

# THE DYNAMIC WORLD OF SCHEDULES DATA

The Implications For Air Service Development Analysis

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# INTRODUCTION

Airline schedules data is the backbone of all other data sets.

All of us in this room are here because of airline schedules that were pitched, discussed, negotiated, and implemented, and changed - through Air Service Development meetings year(s) prior to today.

OAG has been receiving and distributing airline schedules since 1929, and still maintains a digital library of schedules data going back 40 years.

The process of taking in airline schedules from over 900 airlines around the world is a constantly moving and complex process.

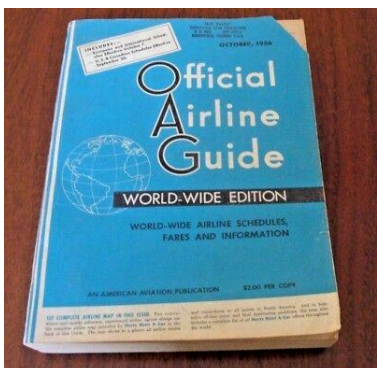
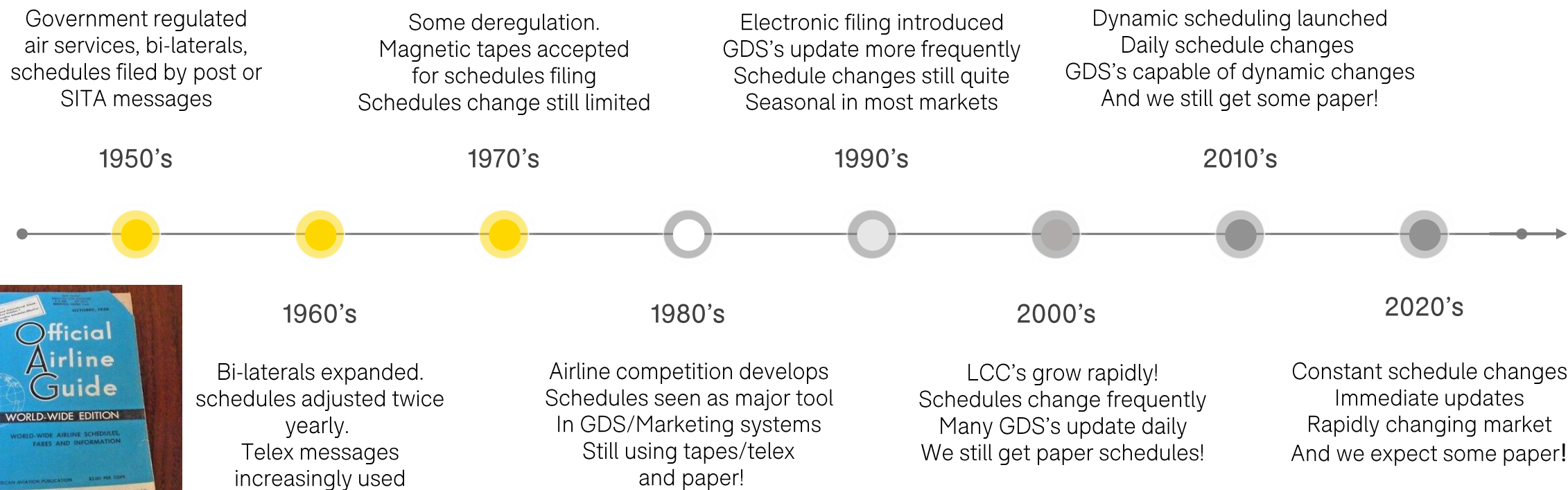
The objective is to help explain, understand, and simplify the fundamentals of airline schedules data and air service development.

A photograph of an airplane wing and tail against a sunset sky with clouds. The wing is white with a blue stripe, and the tail is blue. The sky is a mix of orange, yellow, and blue, with white clouds. The sun is low on the horizon, creating a bright glow.

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# THE EVOLUTION OF SCHEDULES DATA



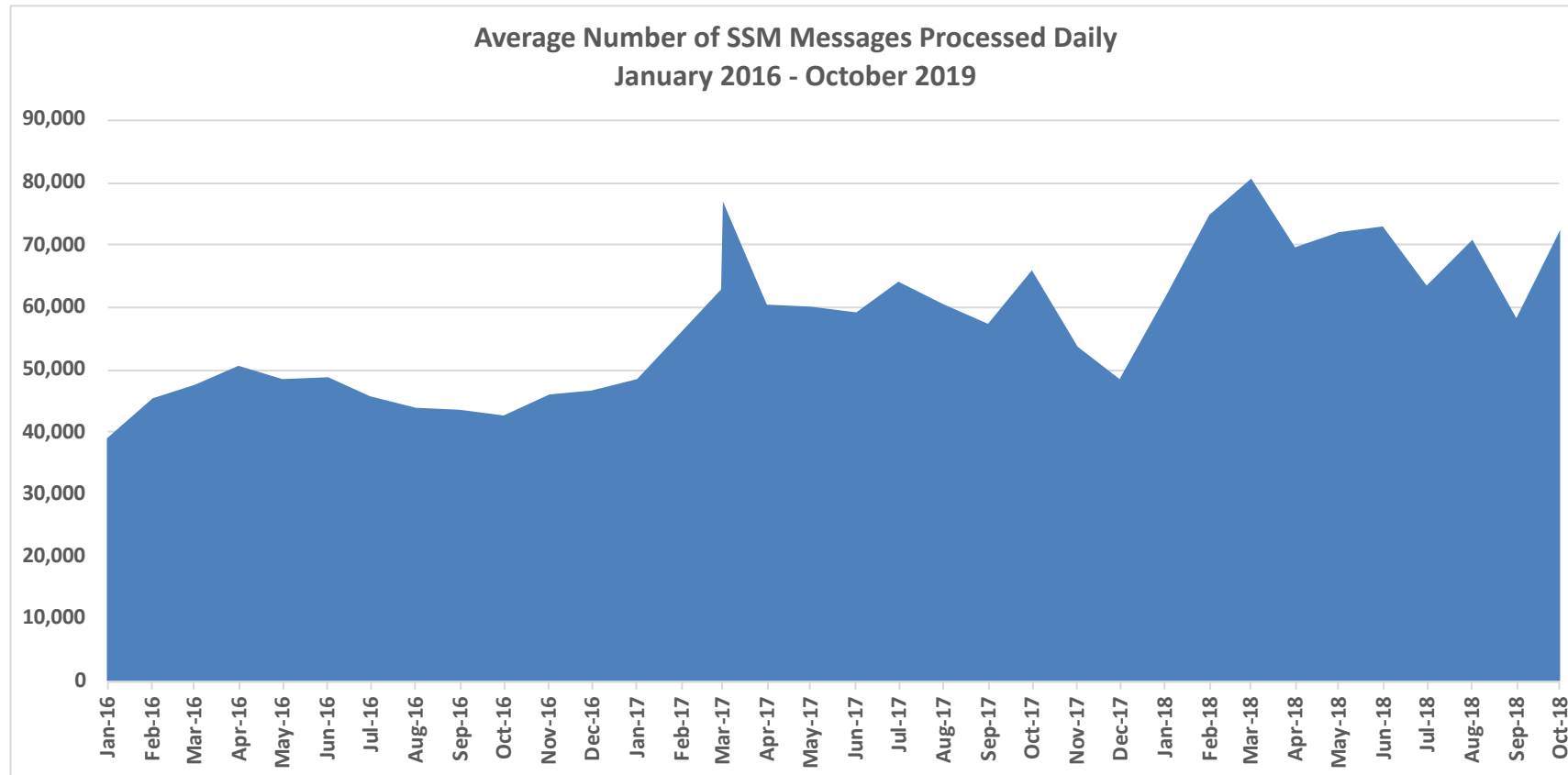


# HOW MUCH INFO IS IN AIRLINE SCHEDULES DATA?

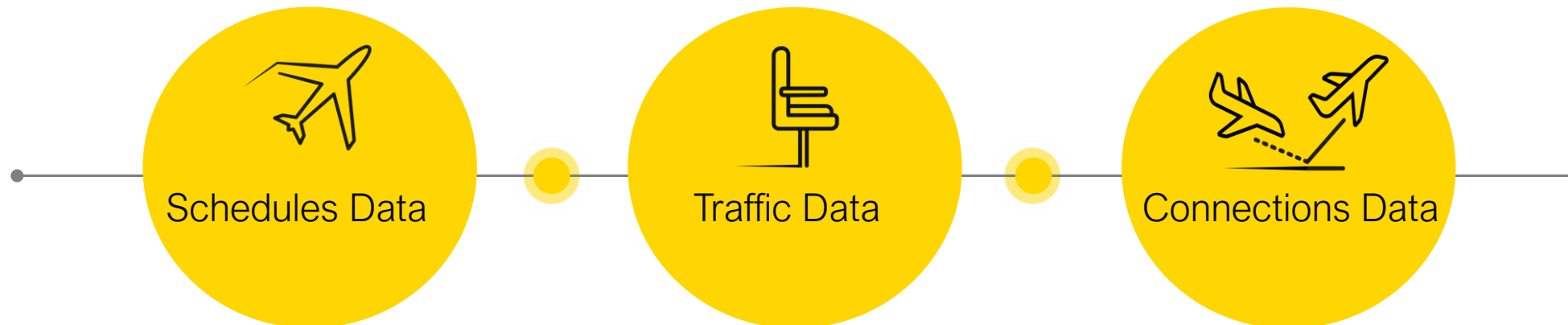
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2.	Carrier Code ICAO	Text	27.	Service Type	Text
3.	Service Number	Text	28.	Passenger Classes	Text
4.	Operational Suffix	Text	29.	Available Total Seats	Numeric
5.	Departure Port Code	Text	30.	Available First Class Seats	Numeric
6.	Departure Port Code ICAO	Text	31.	Available Business Class Seats	Numeric
7.	Departure Terminal	Text	32.	Available Premium Economy Class Seats	Numeric
8.	Departure City Code	Text	33.	Available Economy Class Seats	Numeric
9.	Departure Country Code	Text	34.	Meals	Text
10.	Arrival Port Code	Text	35.	Freight Classes	Text
11.	Arrival Port Code ICAO	Text	36.	Freight Tons	Numeric
12.	Arrival Terminal	Text	37.	Comment 010/050	Text
13.	Arrival City Code	Text	38.	Operating/Non-Operating Marker	Text
14.	Arrival Country Code	Text	39.	Ghost Flight	Text
15.	Departure Time	Text	40.	Duplicate Services	Text
16.	Arrival Time	Text	41.	Shared Airline Designator Code	Text
17.	Arrival Day	Text	42.	Shared Airline Designator Name	Text
18.	Elapsed Journey Time	Text	43.	Equipment Owner	Text
19.	Days Of Operation	Text	44.	Restriction	Text
20.	Effective From Date	Text	45.	Domestic/International MCT Marker	Text
21.	Effective To Date	Text	46.	Full Routing	Text
22.	Stops	Numeric	47.	Longest Sector	Text
23.	General Equipment Type	Text	48.	Intermediate Ports	Text
24.	Specific Equipment Type	Text	49.	Distance	Numeric
25.	Specific Equipment Type ICAO	Text	50.	Government Approval	Text
			51.	Inflight Service	Text
			52.	Secure Flight	Text

# DAILY SCHEDULE CHANGES PROCESSED

- On average we process some 58,000 schedule changes a day.
- That's the equivalent to a schedule change every 1.5 seconds!
- Those changes can be a change of capacity, schedule, aircraft type, airport terminal, new and discontinued routes etc...



# OUR DATA AND AIR SERVICE DEVELOPMENT



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# WHY DO YOU NEED SCHEDULES DATA? WHY IS IT IMPORTANT IN ASD?



Frequencies change very quickly – an example:

- In twelve months there were 5 frequency changes and one new carrier on LAX – SFO
- Airlines drop and add frequencies in response to competitive activity
- Alternate services are always available for poorly performing services

When frequencies change scheduled departure times can change as well:

Airline	07-Jan	04-Feb	04-Mar	01-Apr	06-May	06-Jun	01-Jul	05-Aug	02-Sep	07-Oct	04-Nov	02-Dec
Alaska Airlines	10	10	10	10	10	10	10	10	10	10	11	10
American Airlines	12	12	12	12	12	12	8	8	8	8	9	8
Delta Air Lines	8	8	8	8	8	8	8	8	8	8	8	8
Southwest Airlines						7	7	7	6	6	6	6
United Airlines	12	12	12	12	12	12	12	12	12	12	11	12

# RAPIDLY CHANGING SCHEDULES

- We tracked scheduled departure times between LAX – SFO for Monday 2<sup>nd</sup> December 2019.
- Between the 1<sup>st</sup> April & 2<sup>nd</sup> September, 12 flights had schedule changes applied.
- Nearly 30% of flights saw a change of timing.
- And each change will have had ripple effect on connecting opportunities at each airport – directly affecting many other scheduled routes.

1st April For 2nd December Travel		2nd September For 2nd December Travel	
Carrier Name	Local Dep Time	Carrier Name	Local Dep Time
Alaska Airlines	630	Southwest Airlines	600
American Airlines	630	Alaska Airlines	630
United Airlines	630	United Airlines	630
Delta Air Lines	700	Delta Air Lines	700
American Airlines	800	United Airlines	800
United Airlines	800	American Airlines	821
Alaska Airlines	830	Southwest Airlines	825
Delta Air Lines	830	Alaska Airlines	830
Alaska Airlines	930	Delta Air Lines	830
American Airlines	930	Alaska Airlines	930
United Airlines	930	United Airlines	930
Delta Air Lines	1000	American Airlines	1000
United Airlines	1045	Delta Air Lines	1029
American Airlines	1100	Southwest Airlines	1030
Alaska Airlines	1130	United Airlines	1045
United Airlines	1215	Alaska Airlines	1130
American Airlines	1230	United Airlines	1215
Delta Air Lines	1245	Southwest Airlines	1225
Alaska Airlines	1330	American Airlines	1230
American Airlines	1400	Delta Air Lines	1259
United Airlines	1400	Alaska Airlines	1330
Delta Air Lines	1520	United Airlines	1400
Alaska Airlines	1530	American Airlines	1445
American Airlines	1530	Southwest Airlines	1450
United Airlines	1530	Delta Air Lines	1507
American Airlines	1700	United Airlines	1525
Delta Air Lines	1700	Alaska Airlines	1530
United Airlines	1700	Alaska Airlines	1630
Alaska Airlines	1730	Southwest Airlines	1645
Alaska Airlines	1830	American Airlines	1700
American Airlines	1830	United Airlines	1700
United Airlines	1830	Delta Air Lines	1725
Delta Air Lines	1900	Alaska Airlines	1730
United Airlines	1945	Alaska Airlines	1830
American Airlines	2000	United Airlines	1830
Alaska Airlines	2030	Delta Air Lines	1945
United Airlines	2045	United Airlines	1945
Delta Air Lines	2050	American Airlines	2000
American Airlines	2130	Alaska Airlines	2100
American Airlines	2245	United Airlines	2100
United Airlines	2245	Delta Air Lines	2120
Alaska Airlines	2300	American Airlines	2130
		United Airlines	2245
		American Airlines	2300



# SOME INTERESTING INSIGHTS

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Airlines file schedule changes in different ways

One major US carrier makes all their changes on a Saturday.....any guesses?

A major European airline makes numerous changes almost daily.....know who?

Chinese airlines tend to file domestic schedules with less than 90 days notice

Low Cost Carriers tend to make more destination changes than schedule changes

Legacy and particularly network carriers adjust schedules by minutes

US schedules work to the minute e.g. Depart 09:33

European schedules work to the “five or ten” e.g. Depart 09:35

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# CONSTANTLY CHANGING SCHEDULES MEANS..... CONSTANTLY CHANGING CONNECTIONS

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Airline Schedules are the data are how connections are built.

Many airports rely on connections to provide global access to their communities.

Most major hubs rely on connecting traffic to support their network

Local markets alone are frequently too small for the frequency offered.

A quick connection can make a service successful while a lengthy layover can kill a market flow

It is very important that both airports and airlines understand the impact that changes to connectivity can have on their business.



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# CONNECTING SCHEDULES ALL HAVE MINIMUM CONNECTING TIMES



Most major airports file their Minimum Connecting Times (MCT)

- Domestic to Domestic
- International to Domestic
- London Heathrow T3 to T5 etc

But airlines file their exceptions to the airport defaults and sometimes do not advise the airports concerned.

Regional airports in North America rely on connecting traffic and tight MCT's. If every route in the US saw subtle changes in connectivity like the LAX – SFO example the impact can be huge.





# MISSING A CONNECTION DUE TO SCHEDULING



Today this is scheduled to happen:

DL1068 will depart RSW at 10:47 arriving at gate at ATL at 12:30

Delta Air Lines publish a 35 minute connection for domestic to domestic flights in Atlanta

DL 1355 will depart ATL for DEN at 12:59, which is only 29 minutes after the RSW service arrived....6 minutes INSIDE the MCT...thus not a valid scheduled connection.

93,515 passengers travel from RSW to DEN each year but they all miss this possible connection

Other connections exist but are they a missed opportunity? How many more are there in the room?

Org Leg1	Car Leg1	FltNo Leg1	DeptTime Leg1	ArrTime Leg1	Gateway	Missed Connection Time	Circuitry	MCT Value	Des Leg2	Car Leg2	FltNo Leg2	DeptTime Leg2	ArrTime Leg2	O&D Market Size
RSW	DL	1068	10:47	12:30	ATL	-6	107	35	DEN	DL	1355	12:59	14:26	93,515



# HOW SCHEDULES IS ESSENTIAL TO TRAFFIC DATA....AND VICE VERSA

It's important to understand the traffic at your airport

But it's more important to understand the traffic at your competitors!

Traffic data, combined with Schedules data provides killer insights about your market.

The mix of traffic, seasonality, average yields, point of sale variances, direct and indirect volumes are all valuable insights.

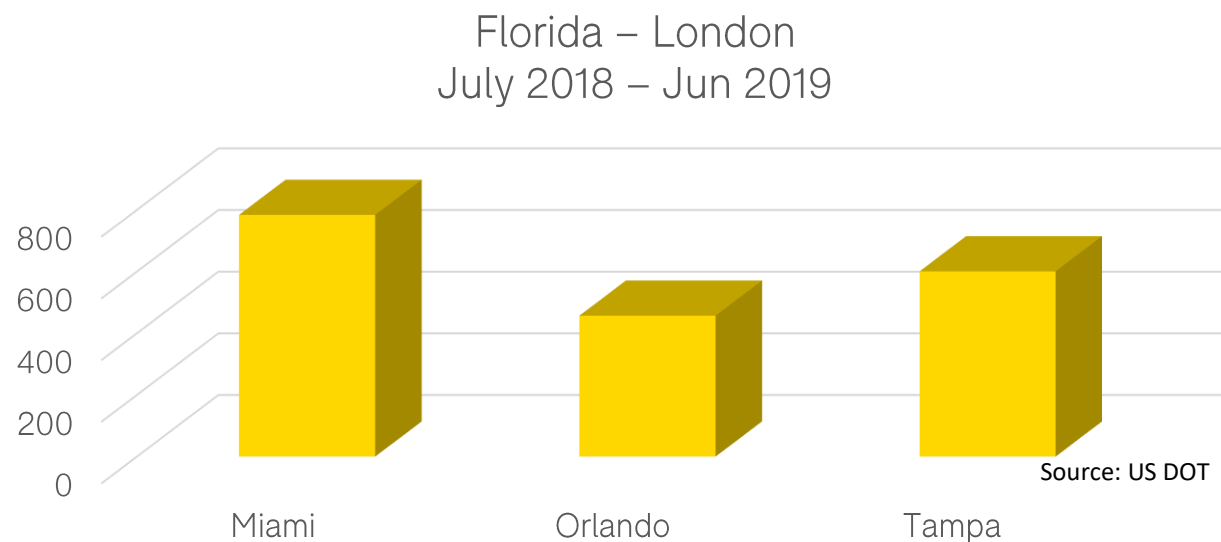
You can't build a successful business case without schedules, traffic, and connections data.



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# SO WHAT HAPPENED ON THOSE SCHEDULED FLIGHTS?

## FLORIDA – LONDON YIELDS



Orlando has the volume  
Orlando may have the volume but Miami has the yield advantage  
While Tampa offers a US\$100 premium over Orlando

Schedules, Connections, and Traffic data used effectively can create a case for each market!

# WHERE ARE THE FUTURE SCHEDULES GOING TO BE?

## UNSERVED & INDIRECT OPPORTUNITIES

Traffic data quickly identifies unserved and indirect flows...

This should be the list of new route targets, increased frequencies/capacity for any airport.

From: Washington IAD	
Destination city	Indirect Est. Pax
Saigon	29,466
Manila	26,232
Bangkok	24,104
Lagos	20,676
Mumbai	19,532
Chennai	16,462
Singapore	15,765
Kuwait	15,690
Taipei	15,450
Shanghai	14,824

From: Los Angeles LAX	
Destination city	Indirect Est. Pax
Saigon	123,464
Bangkok	122,182
Delhi	60,465
Yerevan	43,894
Mumbai	36,303
Tehran	36,125
Jakarta	35,005
Denpasar	34,774
Cairo	30,114
Phnom Penh	23,911



## TO SUMMARIZE

- Every commercial airport should have access to data
- Without data its impossible to create effective business cases
- But most importantly grab the data and grab those routes
- It is my pleasure to introduce Mike Mooney from Volaire Consulting that will now show you how to apply this powerful data

