

Advanced analytics to a major bus ticketing company in South India – Case Study



- Increase customer life time value
- Improve customer acquisition
- Better agent engagement
- Reduce customer churn
- Build customer loyalty

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Overview

Bus travel these days, is gaining popularity as the most preferred mode of travel with better roads, comfortable buses, high flight rates and ease of access to tickets. Proliferation of internet, rising income, online bus ticket search and booking, growth in low cost carriers, have further added to the growth of online travel market in India.

The Indian bus transport industry has long been a highly fragmented and unorganized sector. It was characterized by a few contract carriage operators having large fleet of 100 buses each and small players with 5-10 buses. Most of these players would be regional lacking countrywide experience. These players would be forced to rely on a network of agents for their booking. Online travel booking companies aggregate inventories (or seat available) from different operators on different routes and makes the job easy for bus companies. These companies offer one stop solution to customers to book bus tickets of their choice based on operator, type of bus, seat type/location/layout, fare, departure time, boarding point, etc at a click of the mouse button.

But these online travel booking companies are now plagued with the challenges of low margins, high operating costs, poor internet penetration, poor credit card penetration and cut-throat competition. However the ocean of data available from these portals open up an entirely new avenue of using data analytics to derive business insights which would help companies grow and measure their business.

Our client, a major bus ticketing company in South India approached us to improve the customer acquisition, reducing churn and increase customer life time value. In this case study, we have demonstrated how our analytics added value to the client organization. The approach adopted can be customized to similar companies.

Business need

Our client approached AAUM to find out avenues to increase the online customer segment by advanced data analytics. The client wanted to uncover patterns from the data to understand the engagement levels of the users and target suitable customized loyalty programs.

Need validation

Five different types of customers add on to our client business.

- Customers – This segment is characterized by online registered customers who book bus tickets by logging on to the ticket booking portal.



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- Guests – This segment is also characterized by online customers who book bus tickets without logging on to the online ticket booking portal.
- Client's operators – The client organization also provides help desk to enable bookings through telephonic bookings.
- Agents – This segment refers to the interim people/entities who book tickets for people using the client's online ticket booking portal. They are given commission for the tickets they book.
- API operators – Other travel booking arenas use our clients' online booking portal for their bus bookings.
- Customers, guests and client's operators bring a better margin of 10% to the client. Agents bring a margin of around 2-5% to the client and the API contributes to the lowest margin of 2%. While travelers through agent bookings constitute about more than 75% revenues, their profit margin is not very high. The growth from direct customers would be sweet and would yield better margin.

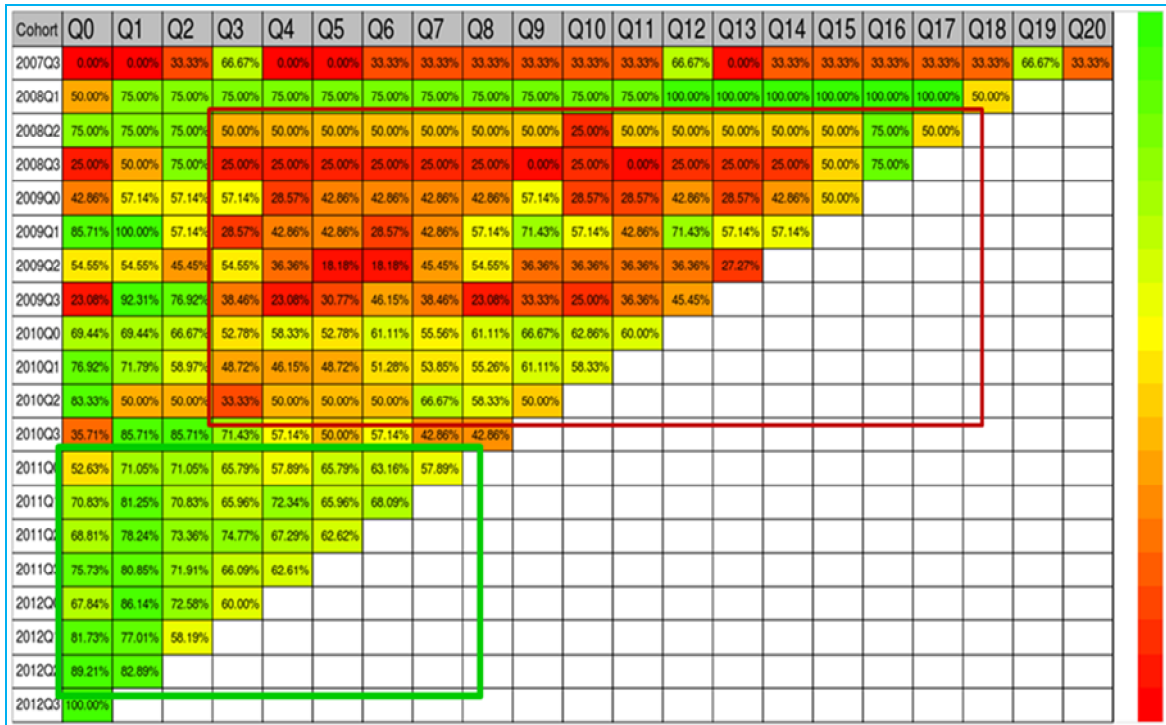
Solution

Measuring engagement strategy

As a ticket booking company, the client's primary goal is to grow the user base (reach), get those users to stick around (retention), and make sure they're so engaged and contribute to (revenue). It is important to:

- Understand which features affect user growth and adoption (& which do not).
- Customize offers according to groups of a kind – i.e. similar agents, customers, etc. Understand repeat behavior of purchases to compute the Life Time Value (LTV) of the end users.

Key here is to use this understanding to make sure the marketing campaign budget spent on acquiring users (CAC – customer acquisition cost) is less than the LTV (Life Time Value) of users i.e. $CAC < LTV$. This analysis helps us to separate out behavior of newly mined users vs. repeat users (who typically are loyal and more indicative of long term patterns of success). It is very essential for the ticket booking company to separate out the growth metrics from the engagement metrics. Growth can easily mask engagement problems. The lack of activity of the old users may be hidden by an impressive growth in new users.



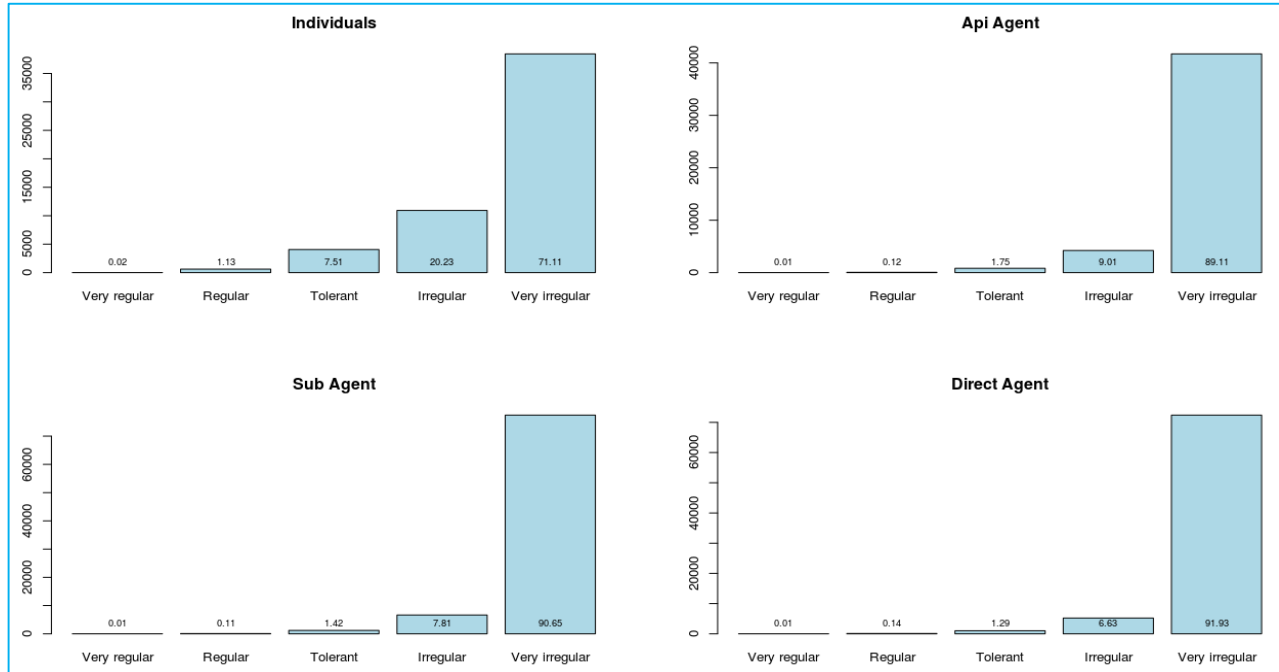
The above graph depicts the engagement level of sub agents over the years. A quarterly analysis is performed over all the years since inception. X axis denotes agents who signed up with the client in that quarter. Y axis denotes their contribution across various quarters. Q0 denote the contribution of the agent signed up in that quarter, Q1 in the next quarter, etc. The color highlights depicts the exact engagement level as given by the color scale on the right moving up from red (which depicts the worst disengagement level of 0%) to bright green (which shows the best engagement level of 100%). The graph highlights a case of concern for the ticket booking company with deteriorating engagement levels after 3 quarters since registration. Interestingly agents who have registered in 2008 Q1 display good engagement levels. However signups in Q4 and Q1 reflects relatively poor engagement level. This kind of an analysis reflects group of people who share a common characteristic over a period of time. It helps us to investigate how each group stay engaged over a period of time and track which group experienced a fall out since when. This will further help us to investigate the root causes for the engagement trend and take corrective/preventive actions to arrive at healthy engagement levels.

Regularity metrics to initiate customer engagement programs

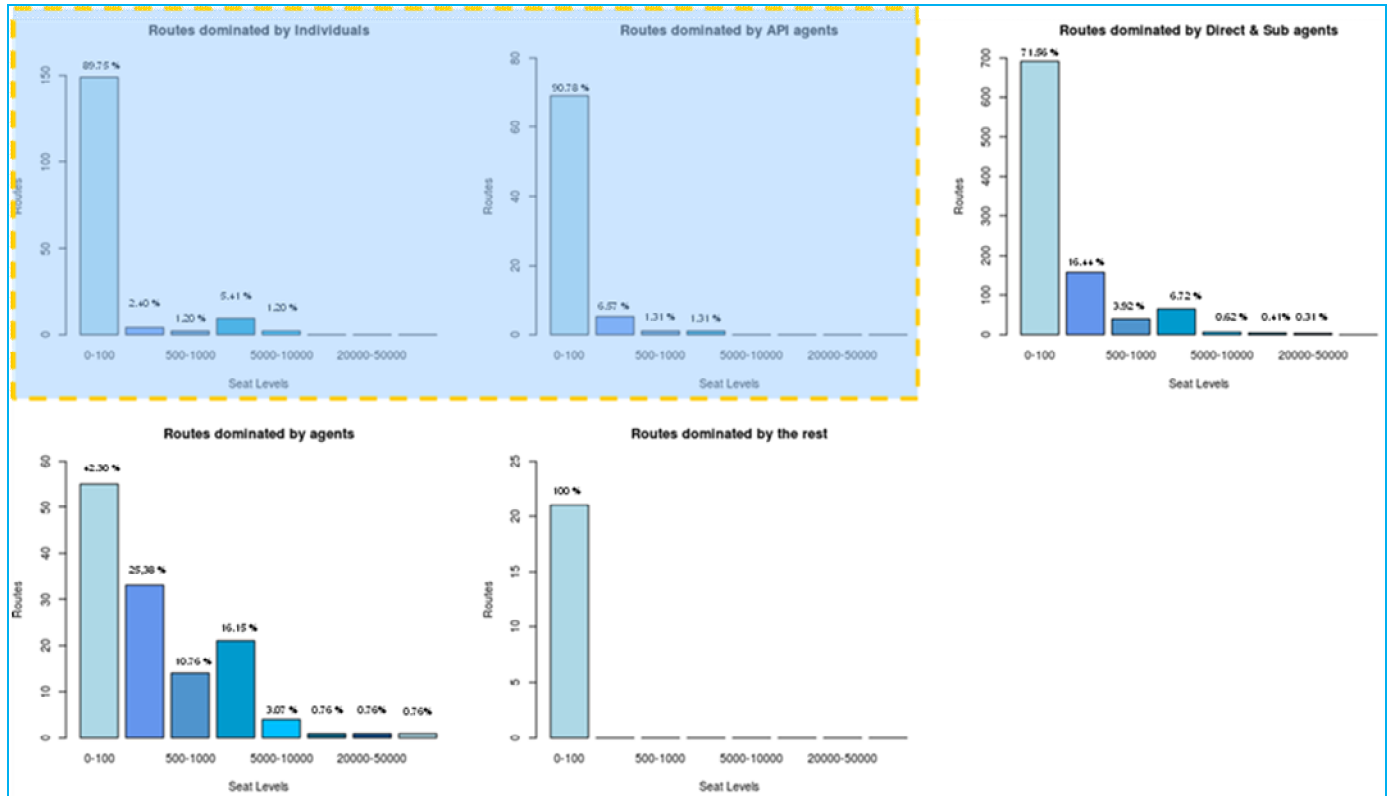
Reaching out to a wider user base and making them stay brand loyal is a strategy which any business should adopt. Effective customer engagement programs should be targeted at the right level to increase profits. Different individuals react differently to customer engagement levels. The Fundamental Campaign Segmentation classifies the set of people to whom the campaign/engagement would be effective even if included or not as *Persuadables*. There are others for whom the campaign has little or no impact. The segments that are likely to react if they are

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included in the campaign are called *Sure Things*. The set of people who do not purchase whether included in the program or not are called *Lost Causes*. *Sleeping dogs* respond to engagement programs in a negative manner. They are less likely to purchase because of intervention. Customer engagement programs should be ideally targeted at *Persuadables* and *Sure Things* to maximize incremental sales.



Our consultants have devised regularity metrics to help the ticket booking company to identify routes on which customer engagement levels can be targeted effectively. Regularity metrics identify those regular travelers on a specific route. The routes are bucketed on basis of their dominance on traveler group as individual dominated (50% of the transactions on the route are dominated by guests, customers and client operators), api dominated, agent dominated, etc. Our consultants have devised regularity metrics to define the traveling behavior of the customer. Regularity metrics categorizes the traveler as “very regular”, “regular”, “tolerant”, “irregular” and “very irregular” based on the traveling nature. This is a novel metric devised based on statistical computation of underlying bookings. This was further tied up with typical RFM analysis (Recency, Frequency, Monetary) to devise unique plans for improving customer acquisition, reduce churn, etc. While the integrated RFM/Regularity metrics is not covered in this case study, we shall discuss on tying route metric to seat levels.



The routes are further bucketed on their seat levels as 1-100, 100-500, 500-1000, 1000-5000 and so on. The graph identifies around 70 routes which are specifically dominated by api agents. The ticket booking company can initiate their customer engagement programs at these routes initially to lure them as it more profitable to convert this segment of online bookers to become their registered users where the margin is high.

We have illustrated the benefits through a very simple case study, the benefits through data analytics are many. The integrated RFM/Regularity metrics can very well guide the client organizations to take actionable insights. This could further be augmented with advanced analytical models like propensity and uplift models that can help the business client to identify the “persuadables” and “sure things” from these routes and give them the right segment to target their marketing and seo activities.

Benefits

With hordes of data available, it is only wise for companies to take advantage of these to come up with actionable insights to help them impact upon their ROI. Advanced data analytics helped our client to understand their volume, revenue and commission pattern, understand customer behavior and segment them for specific loyalty



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programs, analyze cost of cancellation, and much more. A data driven guiding approach to marketing department is the most intelligent approach to insightful decisions.

Software

AAUM's proprietary analytics platform

About Aaum

Aaum Research and Analytics founded by IIT Madras alumnus brings in extensive global business experience working with Fortune 100 companies in North America and Asia Pacific. Incubated at IIT Madras Incubator ecosystem with a focus on researching and devising the sophisticated analytical techniques to solve the pressing business needs of corporations ranging from travel & logistics, finance, insurance, HR, Health Care, Entertainment, FMCGs, retail, Telecom.

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