

AirMyTrip Case Study

About AirMyTrip

AirMyTrip is the e-travel company that provides air travel services in 12 major cities of India. The company has contracts with 10 aviation companies as given in Exhibit 3 and managed flight tickets for them. The company was founded in 2075 headquartered in Cyber Mumbai.

Case Problem

AirMyTrip wants to develop an interface for the customers which provides estimated average cost of economy and premium class along with the travel time for the origin and destination cities of all the carriers it owns. It will help customers to book their flights on multiple criterion such as total time of travel, cost of tickets, delay probability etc.

The flight ticket will be forecasted for year 2078 and onwards using the data of year 2077. You are free to take any assumptions for forecasting. You can take the inflation rate of 3-5% every year in the price of tickets.

Each company had four different types of aircraft, with different seating capacities as well as fuel costs. This is mentioned in Exhibit 2.

The Carriers each have their own share of Fixed costs, which are broken down into different heads as shown in Exhibit 3.

The company is facing challenges in managing routes for different carriers and companies due to which company is incurring losses in some routes by running larger carriers and unable to fulfil customer requirements by running smaller carriers in some routes.

Objective

You are hired as a data analyst by the company to help them in solving above problems.

- You need to develop an efficient dashboard for customers which will provide all the information of the flight company, carrier, expected price, delay time(if any), cancellation probability on origin and destination cities on a particular date.
- You need to calculate the Profitability of each Carrier. Also, find the top 10 Routes in terms of profitability. Give recommendations to increase profitability.

Exhibits

Figure 1: Exhibit 1

Takeoff Date	Takeoff Time	Average Ticket Price (Economy Class)	Average Ticket Price (Premium Class)	Cancelled	Carrier	Origin	Origin Weather	Distance (Miles)	Flight Delay	Flight Delay (Min)	Flight Number	Destination	Destination Weather	Total Flight Time (mins)	Plane Type	Occupancy Rate
28-11-2077	16:37:01	8855	39160	FALSE	ALPHABET	Kolkata	Heavy Rain	559	FALSE	0	AL-9002	Shillong	Clear	56	SN490	0.84
23-11-2077	17:47:54	2608	24601	FALSE	ALPHABET	Udaipur	Clear	1090	FALSE	0	AL-7396	Trichy	Foggy	139	A948	0.89
05-06-2077	08:36:29	10248	46949	FALSE	BANANA	Ahmedabad	Overcast	959	FALSE	0	BA-3941	Bengaluru	Clear	120	A948	0.89
27-04-2077	14:27:27	9086	34351	FALSE	AIRAMAZON	Shillong	Overcast	708	FALSE	0	AI-9119	Bengaluru	Cloudy	63	SN490	0.95
01-08-2077	05:17:36	21209	32490	FALSE	VIP	Lucknow	Cloudy	1959	FALSE	0	VI-5208	Trichy	Clear	220	A960	0.93
23-11-2077	23:24:55	14370	38490	FALSE	SPACEAXE	Shillong	Clear	683	FALSE	0	SP-5734	Kozhikode	Clear	63	A948	0.95
21-10-2077	18:48:09	14562	22139	FALSE	ALPHABET	Ranchi	Clear	558	FALSE	0	AL-3657	Udaipur	Clear	81	A960	0.78
05-01-2077	22:49:05	7645	33702	FALSE	VIP	Ranchi	Cloudy	1704	FALSE	0	VI-1114	Kashipur	Cloudy	205	A960	0.91
03-09-2077	23:44:31	7769	22328	TRUE	SEON	Raipur	Cloudy	1467	NA	0	SE-5260	Kashipur	Rainy	NA	A948	0.77

1. **Take-off Date** – Date at which the flight took off/was supposed to take off.
2. **Take-off Time** – Time at which the flight took off/was supposed to take off.
3. **Average Ticket Price (Economy Class)** – The Simple average of the prices of all tickets sold for the Economy Class in the Flight.
4. **Average Ticket Price (Premium Class)** – The Simple average of the prices of all tickets sold for the Premium Class in the Flight.
5. **Cancelled** – A Binary whether the flight took off or got cancelled.
6. **Carrier** – The Carrier operating the Flight
7. **Origin** – The Origin city from which the flight took off or was supposed to do so.
8. **Origin Weather** – Weather at the Origin Airport
9. **Distance (Miles)** – The distance travelled by the Flight between Origin and Destination in Miles
10. **Flight Delay** – Whether the Flight was delayed
11. **Flight Delay (Mins)** – If there was a delay, by how much
12. **Flight Number** – The Flight Number as assigned by the Carrier
13. **Destination** – The Destination City where the Flight landed or was supposed to land at
14. **Destination Weather** - Weather at the Destination Airport
15. **Total Flight Time (Mins)** – If the Flight took off, how long was the duration of Flight.
16. **Plane Type** – The Model of the Plane in which the Flight occurred
17. **Occupancy Rate** – The Fraction of Seats that were occupied e.g. 0.95 means 95%(rounded down) of the seats were filled.

Table 1: Exhibit 2

Plane	Seats	Economy	Premium	Fuel Rate (take off, kgs)	Fuel Rate (Flight, kg/km)
A948	600	480	120	180	10.8
A960	400	320	80	135	8.6
SN490	250	200	50	128	4.9
B666	480	384	96	145	8.1

Figure 2: Exhibit 3

CARRIERS/ FIXED COSTS	Administration Cost	MRO COSTS	Licensing Cost	Operations Cost	Airport Costs
PEACOCK	48 Millions	14 Millions	1 Millions	86 Millions	42 Millions
STELLARCRAFT	45 Millions	13 Millions	4 Millions	99 Millions	66 Millions
BIGFALCON	48 Millions	11 Millions	1 Millions	95 Millions	41 Millions
SPACEAXE	49 Millions	15 Millions	3 Millions	99 Millions	51 Millions
AIRAMAZON	41 Millions	7 Millions	2 Millions	87 Millions	37 Millions
SEON	34 Millions	14 Millions	3 Millions	96 Millions	36 Millions
ARCHIPELAGO	31 Millions	9 Millions	2 Millions	87 Millions	49 Millions
ALPHABET	42 Millions	9 Millions	3 Millions	98 Millions	50 Millions
BANANA	28 Millions	5 Millions	4 Millions	96 Millions	67 Millions
VIP	48 Millions	15 Millions	3 Millions	90 Millions	63 Millions

Appendix

Indicative Dashboard (This is a very simple Dashboard to get the creative ball rolling)

INPUT			
ORIGIN	DESTINATION	DATE OF TRAVEL	CLASS
Ahmedabad	Lucknow	23-08-2078	Premiun
(drop down menus)			

OUTPUT				
CARRIER	EXPECTED PRICE	FLIGHT CANCELLATION CHANCES	EXPECTED FLIGHT DELAY (MINS)	FLIGHT DURATION (MINS)
PEACOCK	43958	3.00%	0	150
PEACOCK	40779	5.00%	10	124
PEACOCK	44620	3.00%	14	254
BIGFALCON	47321	4.00%	8	84
BIGFALCON	47497	5.00%	48	145
AIRAMAZON	33383	5.00%	65	196
AIRAMAZON	43531	2.00%	0	144
AIRAMAZON	37704	2.00%	15	111
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

Rules & Guidelines

- Naming Convention – TeamName_CollegeName (e.g. ABC_IIMShillong)
- Submission Type - Excel file (Multiple Sheets for the Different Questions)
- Submission Window: 10 Feb'21 09:00 PM IST to 20 Feb'21 11:59 PM IST
- Only team leader/registered participants will be able to make the submissions.
- In the case of file submissions, please ensure that the file size is less than 20 MB.
- You can change your submissions by clicking on Submission and then Change Submission, any time before the submission deadline.
- Please make all your submissions well before the submission deadline to avoid any last-minute hassles.

IIM
SHILLONG