CASE STUDY

EXPAND MARKET SHARE WITH RIGHT CUSTOMER TARGETING

USING HIDDEN MARKOV MODEL TO IDENTIFY THE RIGHT CUSTOMERS

According to the World Health Organization (WHO), pharma promotion consists of "all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs."[1]

INTRODUCTION

Several factors drive Healthcare Professionals (HCP) towards prescribing medicines to their patients. While a patient's diagnosis helps decide the drug to be prescribed, an HCP has a leeway to choose from the many generics and biosimilars available in the market, if applicable. Standing out from competing products is where pharmaceutical promotions step in, a playground where pharma competitors come head-to-head to promote their brands in front of their customers – the HCPs. These promotional channels can be personal or non-personal, via in-person calls by sales reps or direct-to-consumer advertising. For instance, during 2013-2014, 1,600+ pharma companies spent close to $3.5 billion on about 700,000 HCPs to promote their products[2].

Pharma companies strive to connect with the most influential HCPs from their markets in an endeavor to increase the prescription share from such opportune customer segments. Companies rely on a myriad of promotional activities to promote their brands and increase prescription rates by carefully communicating the derived patient health benefits and treatment outcomes. Several advanced analytics techniques are often helpful to identify and target such customer segments in the interest of driving sales and expanding market share.

The following illustration describes how Axtria created a self-serve tool, powered by advanced statistical models, for a leading pharma company, to evaluate its target market. The tool's HCP segment-based insights helped strategize promotions, ensuring increased conversion rates and maximized sales from prescriptions.

BUSINESS SCENARIO

The Sales & Marketing (S&M) team at a leading Pharma company had segmented the customer segments for one of their brands according to the corresponding HCPs' propensity to prescribe it.

TYPE 1

The first type of customer segments, or the 'High Tiers,' consisted of loyal HCPs where almost 80% of them were prescribing the client's product to their patients

TYPE 2

The second type of customer segments, or the 'Low Tiers,' consisted of reluctant HCPs where as low as 20% of them were prescribing the client's product to their patients

AXTRIA
INGENIOUS INSIGHTS

The S&M team wanted to increase their sales numbers, which were much below their true potential. Considering the nature of customer segments, the client wanted to approach the situation with two business problems.

- How to push reluctant HCPs up the propensity ranks; such as from a Non-User to a Trialist, and a Trialist to a Loyalist?
- How to capitalize on loyal HCPs within the High Tiers, which were most likely to prescribe?

By identifying the promotional strategies to address these questions, the S&M team aimed to achieve increased sales numbers for their product.

Hidden Markov is a statistical model which works on a dataset with unobserved and hidden variables. It is a tool for representing probability distributions over sequences of patterns and observations.[3]

AXTRIA'S APPROACH

As a solution, Axtria developed an innovative HCP targeting model by leveraging the Hidden Markov statistical technique. The key features and objectives of this model were:

- Analyze and predict each HCP's probability to move up the propensity ranks on being exposed to different promotional techniques. For example, increasing calls by 2 are likely to convert a particular 'Trialist' HCP into a 'Loyalist.'
- Scale the solution to the entire target market with effective marketing planning, evaluation & action, by using a combination of various targeting and promotional parameters.

The Hidden Markov model delivered two matrices:

EMISSION MATRIX:
This matrix provided transition probabilities based on promotional scores

+

TRANSITION MATRIX:
This matrix provided the probability of each HCP to move up the propensity ranks

=

The combined product of these two matrices yielded a list of HCPs, whose transition probabilities seemed to increase with an increased promotional score

Based on the results of this model, Axtria created a tool that:

- Automatically generated the scores for each type of HCP (User, Non-user, Trialist, Repeaters & Loyalist).
- Had the option of modifying the parameters for promotional exposure, such as Primary Detail Equivalent (PDEs) values for sales rep calls.
- Could simulate the user's desired results by modifying the promotional parameters to gauge their likely impact on their target HCPs.
- Was self-serve and could be used by the client executives independently.

As a result of using the self-serve tool, the S&M team could arrive at lists with the following types of HCPs:

- **Promo-responsive HCPs:** With scores depicting the chances of moving from lower to higher states, on being exposed to certain types and quantum of promotions. Once the list was generated, the team could prioritize and target the HCPs with the highest score categories.
- **High-risk loyalists (HCPs who were already prescribing the client's product):** Who were at risk of reducing their prescriptions with changes in promotions. With this list, the team could optimize the type and quantum of promotions targeted towards each of those HCPs.

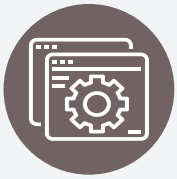
CLIENT BENEFITS

IMMEDIATE TIME TO MARKET

With on-demand HCP scores, the self-serve tool enabled instant data to insights to promotional operations within the target market. This helped the S&M executives to reduce their go-to-market cycle time and observe faster ROI.

TOP TIER LOYALISTS IDENTIFIED

The tool revealed a list of the highest-ranking HCPs which were contributing to over 20% of the product's prescriptions. With this insightful information, for the very first time, the client could nurture those loyalists with hyper-targeted promotions and exclusive plans.



HIGHER PROMOTIONS EFFECTIVENESS

The self-serve tool's scenario analysis feature enabled the client executives to re-run the analysis as required under many test scenarios, arriving at the most optimum state promotions, such as the structure of salesforce deployment. This helped with:

- Executing fit-for-purpose promotional tactics across customer segments
- Reduced cost of promotions
- Reduced promotions trial and error
- Reduced customer attrition and increased customer loyalty

CONCLUSION

Advanced analytics techniques, backed with sophisticated statistical algorithms, can help reveal high potential customers. When these capabilities are delivered on self-serve cloud-based platforms, business users can simulate operations before actual implementation in the market. These predictive analytics-based simulation tools are capable of bringing sales and marketing teams closer to their desired outcomes in real-world situations. (Read more in *Top Five Benefits Of Predictive Intelligence For Pharma Marketing*)

In the wake of changing tides in the pharma market, with limited access to HCPs and their evolving preferences, pharma companies are transforming their entire commercial approach. Identifying granular customer personas, intelligently deploying hyper-targeted communication strategies, and measuring promo-effectiveness across channels and stakeholders form the cornerstones of such commercial strategy advancements.

REFERENCES

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3. "An introduction to Hidden Markov Models and Baysian Networks" http://mlg.eng.cam.ac.uk/zoubin/papers/ijprai.pdf