**Project Title: Crude Oil Price Prediction                      Project Design Phase-I** - **Solution Fit                                 Team ID: PNT2022TMID01583**

**Project design Phase – I**

**Solution Fit**

| **Define CS, Fit into CC** | **1.CUSTOMER SEGMENTS CS**  **Who is your customer?**  Various stakeholders like governments, public and private enterprises, policymakers, and investors are our customers | **6. CUSTOMER CONSTRAINTS CC**  **What are the pros/cons of existing solutions?**  **Pros:**  It can assist in minimising the risks associated with volatility in oil prices.  **Cons**:  There may be some fluctuations in results. And there are some lags in the result. | 1. **AVAILABLE SOLUTIONS AS**   **Which solutions are available to the customers?**  Using LSTM algorithm, customer can achieve better accuracy compared to previous models | **Explore AS, Differentiate** |
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| **Define CS, Fit into CC** | **2. JOBS TO BE DONE /PROBLEMS J&S**  **Which problem do you solve for your customer? How often does this problem occur?**  Customer experiences with some lags during this process and they frequently experience variations in their results. | **9. PROBLEM ROOT CAUSE RC**  Delay effects due to the unstable patterns are the root cause of the variations and lags caused. | 1. **BEHAVIOUR BE**   **How often does this related behavior happen?**  It happens whenever there is a drastic variation in the price range | **Focus on J&P, tap into BE, Understand RC** |
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| **Identify strong TR & EM** | **3. TRIGGERS TR**  What triggers customers to act?  Variations in the result triggers the customer to act. | **10. YOUR SOLUTION SL**  We have used the LSTM network to approach this problem. The LSTM network overcomes two major issues which are encountered in RNN. The two issues are vanishing gradients and exploding gradients. The key to the solution of these problems was the internal structure that has been used in LSTM. The simple architecture of LSTM networks is called as vanilla LSTM which performs very well in all sequence related prediction problems. | **CHANNELS of BEHAVIOUR CH**  It can be worked only in online |  |
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| **4. EMOTIONS: BEFORE / AFTER EM**  Before : Customers have felt insecure the results provided by previous models  After: Customers experience getting more accurate results and they can easily predict the price at earliest. |