Predicting Customer Churn in a Telecommunications Company

Background: Operators are losing share in today's competitive market

Industry and external outlook

- **Tougher Telecom Environment**
  - Economic instability and uncertainty
  - Mobile Market is saturated and dominated by a few players
  - Intense competition leading to price wars
- **Smarter & More Demanding Customers**
  - Escalating personal and business reliance on telecommunications
  - Technology explosion
  - More demanding, less loyal customers
  - Comparison shoppers

Optimizing Retention continues to be vital for Telecom Operators

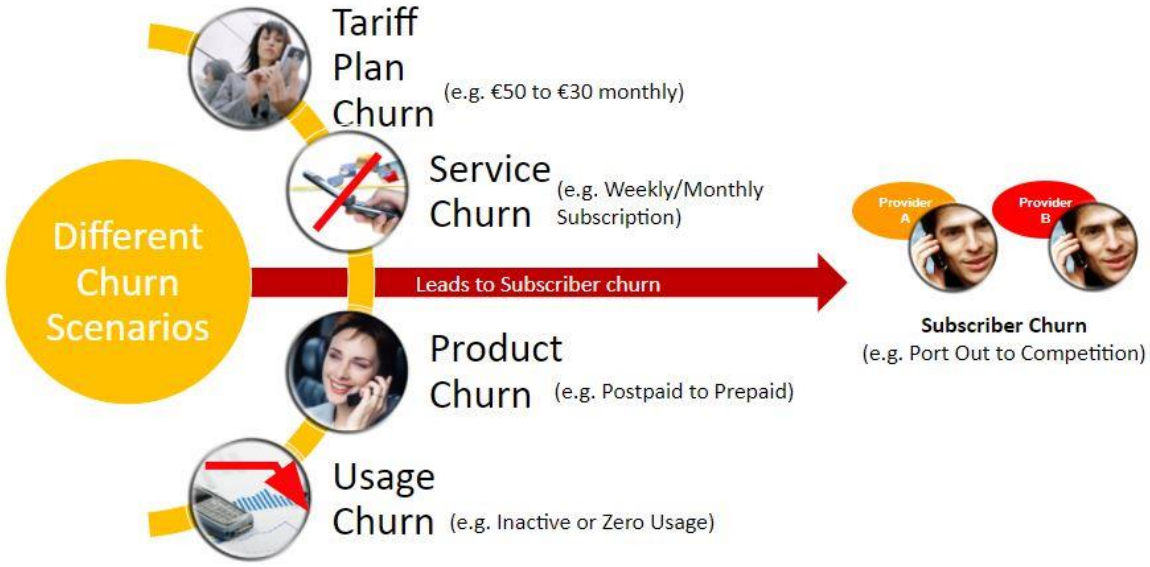
Internal Outlook

- **Tremendous Growth Potential**
  - Generation of vast quantities of data
  - Drive new revenue growth through customer centricity
  - Continue to exploit cost efficiencies
- **Key questions that clients ask around churn**
  - How can I understand my churn situation better; both at the organization (macro) & subscriber (micro) levels?
  - What are the key drivers of churn and what is influencing them?
  - What are the appropriate churn initiatives that should be launched to address the different churn drivers?

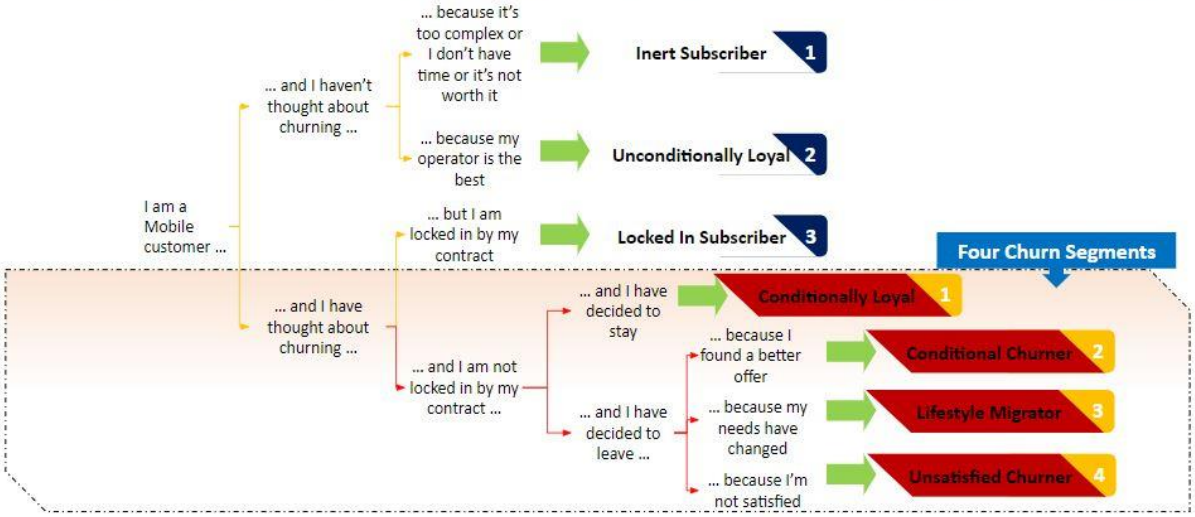
Need to Manage Churn

Churn is a key driver of EBITDA margin and an industry-wide challenge.
A churned customer provides less revenue or zero revenue and increases competitor market share.
Increase acquisition cost for the service provider if the customer churned to competition. It costs up to 5 times as much for an Service Provider to acquire a new subscriber as to retain an existing one

Subscriber Churn can be in different forms and not just exit from the base



Decision cycle of a subscriber: Changes as per needs and/or experiences



Four Churn Segments: Loyalty drivers for each segment

Conditionally Loyal Subscriber

- ❑ Frequently re-evaluates purchase decisions
- ❑ Choose brand on (semi) rational basis
- ❑ Likes to change to test new products

Conditional Churner

Lifestyle Migrator

- ❑ Uncontrollable change in needs / usage
- ❑ Behaviour.
- ❑ Involuntary Churn

Unsatisfied Churner

- ❑ Unsatisfied subscriber

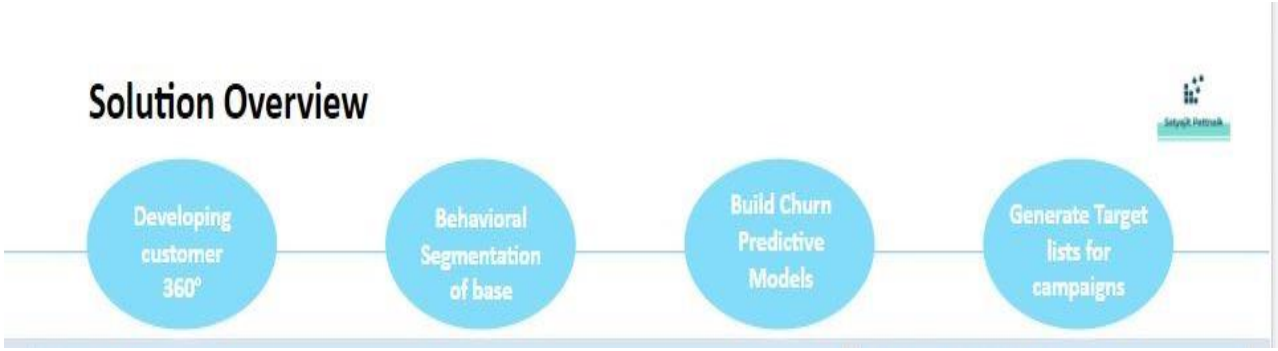
Loyalty Drivers

Key drivers that Influence Churn

1. Handset Loss/Upgrade
2. Cost of Service / Competitor pricing
3. Network Quality
4. Others
5. Customer Care Quality

Key drivers for Subscriber loyalty

1. Offers and services
2. Price
3. Quality of products and services
4. Quality of customer service
5. Length of contract period
6. Perception of telecom brand
7. Marketing programmes and campaigns



Some quick insights from the Dataset:

1. Electronic check medium are the highest churners.

2. Contract Type - Monthly customers are more likely to churn because of no contract terms, as they are free to go customers.

3. No Online security, No Tech Support category are high churners.

4. Non senior Citizens are high churners.

Models used:

1. Decision tree Classifier:

	precision	recall	f1-score	support
0	0.97	0.88	0.93	540
1	0.91	0.98	0.94	634
accuracy			0.93	1174
macro avg	0.94	0.93	0.93	1174
weighted avg	0.94	0.93	0.93	1174

Accuracy is 92%.

2. Random Forest Classifier:

	precision	recall	f1-score	support
0	0.95	0.92	0.93	518
1	0.94	0.96	0.95	652
accuracy			0.94	1170
macro avg	0.94	0.94	0.94	1170
weighted avg	0.94	0.94	0.94	1170

Accuracy is 94%

Our final model i.e. Random forest Classifier with SMOTEENN, we will use as it give better results than decision tree.

Results: