**Executive Summary**

**Background:** Orlando International Airport, dubbed the Nation’s “Second Worst Airport,” is notorious for its delays. This analysis aims to uncover the underlying causes of these delays and assess the airport’s capacity to enhance its operational efficiency.

**Key Takeaways:**

1. *Carrier delays are the main drivers and can be mitigated by collaborating with airlines.*
2. *Anticipate and allocate resources surrounding peak travel times to minimize delays.*
3. *Approximately 36% of flights are diverted, while we speculate that weather-related issues may be the cause. More information is needed to confirm this.*
4. *Bottlenecks and congestion can be influenced by ground operations, which can be managed by improving processes and operations management.*

**Extremely High Delay Times:**On any given day, departing customers can expect to experience delays of 52.32 minutes, exceeding the national average of 48.92 minutes. Since most factors impacting arrival are outside our immediate control, we should focus on enhancing departure operations to improve customer satisfaction and operational efficiency.

**Weather Delays: Hurricane and Storm Hotspot:**In Florida, July and August mark the onset of the hurricane season. During this time, approximately 0.3% of flights experience diversions, primarily occurring between June and August. Although cancellations represent only 2.53% of flights, many are due to weather issues. Finally, Florida is a hotspot for weather challenges, but carrier delays are the primary driver of total delays.

**Carrier Delays Dominate at MCO: Main Driver of Departure and Arrival Delays:**At MCO, Carrier Delays account for 62% of all Arrival Delays and 61% of all Departure Delays. Therefore, it is imperative to investigate the factors behind these delays and collaborate with airlines to enhance operational efficiency, particularly Delta, Alaska, and Republic, which have higher carrier delays than other airlines.

**Cancellation and diverted flights**: Across our dataset**,**35.56% of flights experienced delays, 2.53% were cancelled, 0.30% were diverted, and the remaining 61.61% operated on time.The most frequently cancelled routes were concentrated around the New York Area, likely due to its high traffic volume. Additionally, flights originating and departing from the East Coast may face route disruptions during severe weather conditions experienced by MCO.

The main driver of cancelled flights is weather issues, particularly from September to November. Similarly, diverted flights peaked from June to July, likely influenced by weather systems.

**Recommendation**

We recommend enhancing ground and air operations, improving weather forecasting accuracy, and adjusting operations during peak periods such as hurricane season and holidays to mitigate flight delays. Additionally, increasing staff and equipment reliability during these times and improving communication with airline carriers will help streamline processes.