**CASE STUDY**

**Technology**: Power BI

**In Heathrow**:

Heathrow airport is an international airport in London. It is the second busiest international airport in the world after Dubai international airport. And, also the seventh-largest in terms of total passenger traffic.

**The challenge**:

Being the world’s seventh busiest airport in overall passenger traffic, one can only imagine the level of efficiency and efforts expected from the airport’s ground management to keep the airport functioning properly. Managing over 2,00,000 passengers every day can be quite a challenging task for airport authorities and ground staff. Every department needs to be in absolute coordination and sync to be able to manage the passenger traffic and give them a smooth experience at the airport. At such busy airports, every day brings new challenges and uncertainties with it. Unexpected disruptions in the smooth workflow of operations at the airport disturb the entire functioning. Issues can arise due to stormy weather, delayed flights, canceled flights, shifts in jet streams, etc. disturbing the airport’s smooth functioning. Such problems send the passengers as well as airport employees into turmoil.

The airport needed a central digitalized management system as a solution to this problem. Such a system would use the large amounts of data being produced by operational systems at the airport and transform it into useful visual insights. The interpretations produced by the BI tool can be used by airport staff for better functioning and passenger management.

**The change:**

Heathrow group went with Microsoft Power BI as their business intelligence software and Microsoft Azure for cloud services. The airport has deployed Microsoft Azure technology to collect data from back-end operational systems at the airport. These systems are check-in counters, baggage tracking systems, flight schedules, weather tracking systems, cargo tracking and many more.

The operational data from these systems are forwarded to business intelligence platforms like Power BI. In Power BI, users shape this data into useful information that the airport staff can use.

Power BI transforms the crude information into informative visuals showing different statuses and statistics of the airport systems. Then, the ground staff like baggage handlers, gate agents, air traffic controllers, etc. use this information to properly operate and manage passengers.

Services such as Azure Stream Analytics, Azure Data Lake Analytics, and Azure SQL Database are used to extract, clean and prepare operational data in real-time. This data is about flight movements, security queues, passenger transfers, and immigration queues. Ultimately, Power BI uses data from these Azure services for analysis and interpretation.

Operational data from different data sources come into Power BI. Then Power BI tools are used to transform that data into meaningful insights with the help of visual reports, graphics, and dashboards. About 75,000 airport employees have information on their fingertips by the virtue of Power BI.

Let us understand this with the help of a real-world example. If there is a change in the jet stream, it may delay about 20 flights in a day. This will result in about 6,000 passengers waiting at the airport at a given point of time. It will increase passenger traffic and density at the airport. Power BI works like the centralized information system. The airport uses it to inform about the sudden passenger influx. This information goes out to different sections such as food outlets, immigration, customs, gate attenders, baggage handlers at the airport. This will give them time to prepare themselves to attend the passengers.

With the presence of smart BI solutions like Power BI, airport staff is notified in advance about the probable delays and the sudden rush of passengers at the airport. This help management groups and other employees to take suitable actions in advance like increasing the food stock, adding extra passenger buses, increasing the ground staff, directing the passengers to the waiting area, etc. to avoid any last-minute hustle.

Thus, with the help of a powerful BI tool like Power BI, Heathrow has been benefited in more than one way. They are extremely happy and satisfied with the capabilities of Power BI helping them give a hassle-free airport experience to their passengers. Heathrow also is extending Power BI applications by trying to anticipate passenger flow at the airport to avoid any unexpected disruptions for the passengers.