# logo and globo

# Expression of Interest

## Team Information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***No.*** | ***Student Name*** | ***PGID*** | ***Mobile No.*** | ***CBA Email ID*** |
| 1 | Balaji Venkatesh | 11910041 | 9884294829 | balaji\_venktesh\_2019@cba.isb.edu |
| 2 | Gireesh Sundaram | 11910063 | 9003063767 | gireesh\_sundaram\_2019@cba.isb.edu |
| 3 | Soumya Prasad Panigrahi | 11910088 | 9042406381 | soumya\_panigrahi\_2019@cba.isb.edu |
| 4 | Vineet Kapoor | 11910076 | 8860785265 | vineet\_kapoor\_2019@cba.isb.edu |

## Project being applied for

|  |  |  |
| --- | --- | --- |
| **Project No.** | **Client Name** | **Title of the Project** |
| NA | Course5 Intelligence | Design a framework and an approach note for creating actionable insights using competitive data (online) of products, pricing and promotions, for a brand. |

## 1. Problem/ sub-problem as the team have understood.

**Primary Models:**

* Build a model to help the marketing, product and analytics team understand and infer actionable insights that can be used to make the pricing of the product more competitive.
* To find the casual relationship and interaction between the variables and present them in a understandable manner to the marketing, product and analytics team.
* To develop a comprehensive marketing technique using supervised and unsupervised machine learning algorithims that will work on the live market data to provide realtime support to business decisions.

**Metrics Evaluation Model:**

* A metrics evaluation model has to be developed to identify the key outcome due to the insights that is provided by the primary model. The output of the evaluation metrics model is fed to reinforcement module which will fine tune the models based on success or failure in the evaluation.

**Reinforcement Learning:**

* An application layer is also need to be provided where the model can learn from the previous outcomes and modify accordingly
* Reinforcement algorithms to fine tune the data model using past data

## Approach:

**Business Understanding:**

* We will work with the stakeholders to understand in detail the current rating methodology, and identify additional insights that we can consider/incorporate while working on our model
* To understand the current technology infrastructure so as to make sure that the end product gets integrated in the current architecture

**Data Understanding:**

* As we will get three types of data which are: pricing, promotion and product data, we will work on explanatory data analysis to find any time series pattern such as trend, seasonality and level of the data. Further we will explore the data using the demographies and the product segment to find how each product is affected by pricing and promotion.
* Further products can be sub-divided into elastic products for which the price can be changed and non-elastic products for which the price is fixed as constant. This can be a crutial part to the pricing and promotion strategies.

**Data Preparation:**

* We will work to see if there are any missing values in the data, and if any are there, we will further work on appropriate techniques to impute the missing data values.

**Modeling:**

* Run statistical analysis on the data to determine the key attributes impacting the pricing and promotion and to what extent.
* Check if the periodic variation of pricing is statistically associated with the promotional events
* Predictive machine learning models to find the correct pricing of the product based on the promotion at a granular level (at demographic level or at product level)
* The model will accommodate feedback from the current model as a part of reinforcement learning for constant fine tuning of the model

**Evaluation:**

* To ensure built model does not lead to overfitting, we will randomly sample three subsets of data: Training, Validation and test set.
* We will work with stakeholders to evaluate the model evaluation metrics to ensure the built model is acceptable and usable.

**Deployment:**

* We will work with internal stakeholders to provide recommendations on model deployment on internal data platforms

## 3. Why is your team the best suited to take up this project? (your competencies as a team, interests and prior experience if any)

Our team comprises of four people with two of the team members working for Cognizant, and three of the team members are located in Chennai which makes it easier to collobrate for this project.

Together as a team we are keen to work on growing technologies and bring a strong mixture of experience in analytical domain along with statistical and programming expertise with a combined experience of over 20 years.

Members in our team complement each other in terms of industry knowledge and skill set – we have good industry knowledge to take up this project and have working knowledge of different tools and techniques. In addition, we also bring a sound knowledge of statistics and machine learning algorithms, with almost all of us working in similar domain.

**Team Details:**

|  |  |
| --- | --- |
|  | **Balaji Venktesh** (currently Senior Associate at Cognizant) has over 9 years of experience in Data analytics and is highly experienced in handling a team, clearly identifying and defining problem statement and taking solution approach to the problem. |
|  | **Gireesh Sundaram** (currently Associate) has 5.5 years of experience working on Statistical Analysis and BI reporting tools using SAS and various other software packages, and approaches any problem with analytical mindset. |
|  | **Soumya Prasad** (Data Scientist at DMI Innovations) has 5 years of experience with a blend of Business Intelligence and Data Science. He has hands on experience on several machine learning applications across highly diversified domains. |
|  | **Vineet Kapoor** (Data Engineer at Genpact) has almost 3.5 years of experience in Data analytics, Data integration, python programming. His expertise lies in R&D and has worked in analytics/research related assignments for various clients like mass media and information firm of Canada, US financial services units. He has developed Data pipeline for financial data for media and information firm, to help the SFDC, ML and AI teams. He has exposure to various tools like python, Tableau(Desktop and Server), Salesforce , Excel, Oracle SQL, APIs. |