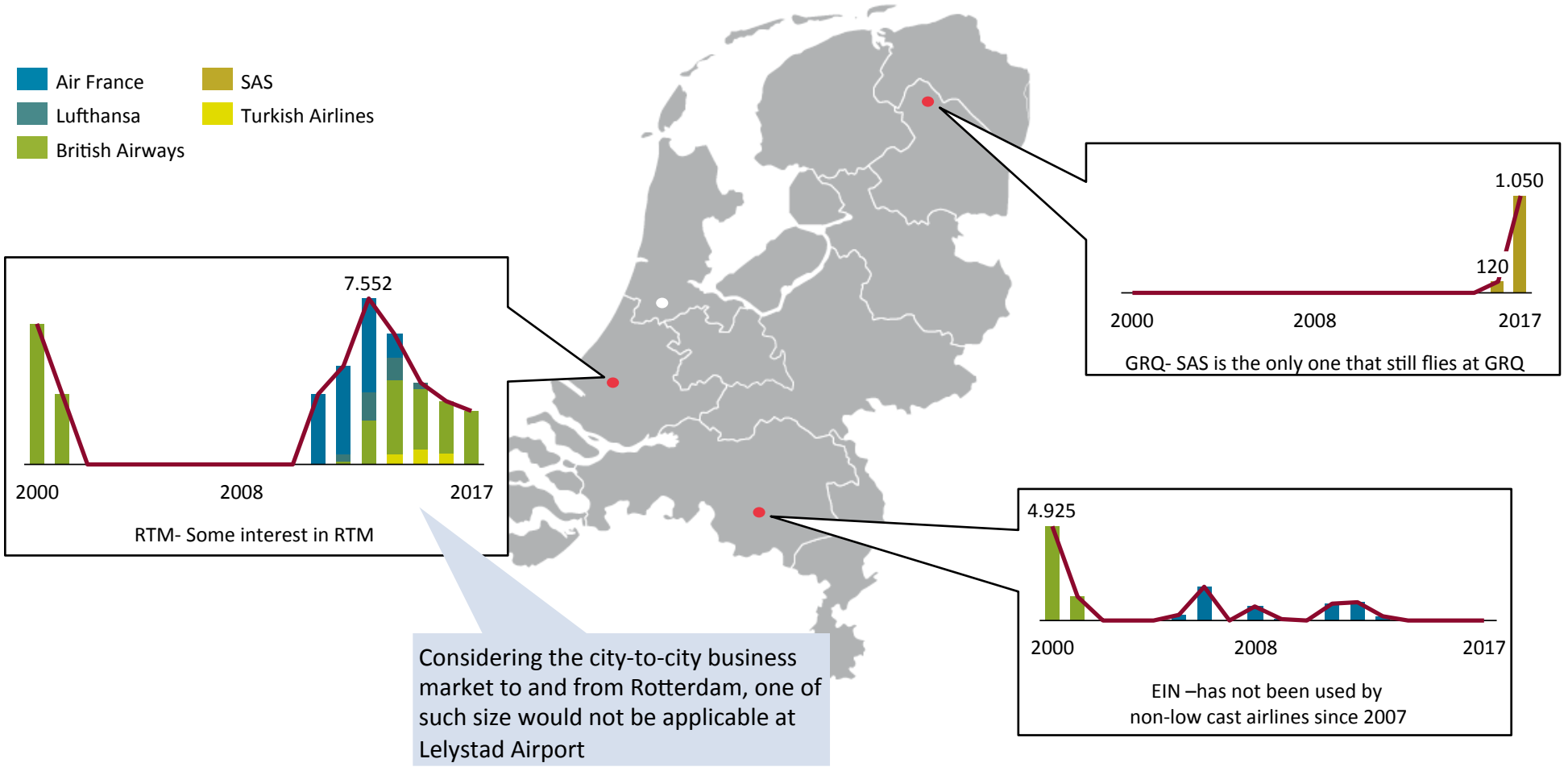
Insights from analysis/ case studies

A Dutch airports	▪ Different network airlines fly or have been flying on regional Dutch airports next to Schiphol ▪ However, not all attempts have succeed (for example Air France at EIN and Turkish Airlines at Rotterdam)
B Trends	▪ Larger airports attract more and more traffic at the expense of regional airports, unless there is a limited capacity or if a regional airport has a more favorable location (for example London City) ▪ However, new airlines still try to succeed in a certain route that has already shown failure at other airlines
C Typical size for airline	▪ Approximately 500-1.000 flights a year (normally one or two flights per week on a weekday)
D Typical operating hours	▪ Morning and evening (07-09h and 17-21h); sometimes includes a night stop ▪ In case of 1 flights: in the morning to feed the flights from their base
E Impact of Traffic Distribution Rule	▪ Approx. 7.500 flights at Schiphol operated by foreign airlines to/from leisure destinations might (temporarily) have to be a ‘multi-airport’ operation

A Some traditional airlines do or did operate a 'multi-airport'-model in the Netherlands, but in most cases not very successful

MULTI-AIRPORT

NUMBER OF MOVEMENTS PER YEAR PER AIRLINE IN THE NETHERLANDS



Source: OAG data; M3 Consultancy analysis

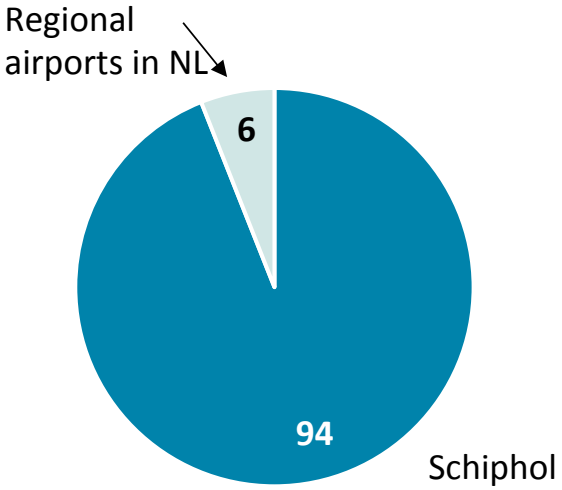
B Network carriers prefer a single airport within a single catchment area, because of passenger preferences and a more attractive proposition

MULTI-AIRPORT

Foreign airlines focus on Schiphol

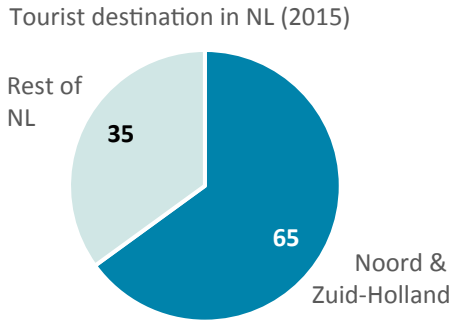
Share AMS of all non-LCC airlines of all flights from the Netherlands

100% = 3.480 departing flights in October 2017



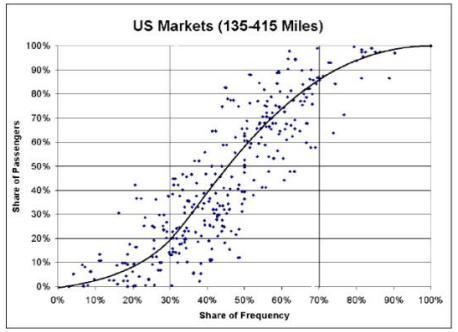
Foreign passengers prefer Schiphol over regional airports

- Most foreigners coming to the Netherlands, travel to the Randstad
- Foreign airlines have a higher share of foreign passenger and thus prefer to fly to Schiphol



Airlines prefer to focus on 1 airport

- A more appealing scheme with more frequencies result in a disproportional high market share on a route ('S-curve' effect)
- Thus airlines will prefer to concentrate their flight on 1 airport

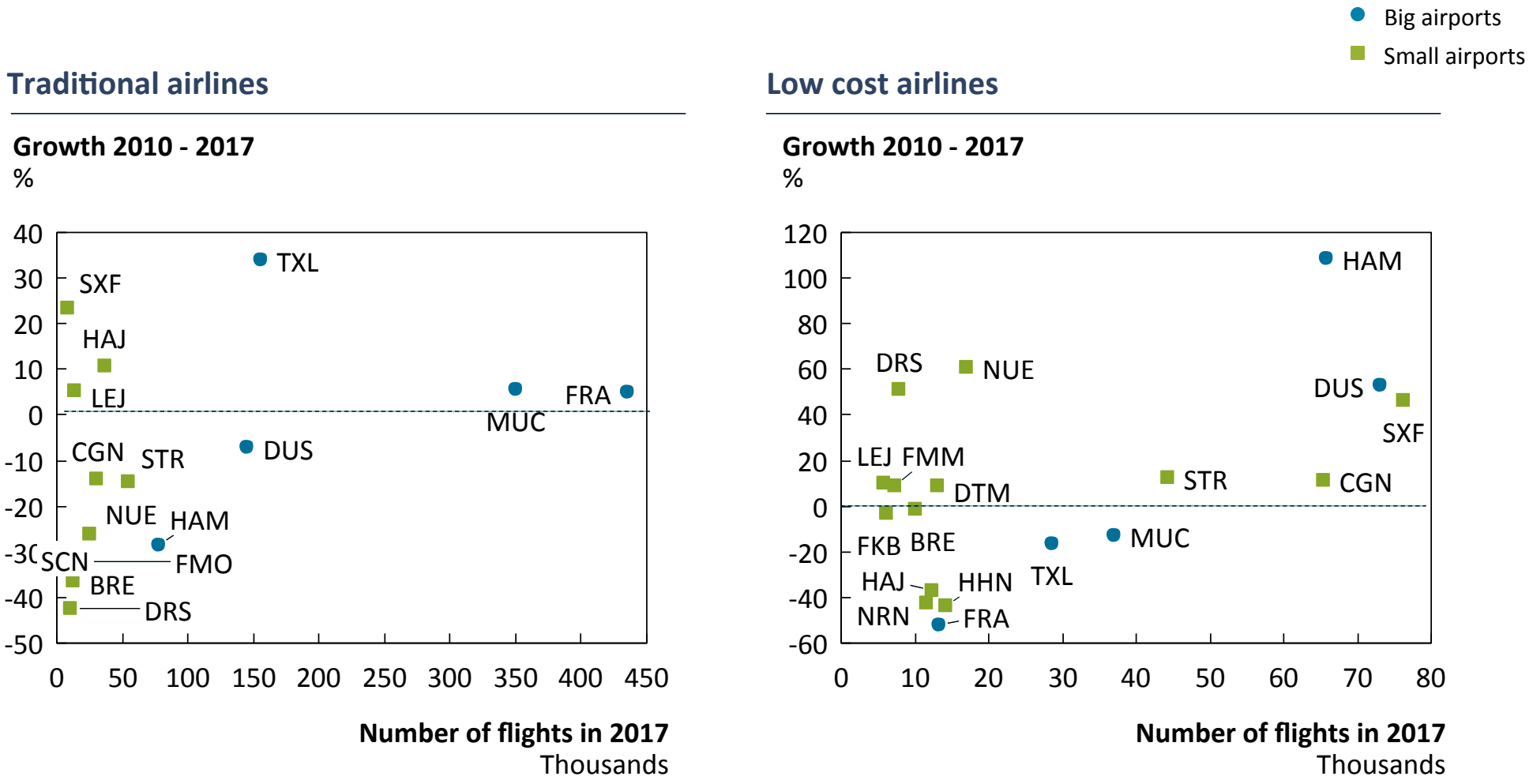


Source : CBS; OAG data ; M3 Consultancy analysis

B Traditional airlines as well as low cost airlines seem to have most interest in flying to/from major airports – Case: Germany

MULTI-AIRPORT

GROWTH PATTERN OF TRADITIONAL AND LOW COST AIRLINES AT THE SIZE OF AN AIRPORT FOR GERMAN AIRPORTS WITH MORE THAN 5.000 FLIGTHS A YEAR

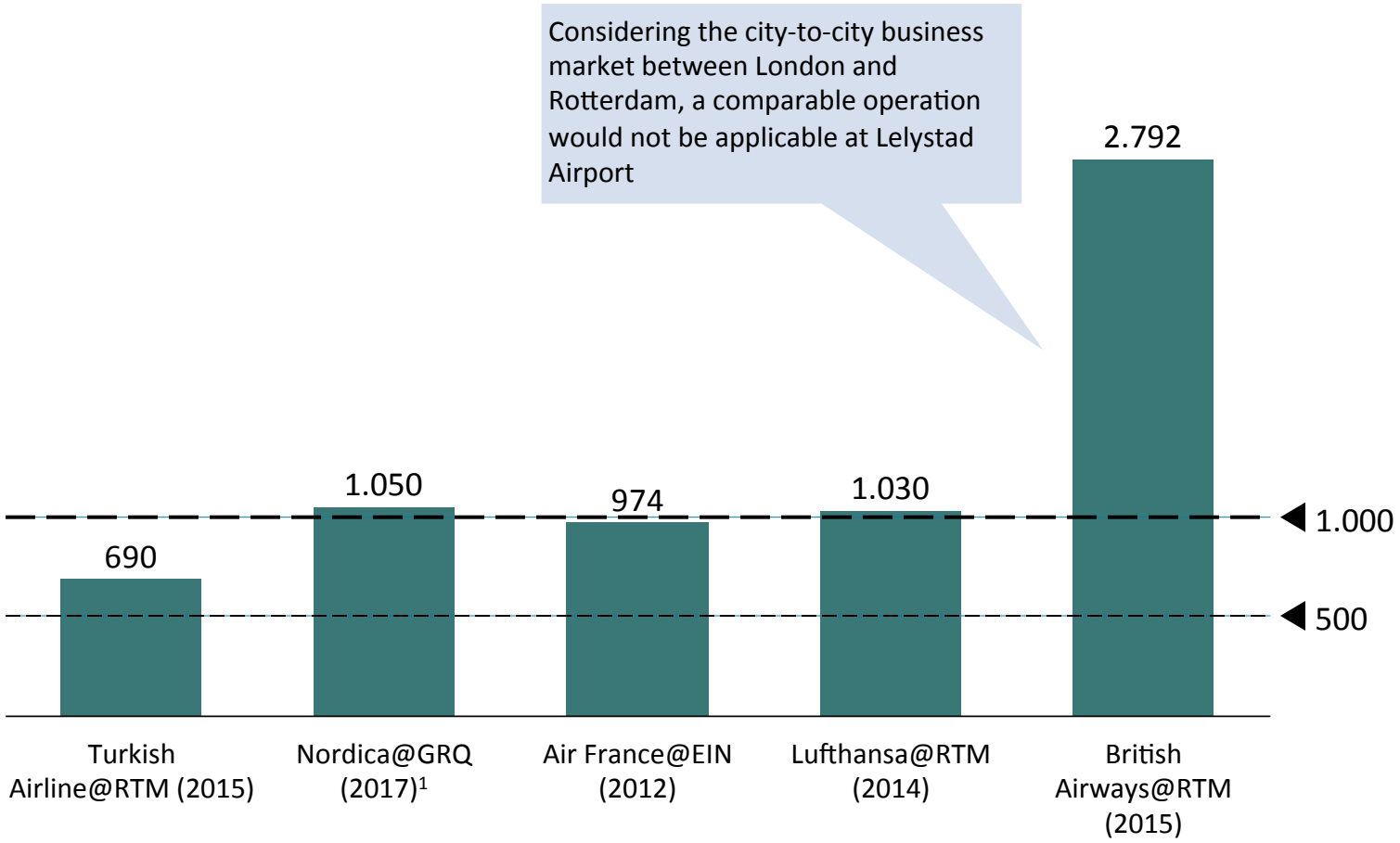


Source: OAG data; M3 Consultancy analysis

C The number of annual flights for a 'multi-airport'-operation is on average between 500 and 1.000

MULTI-AIRPORT

NUMBER OF ANNUAL FLIGHTS PER AIRLINE, AIRPORT AND YEAR



Source: OAG data; M3 Consultancy analysis

1) LOT Polish Airlines under brand name Nordica, feeds the hub of SAS at Copenhagen

D In 'multi-airport' situations, airlines typically turn around early morning/late afternoon to serve the business market and feed the hub

MULTI-AIRPORT

TIMES OF ARRIVAL AND DEPARTURE FOR A 'MULTI-AIRPORT'-OPERATION BY FOREIGN AIRLINES ON DUTCH REGIONAL AIRPORTS

		TK@RTM	BA@RTM	LH@RTM	AF@EIN	SK@GRQ
2012	A		11.10 15.05 19.05		13.20 10.30 20.50	
	D		12.00 16.15 19.45		13.55 17.50 7.30	
2013	A		9.40 15.00 20.15	8.05 18.35	10.30 20.50	
	D		10.35 15.40 20.55	8.40 19.10	17.50 7.30	
2014	A	14.50	9.20	8.30 18.35		
	D	15.40	10.20	9.00 19.10		
2015	A	21.25	18.30	8.20 18.50		
	D	8.10	19.20	8.55 19.35		
2016	A	21.15	15.25			8.50 18.45
	D	8.15	19.15			9.15 19.10
2017	A		21.30			8.50 18.45
	D		9.55			9.15 19.10

During the day

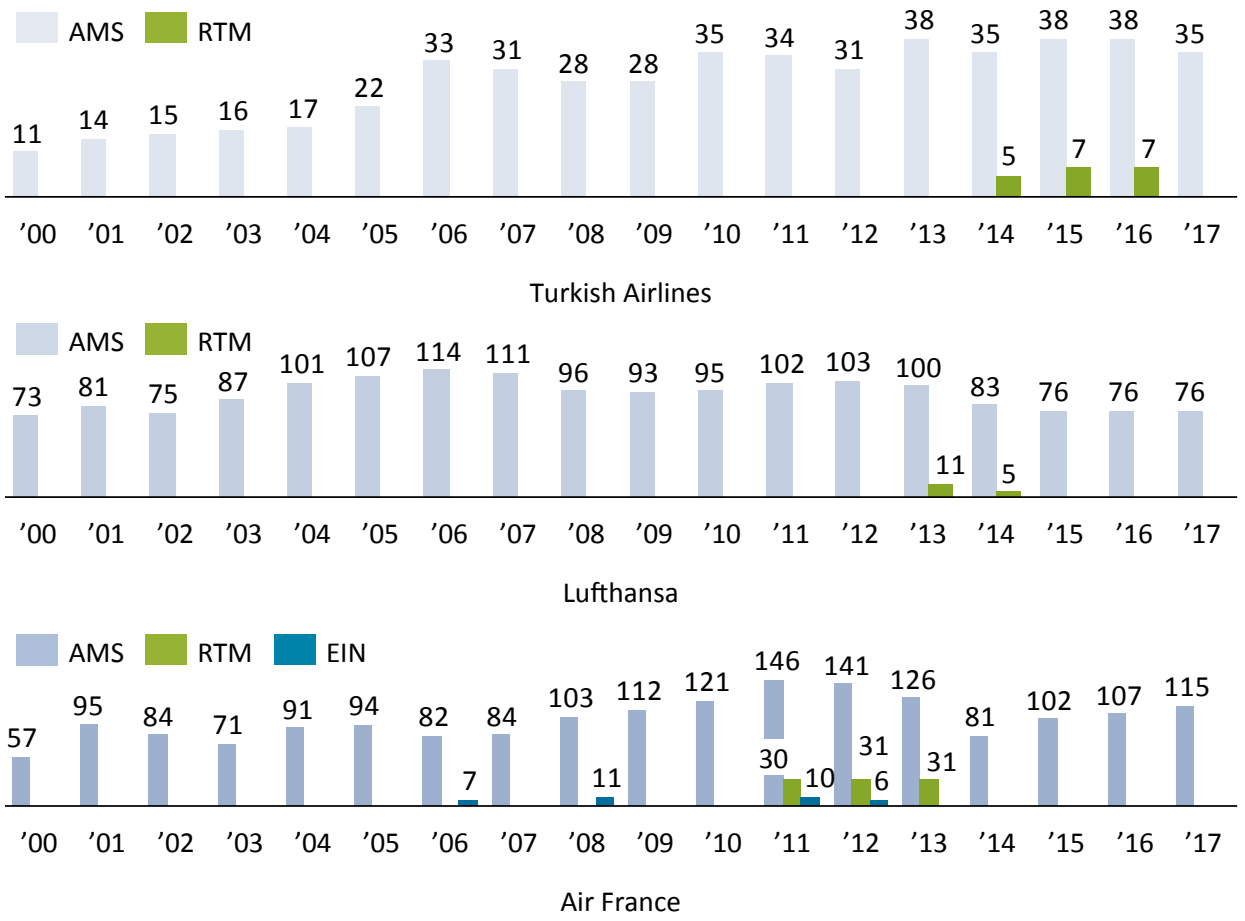
Early morning/late afternoon

Source : OAG data; M3 Consultancy analysis

D In general ‘multi-airport’-operations seem to lack commercial viability - Cases: Turkish Airlines, Lufthansa and Air France

MULTI-AIRPORT

TOTAL NUMBER OF DEPARTURES IN THE FIRST WEEK OF AUGUST BY TURKISH AIRLINES, LUFTHANSA AND AIR FRANCE IN THE NETHERLANDS



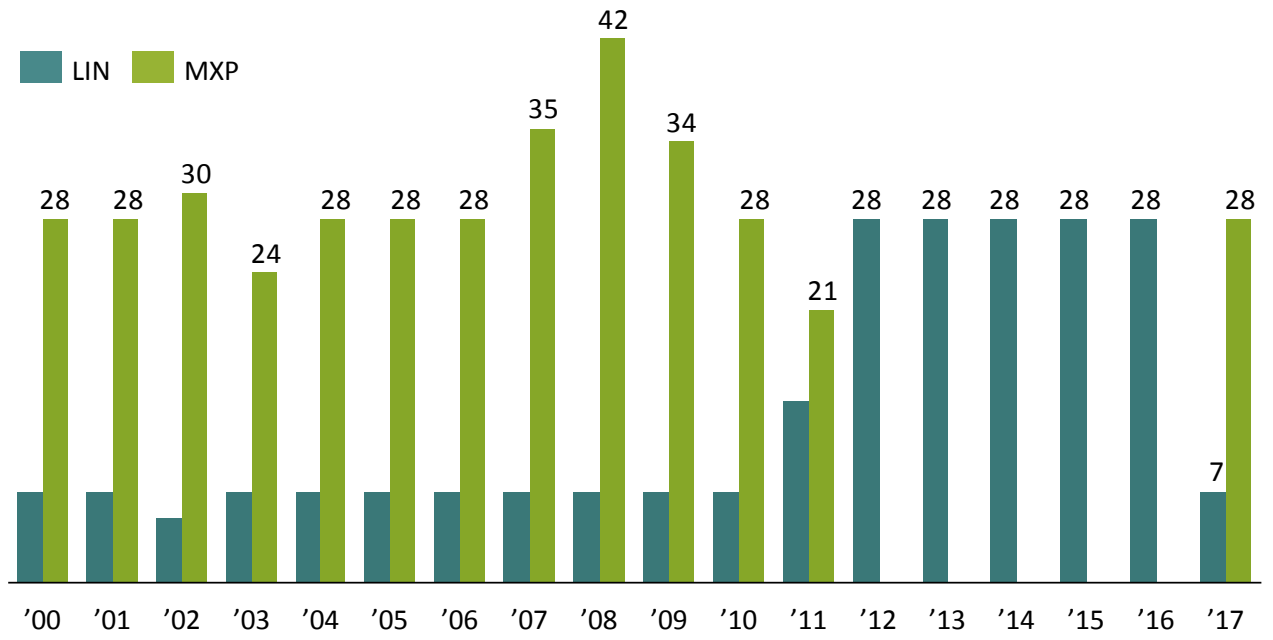
- Flying at Rotterdam and Eindhoven Airport was seen as a market opportunity for these airlines. However, after a while they have stopped flying to the Dutch regional airports, due to the lack of demand for these routes

Source: OAG data; M3 Consultancy analysis

D In general ‘multi-airport’-operations seem to lack commercial viability — Case: KLM at Milan Linate/Malpensa

MULTI-AIRPORT

TOTAL NUMBER OF DEPARTURES IN THE FIRST WEEK OF AUGUST BY KLM AT MILAAN-LINATE AND MALPENSA



- Until 2012 there was a limited number of slots for KLM at LIN (which is more favorable, due to its location), and thus KLM was forced to operate at MXP as well
- From 2012 until 2017 KLM had a contract with Alitalia and gained more slots at LIN
- In 2017, the contract was broken and KLM was forced to move to MXP

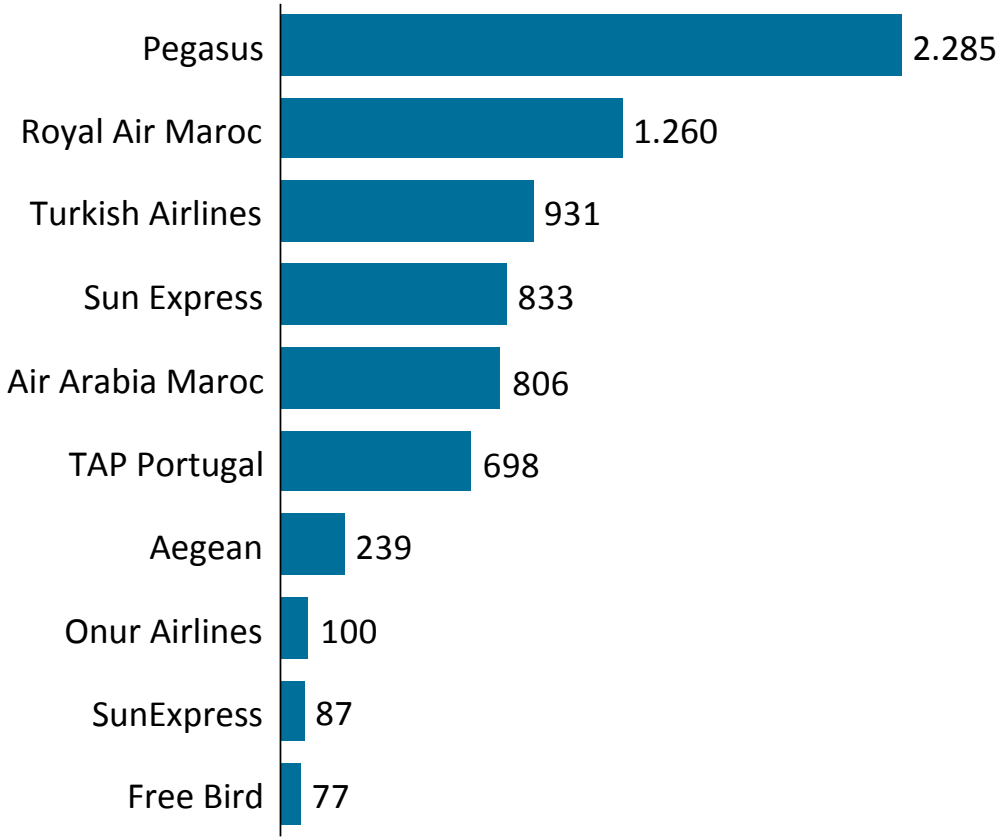
- As soon as the possibility arose, KLM concentrated at only 1 airport instead of operating in a ‘multi-airport’-operation
- A ‘multi-airport’-operation seems only interesting if no other alternative is available and is being preferred above ‘not flying’ to this region

Source: OAG data; M3 Consultancy analysis

E The envisioned traffic distribution rule could (temporarily) push up to 7.500 ATMs of foreign airlines into a 'multi-airport'-operation

MULTI-AIRPORT

NUMBER OF AIR TRAFFIC MOVEMENTS BETWEEN SCHIPHOL AND LEISURE DESTINATIONS OF THE KEY FOREIGN AIRLINES IN 2016



- The top 10 foreign carriers operating from leisure destinations to Schiphol (mainly Turkish and Moroccan airlines) have a combined volume of 7.316 slots, (17% of leisure flights to which the traffic distribution rule would apply to)
- Switching these flights from Schiphol to Lelystad might at least temporarily lead to a 'multi-airport'-operation, but as more capacity at Lelystad is becoming available, this will ultimately become 'single airport'-operations (and thus these airlines will no longer operate in a split operation)

Source: SEO Analyse: Finaal overzicht leisurebestemmingen

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An ‘outside base’-operation is mainly applied by Dutch charter airlines, but volumes of this type of operation are rapidly declining

OUTSIDE BASE

Description

Typical airlines	▪ Dutch charter/hybrid airlines; sometimes foreign (for example Turkish) charter airlines
Operational adjustment in relation to single-airport	▪ After the first flight from their base to another airport, they fly to a different non-based airport, but will end their day at their base again
Impact on the operation	▪ Limited: - No adjustments at their home base airport - Possible crew inefficiency in case of long haul flights; there is a need of a new crew on the secondary airport or the old crew ends on the wrong airport - Limited increase in ground handling costs

Insights from analysis/ case studies

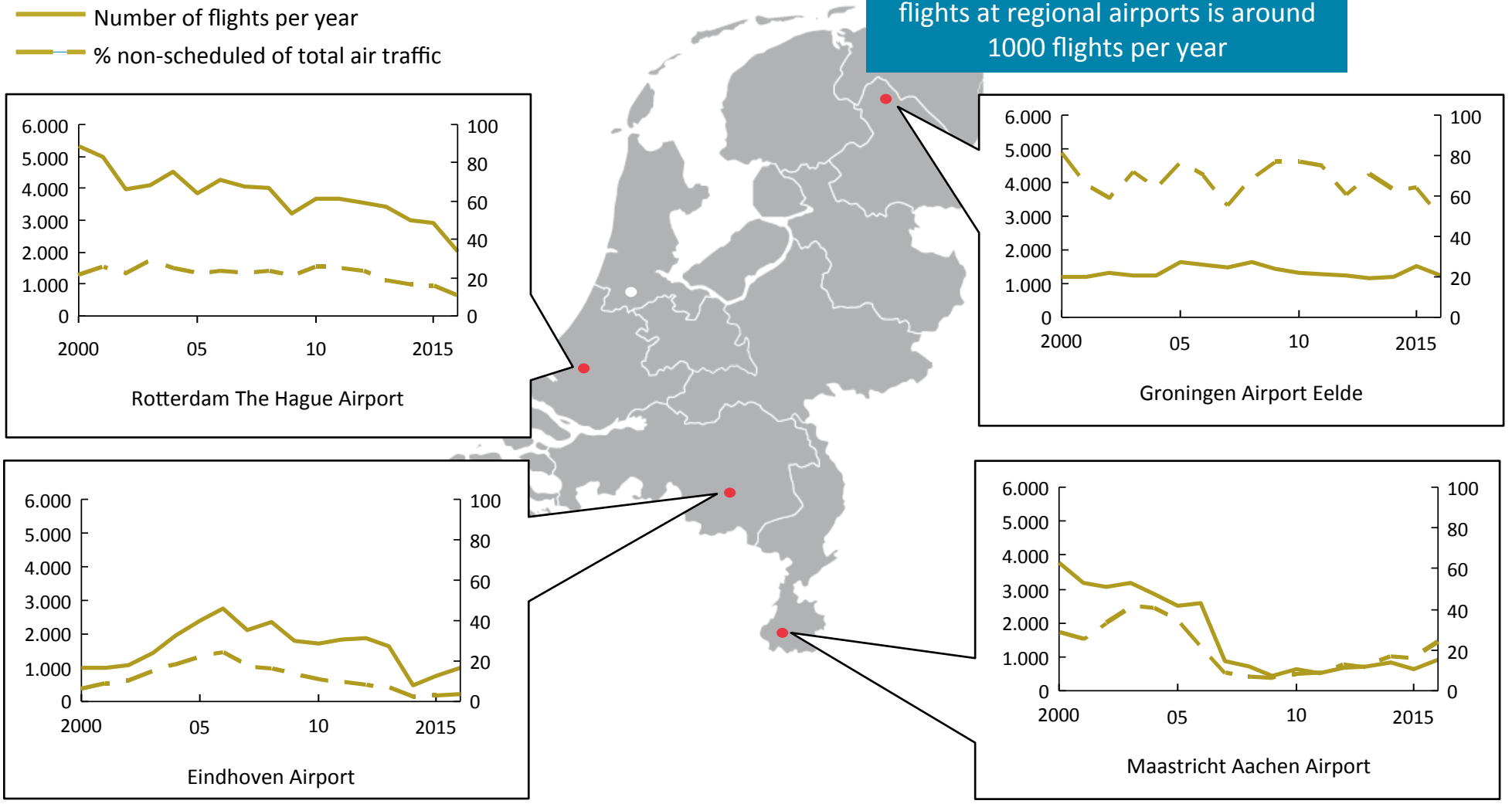
A Dutch airports	▪ Non-scheduled flights have been operated from regional airports for a long time. However, its volume/relative importance is declining since 10 years ▪ Yet, TUI Fly intends to base airplanes at Rotterdam and Eindhoven to offer flights to leisure destinations
B Trends	▪ The only business model in which the ‘outside base’-operation occurs, is the charter concept, which is however declining in volume in Europe due to frequency needs and competition of low cost
C Typical size for airline	▪ Approximately 1.000 ATMs a year (once or twice a week to multiple destinations by 1 or 2 airplanes)
D Typical operating hours	▪ During the day (normally between 11h00 and 18h00)
E Impact of Traffic distribution rule	▪ This pattern does not fit with the requirements of the VVR to prioritize flights in block 2 and 6 ▪ It is often applied as an intermediate step before opening an additional base

A Non-scheduled flights make up a small part of air traffic operated at the Dutch regional airports, and this part is decreasing

OUTSIDE BASE

NON-SCHEDULED FLIGHTS PER YEAR

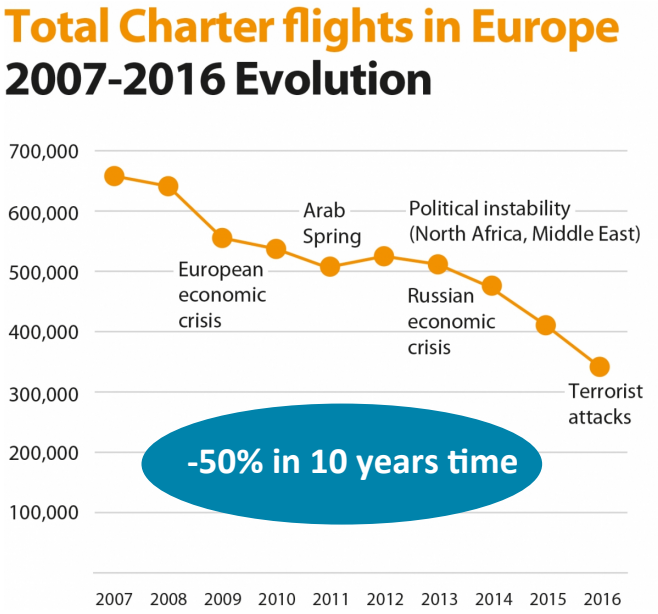
The annual volume of non-scheduled flights at regional airports is around 1000 flights per year



Source: OAG data; M3 Consultancy analysis

B The charter airline model, typically operating 'outside base', is under pressure in Europe

OUTSIDE BASE



Reason decline charter flights:

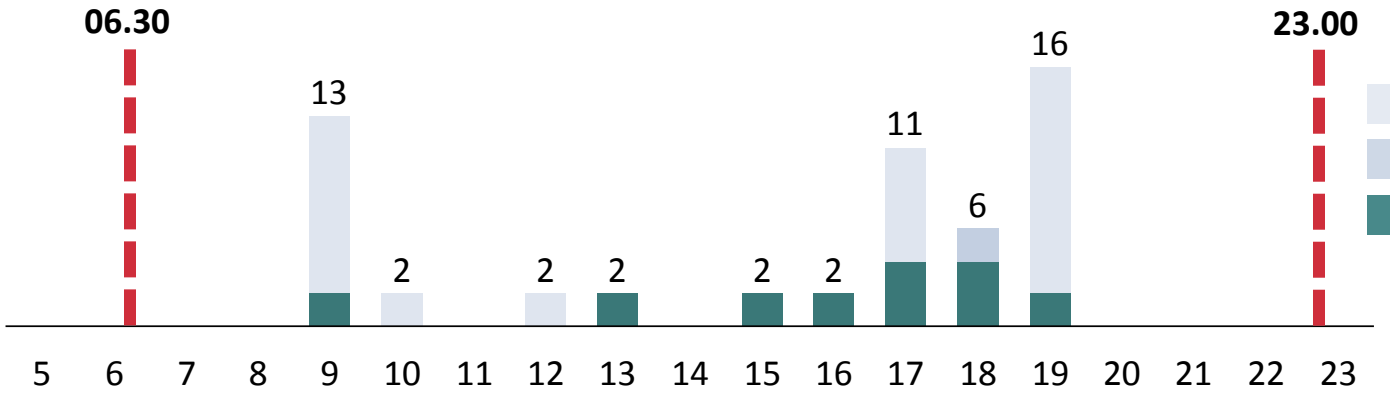
- Passengers want more flexibility and thus a higher frequency
- Low cost airlines have the same low cost structure as charter airlines and since 2000, they also focus on typical charter destinations
- In the USA, which has the most mature aviation market, there is hardly any charter airline and leisure destinations are almost completely offered by traditional airlines (such a Delta Airlines) and low cost (for example Jet Blue). KLM as well has leisure destinations in her network (Ibiza)

Source: Eurocontrol

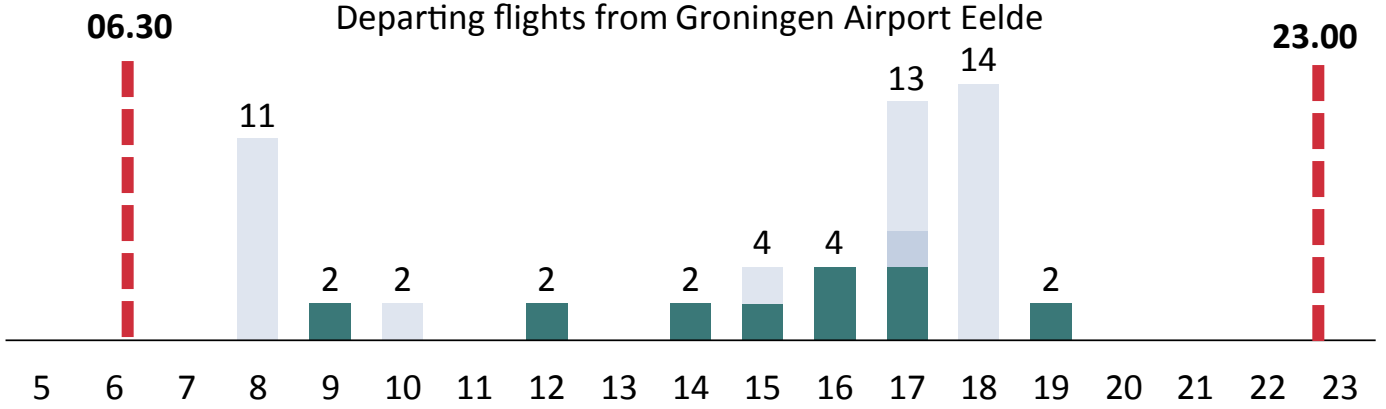
D The ‘outside base’-operation occurs typically during the middle of the day

OUTSIDE BASE

WEEKLY NUMBER OF FLIGHTS AT GRQ PER HOUR IN THE LAST WEEK OF AUGUST 2017



Departing flights from Groningen Airport Eelde



Arriving flights at Groningen Airport Eelde

’Multi-airport’ flights (type 1)
’Additional base’ flights LCC (type 3)
’Outside base’ flights (type 2)

- This pattern is very similar for Maastricht Aachen Airport, at which ‘outside base’-flights also occur during the middle of the day
- This pattern does not fit with the requirements of the VVR to prioritize flights in block 2 and 6

Source: https://www.groningenairport.nl/voor-reizigers/vluchten

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Lelystad directly meets airline requirements to operate ‘multi-airport’- and ‘outside base’-operations, but does not immediately offer capacity for one or more bases

REQUIREMENTS PER TYPE OF SPLIT OPERATION

	LELYSTAD AIRPORT	MULTI-AIRPORT	OUTSIDE BASE	ADDITIONAL BASE
Opening hours	**6.00 – 23.00/24.00**	Early morning/late afternoon: 7.00 – 21.00 ✓	During daytime: 11.00 – 18.00 ✓	Maximum opening hours: 6.00 – 24.00 ✓
Required scale (ATMs)	**Total: 4.000 (met yearly growth of +2k)**	>500 – 1.000 ATMs per airline ✓	>500 – 1.000 ATMs per airline ✓	>6.000-10.000 ATMs per airline (ultra LCC: 2.000 ATMs) ✗ ✓

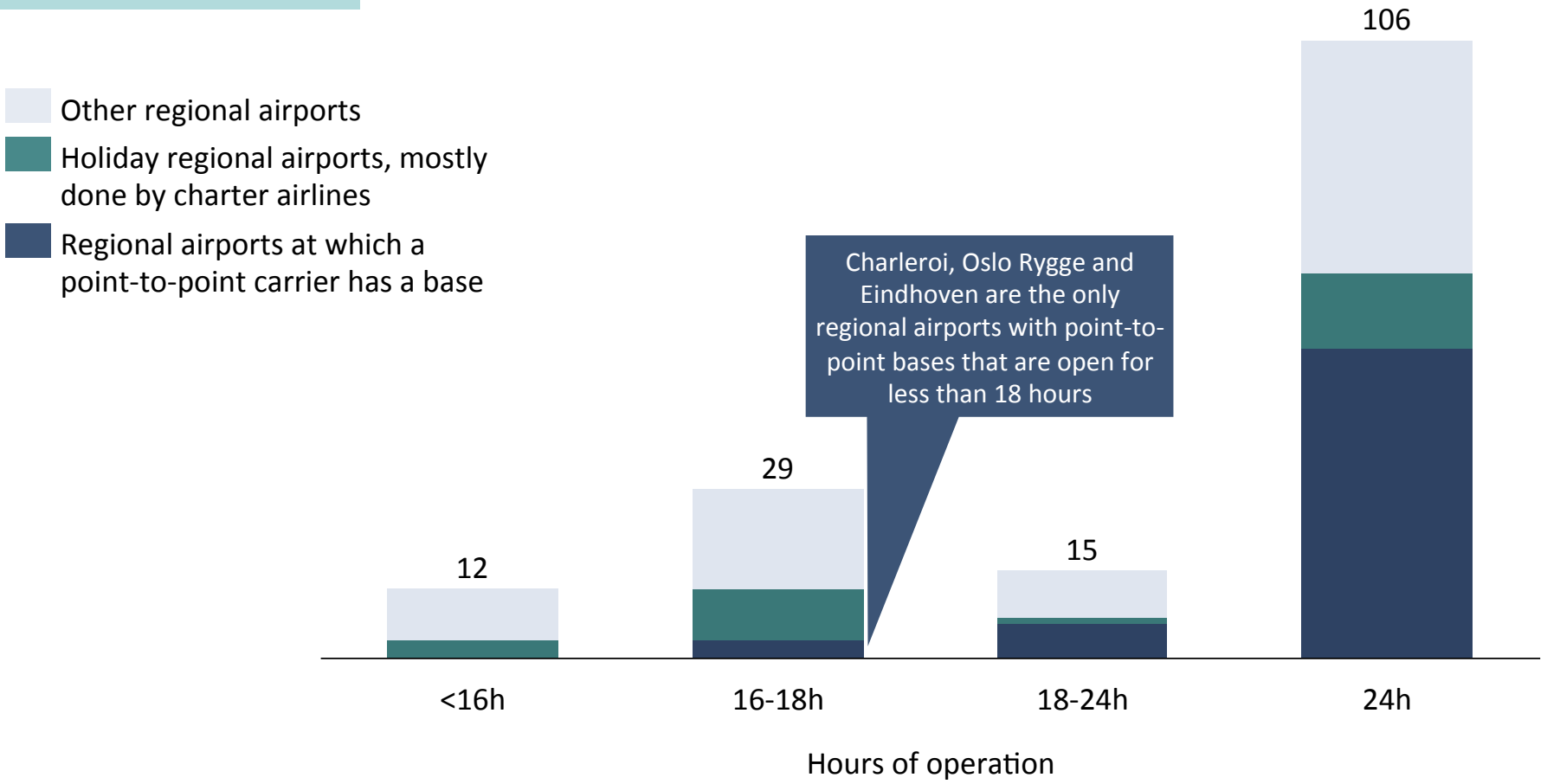
Based on current insights. Final conditions for LEY have not been decided

Even at 10.000 available ATMs at Lelystad airport, capacity may not be sufficient to open an additional base, since slots will be distributed over multiple airlines

The envisioned opening hours at Lelystad airport are relative to other regional airports not overly constrained

HOURS OF OPERATION FOR 162 REGIONAL AIRPORTS IN EUROPE (>200.000 departing seats/year)

Opening hours Lelystad Airport:
6.00 – 23.00/24.00



Source: SEO-study: "Analysis opening hours Eindhoven Airport"

In conclusion, airlines could operate in a ‘multi-airport’- or ‘outside base’-type at Lelystad, while developing towards an ‘additional base’ once sufficient capacity is available

	OUTSIDE BASE	MULTI-AIRPORT	ADDITIONAL BASE
Opportunity for Lelystad	• Well feasible	• Well feasible (depending on opening hours)	• Only if total capacity is >10-15K ATMs
Type airline	• Charter airlines	• Foreign airlines	• Dutch/foreign (hybrid) airlines
Bottlenecks	• Market trends are declining for this type of operation • Some airlines may be attracted with low airport charges • This pattern does not fit with the requirements of the VVR to prioritize flights in block 2 and 6	• Only of interest to limited number of airlines • Creates small volumes (ATMs) • Requires long opening hours	• Requires a larger scale operation (>6.000 ATMs), which, given the projected growth path for LEY, will not be reached before 2024