**PROPOSAL REPORT FOR**

Enterprise Artificial Intelligence

Project: Predicting churn

**Title of the Project:** The title of the project is “Enterprise Artificial Intelligence Project: Predicting churn for Hackveda, VMDD Technologies using Python, Php MySQL and Anaconda navigator”.

**Organization:**

The name of the organization where the project is intended is Hackveda, VMDD Technologies. Hackveda, VMDD Technologies is an ISO 9001:2008, approved organization for Software Development. VMDD Technologies was established in 2008 by Mr. V.K.Shukla, RETD. Indian Air Force Officer. During this period VMDD Technologies has successfully delivered product and services to Defense Research Development Organization, Ministry Of Defense (India), Indian Institute of Technology, National Physical Laboratory and various other Govt. and private organization.

VMDD Technologies is providing software product & services since 2011. VMDD started its cyber security & Training Service in 2011. Later Hackveda, VMDD Technologies Introduced android application development & training Services, commercial android applications development etc. Hackveda is also a Creative Learning, Certification, Development, Publishing and Research Center.

**Problem Definition:**

In this era of technologies, the telecom industry continues to face growing pricing pressure worldwide. While regional difference apply, wireless penetration is reaching a saturation point across multiple markets. In addition, the longstanding ability to differentiate products and services based on handset selection and network quality is disappearing, and product lifecycles are shortening. Simultaneously, wireline businesses are facing increasing competition from cable operators and a rising risk of [disruption from OTT players](https://www.mckinsey.com/industries/telecommunications/our-insights/overwhelming-ott-telcos-growth-strategy-in-a-digital-world). All of these powerful trends are forcing telecom companies to respond through more competitive offers, bundles, and price cuts.

Given these challenging industry dynamics, managing the customer base to reduce churn should be among any senior telecom executive’s highest priorities.

**REQUIREMENTS OF NEW SYSTEM**

The problems of the Churn in telecom industry required to develop a comprehensive view of the customer and link that view directly to results. Leading operators are structured and thorough in linking and aggregating disparate data sets to develop a full view of the customer [over the entire decision journey](https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-new-consumer-decision-journey)—from acquisition and onboarding to upgrade cycles and eventual disconnect, if applicable.

Use cutting-edge analytical techniques. Cutting-edge analytics let operators apply advanced algorithms to vast troves of data without needing to program specific transformations.

These algorithms can identify previously hidden variables and combinations of variables that predict customer behaviors such as churn. Companies can then analyze the reasons behind those behaviors to come up with solutions. Break the customer base into scores of microsegments. The full value of data analytics can only be realized when companies can [personalize the treatment of a precisely targeted group of customers](https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-heartbeat-of-modern-marketing) with the highest propensity to leave. Such a tailored approach requires a granular micro-segmentation of the customer base which is then matched to a broad, well-classified library of offers.

**Objective of the project:**

This project will help us to lean how to combine several models to build a churn prevention pipeline: segment customers, create insights to understand churn, and build a model to score new customers.

The data is from a major telecom operator. Just like pretty much any company in the world, they’re concerned with keeping our customers happy, so they won’t leave. In other words, they’re looking at ways to reduce churn. To do this, they set up a task force of data analysis and people from business teams who came up with several business goals to reduce churn.

* Get to know customer better, by accessing the data about their plans and usage, and getting in touch with interesting profiles
* Target clients with more effective advertising based on their usage profiles
* Retrieve customers with very high likeliness of churn so we could get in touch and offer them special deals before they even thought of leaving

**Methodology**:

We will be working on historic data from users on their phone usage, as well as various features from very large log files. The clients who have churned are indicated in the dataset.

We have another dataset with the same features built on current clients. That will be used to deploy the model and predict who is likely to churn.

Instead of just answering the yes, no question: “will they churn,” we have decided to build two models instead of one:

1. A **first model that segments customers** into relevant groups (by using Clustering algorithms), for targeting.
2. A **second model that uses these segments (clusters) to predict the churn likeliness** of each unlabeled customer (by using classification algorithms), so that business units can then check scores on a daily basis and target these customers.

**Tools:**

The Hardware and Software Requirement Specifications:-

|  |  |
| --- | --- |
| Minimum Requirements | |
| Computer (CPU) | Intel i3 or Higher |
| Memory | 4GB |
| Hard Disk | 10 GB |
| Display | 1366 768 |
| Input Device | Keyboard , Mouse |
| Internet connectivity | Ethernet or Wi-fi |
| Web Browser | Google Chrome or Microsoft Edge |

**Table No-1: Hardware Requirements**

|  |  |
| --- | --- |
| Minimum Requirements | |
| Front End | Python |
| Back End | Php MySQL |
| Operating System | Windows 8.1 |
| Development Tool | Anaconda navigator (IDE) |

**Table No-2: Software Requirements**