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HIGH CLOUD AIRLINES

Airline Operations Analytics
Excel | Power BI | Tableau| SQL

PROBLEM STATEMENT

Airline leaders struggled to clearly see:

- *Load Factor performance*
- *Passenger demand patterns*
- *Route & regional efficiency*

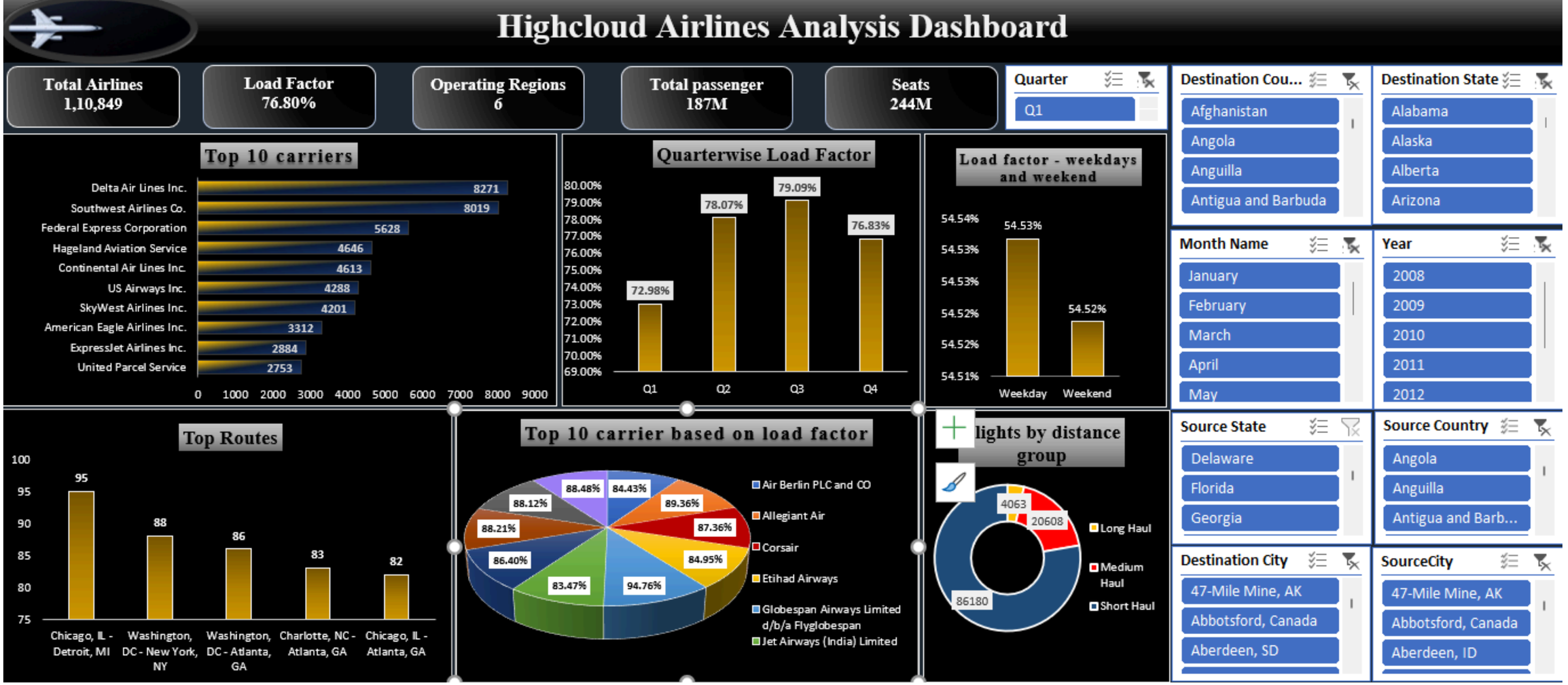
📌 *Data was available, but insights were missing.*

📌 **Why it matters: Poor visibility leads to inefficient routes, low seat utilization, and revenue loss.**

Data Preparation & Analysis

- *Reviewed and validated raw airline flight records*
- *Cleaned and structured data using Excel*
- *Standardized carrier, route, and airport fields*
- *Created pivot-based, KPI-ready datasets*
- *Prepared data for Power BI and Tableau dashboards*

Insight: Weekend flights show consistently higher load factors → opportunity for dynamic pricing.

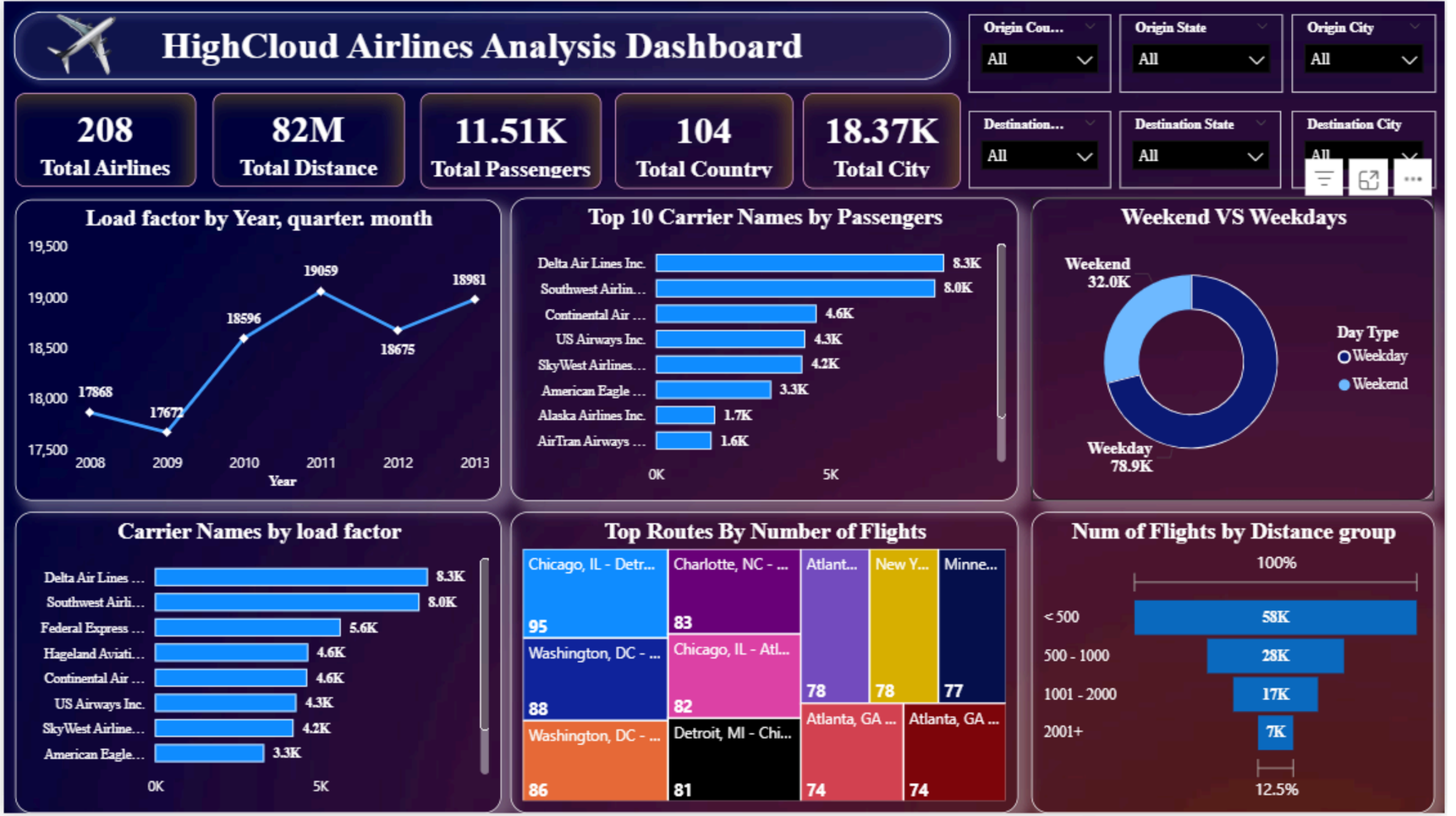


KPI ANALYSIS & INSIGHTS (EXCEL)

- *Analyzed top 10 carriers by passenger volume*
- *Evaluated quarter-wise load factor performance*
- *Compared weekday vs weekend load factors*
- *Identified high-traffic routes and distance-based trends*

📊 *Excel used for exploratory KPI analysis*

🔍 Key Insight: Load factor peaks in Q3, and weekends consistently outperform weekdays.



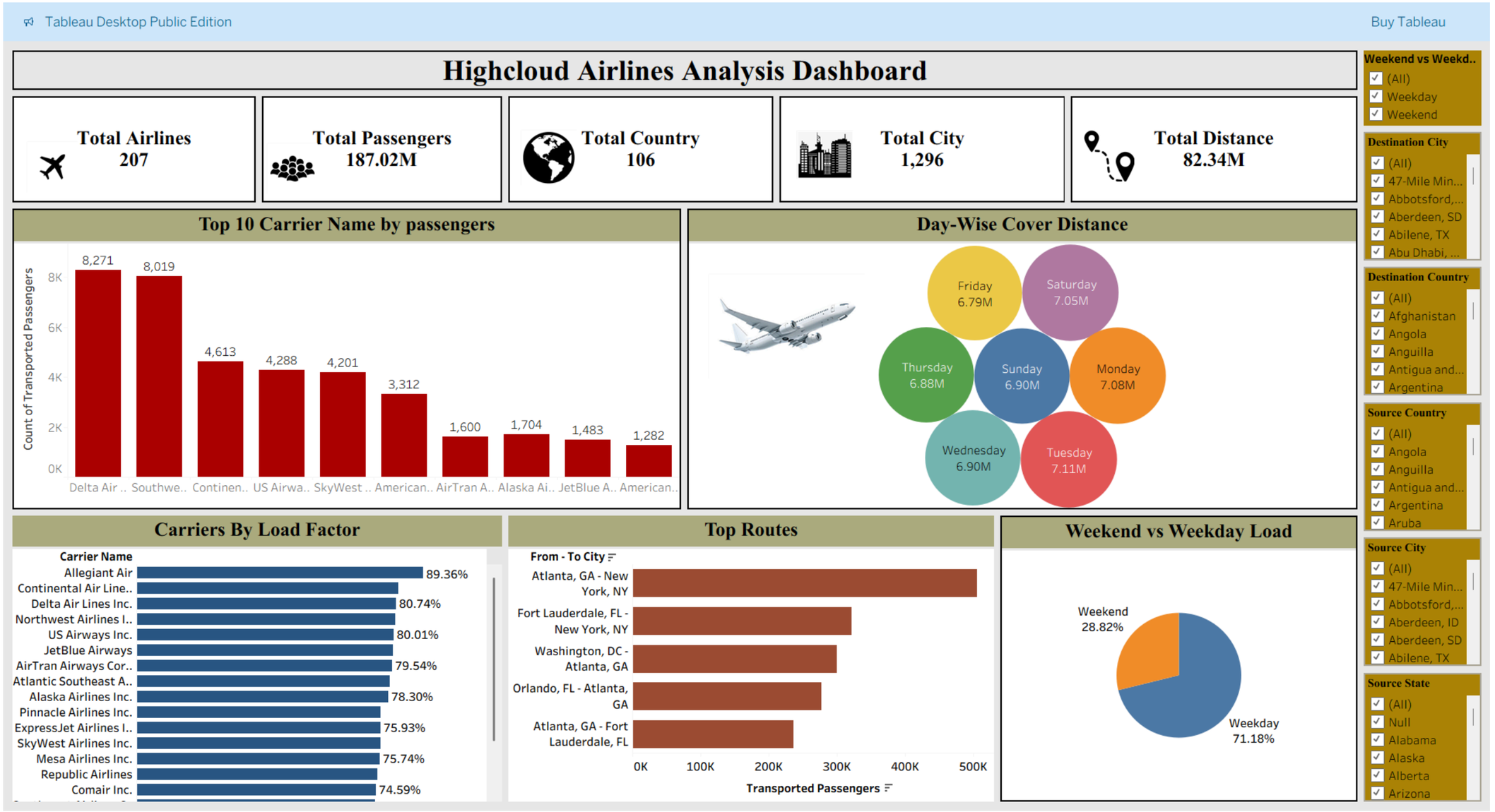
Business Value: Enables faster identification of high-performing routes and carriers.

INTERACTIVE DASHBOARD (POWER BI)

- *Built an executive-level interactive dashboard in Power BI*
- *Integrated cleaned Excel data into a semantic model*
- *Designed KPI cards for Load Factor, Passengers, Seats & Regions*
- *Enabled drill-down analysis using filters and slicers*
- *Delivered dynamic insights for faster business decisions*

Power BI used for scalable, interactive analytics

VISUAL STORYTELLING WITH TABLEAU



DATA ANALYSIS USING SQL

```sql
select weekday(flight_date),flight_date from airlines;

select sum(load_factor),weekday(flight_date) from airlines
group by 2;

select
case
 when weekday(flight_date)>4 then "weekend"
 else "weekday"
 end as day_type,
 sum(load_factor) from airlines
 group by 1;          #6#
```

```sql
select
case
 when distance<=500 then "short haul"
 when distance>500 and distance<=2000 then "medium haul"
 else "long haul"
 end as haul_type,
 count(flight) from airlines
 group by 1;        #7#

 desc airlines;
 select flight from airlines;
```

```sql
 from airlines;                    #1#

select flight_date from airlines;

select avg(load_factor), year(flight_date) from airlines
group by 2;

select avg(load_factor),quarter(flight_date) from airlines
group by 2;

select avg(load_factor), quarter(flight_date) from airlines
where year(flight_date)=2009
group by 2;

select avg(load_factor),year(flight_date),quarter(flight_date) from airlines
group by 2,3
order by 2,3;

select avg(load_factor), month(flight_date) from airlines
group by 2;              #2#
```

THANK YOU

Turning airline operations data into actionable business decisions.

Get In Touch

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