

## Project Design Phase-I - Solution Fit

**Template Project Title:** Developing a flight delay model using Machine Learning

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Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> <b>CS</b> <ul style="list-style-type: none"><li>- Normal flight users</li><li>- Business professionals having meetings</li><li>- People boarding a lay-over flight</li><li>- Logistics incharge at airport</li><li>Airport catering manager</li></ul>	<b>6. CUSTOMER CONSTRAINTS</b> <b>CC</b> <ul style="list-style-type: none"><li>- Refund/Partial Refund</li><li>- Not knowing the exact time of delay</li><li>- Unavailability of alternate flights or accommodation</li></ul>	<b>5. AVAILABLE SOLUTIONS</b> <b>AS</b> <ul style="list-style-type: none"><li>- May take alternate flights</li><li>- Ask for an alternate flight/schedule</li><li>- Wait for the delayed schedule</li><li>- Enjoy airline benefits</li><li>- Report airline</li><li>- Cancel the flight</li><li>- Search for specific reasons for delay</li></ul>	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> <b>J&amp;P</b> <ul style="list-style-type: none"><li>- To know if a flight is delayed</li><li>- To make alternate arrangements to reach the destination in case the flight is delayed</li><li>- To know other things that can be done when the flight is delayed</li></ul>	<b>9. PROBLEM ROOT CAUSE</b> <b>RC</b> <ul style="list-style-type: none"><li>- Unavailability of means to estimate delays occurring in airplanes</li><li>- Large scale economic loss for both airlines and the customers</li><li>- Degradation in airline's reputation when many flights are delayed</li></ul>	<b>7. BEHAVIOUR</b> <b>BE</b> <ul style="list-style-type: none"><li>- Use the app deployed to know the approximate delay</li><li>- Find alternate travel options</li><li>- Find hotel accommodations for overnight delays</li><li>- Fill ratings and feedbacks to help other users</li></ul>	
	Focus on J&P, tap into BE, understand RC			

Identify strong TR & EM	<p><b>3. TRIGGERS</b></p> <p><b>TR</b></p> <ul style="list-style-type: none"> <li>- Cancellation of flights</li> <li>- Extreme boredom</li> <li>- Guilt of wasting time</li> <li>- Thought of missing important meetings</li> <li>- Missing layover flight</li> <li>- Uncertainty in deciding if the flight is delayed when they start late for the airport</li> </ul>	<p><b>10. YOUR SOLUTION</b></p> <p><b>SL</b></p> <ul style="list-style-type: none"> <li>- The aim is to develop an application that predicts flight delays using a supervised machine learning model (a decision tree classifier) with the data of flights and delays so far and estimate the time of delay taking spatial dependencies of flights into account.</li> </ul>	<p><b>8. CHANNELS of BEHAVIOUR</b></p> <p><b>CH</b></p> <p><b>8.1 ONLINE</b></p> <ul style="list-style-type: none"> <li>- Check if a particular flight will be delayed and the estimated time of arrival</li> <li>- Giving ratings and feedbacks for various flights so as to improve the app's performance in predicting further delays</li> <li>- Check for other specific reasons for delay</li> </ul>	Identify strong TR & EM
	<p><b>4. EMOTIONS: BEFORE / AFTER</b></p> <p><b>EM</b></p> <p>Before:</p> <ul style="list-style-type: none"> <li>- Worried             <ul style="list-style-type: none"> <li>- About missing important events</li> <li>- About missing layover flights</li> <li>- If the flight is gonna be canceled</li> </ul> </li> <li>- Frustrated             <ul style="list-style-type: none"> <li>- About the unexpected delay/cancellation</li> <li>- Not knowing the news of delay beforehand</li> <li>- About the weather</li> </ul> </li> <li>- Bored             <ul style="list-style-type: none"> <li>- Don't know how to make use of time</li> </ul> </li> </ul> <p>After:</p> <ul style="list-style-type: none"> <li>- Gets to enjoy the airline benefits</li> <li>- Stay relaxed after getting a proper update from the airline</li> <li>- Relieved if an alternate solution can be found</li> </ul>		<p><b>8.2 OFFLINE</b></p> <ul style="list-style-type: none"> <li>- Finding alternate travel routes in the airport</li> <li>- Hotels near the airport can be visit for overnight stays during delays</li> </ul>	