# Problem-Solution fit canvas 2.0

Purpose / Vision: Crude Oil Price Prediction

Define CS, fit into CC

## 1. CUSTOMER SEGMENT(S) — CS

Who is your customer?
i.e. working parents of 0-5 y.o. kids

Our Target Customers are:
- ➔ Private Organizations
- ➔ Public Organizations
- ➔ Government Enterprises

Who, wants to understand the oscillations in Crude Oil Prices and gain both tangible and intangible benefits out of it.

## 6. CUSTOMER CONSTRAINTS — CC

What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices.

There are several constraints that are encountered. Some of them are:
- ➔ Extreme Disparity in prediction
- ➔ Fluctuating Prices
- ➔ Shortage of Availability

## 5. AVAILABLE SOLUTIONS — AS

Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking

There are several techniques that have been tried are:
- ➔ GRNN
- ➔ LSTM
- ➔ Elman Neural Networks

Pros: High Accuracy for Short-Term Predictions
Cons: Long-Term Predictions cannot be made.

Explore AS, differentiate

Focus on J&P, tap into BE, understand RC

## 2. JOBS-TO-BE-DONE / PROBLEMS — J&P

Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.

As far as the existing solutions are concerned, it is very much evident that they are not accurate enough for long-term prediction.

Our solution does not concentrate only on short-term predictions but also strives to provide a realistic view and prediction of the Crude Oil prices in the distant future.

## 9. PROBLEM ROOT CAUSE — RC

What is the real reason that this problem exists?
What is the back story behind the need to do this job?
i.e. customers have to do it because of the change in regulations.

- ➔ Crude oil is one of the most important commodities in the world, accounting for one-third of global energy consumption.
- ➔ It is a starting material for most of the products that we use in everyday life.
- ➔ Crude oil price fluctuations have a great impact on global economies and thus forecasting can assist in minimising the risks associated with volatility in oil prices.

## 7. BEHAVIOUR — BE

What does your customer do to address the problem and get the job done?
i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace)

The behaviour of the customer is assumed as follows:
- ➔ The provision to select a date is given and if a date is selected, the price can be viewed on that selected date.
- ➔ There is also a provision in which the price fluctuations can be observed for a range of dates, with the percentage of increase and decrease.

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

## 3. TRIGGERS — TR

What triggers customers to act? i.e. seeing their neighbor installing solar panels, reading about a more efficient solution in the news.

Since the customers are spread out across, and are interlinked, seeing the benefits that one yields using our solutions that others are automatically attracted to use our solutions.

## 4. EMOTIONS: BEFORE / AFTER — EM

How do customers feel when they face a problem or a job and afterwards?
i.e. lost, insecure > confident, in control - use it in your communication strategy & design.

BEFORE: Lack of Knowledge
AFTER: Sufficient Knowledge to exploit the price fluctuations.

## 10. YOUR SOLUTION — SL

If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality.
If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviors.

We are working on building Machine Learning Models based on ARIMA, LSTM and Exponential Smoothing, and simultaneously working on the pre-processing techniques for achieving better accuracy.

The best out of these models will be picked and would be proposed as the final solution.

## 8. CHANNELS of BEHAVIOUR — CH

### 8.1 ONLINE

What kind of actions do customers take online? Extract online channels from #7

There is a separate forums for handling queries and addressing the grievances of the customers, which is available 24 x 7.

### 8.2 OFFLINE

What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development.

There is a little to no, offline interaction and support provided to the customers.

Extract online & offline CH of BE


Created by Daria Nepriakhina / Amaltama.com

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