RANKMINER

Measuring & Improving Customer Profitability

Artificial intelligence for call centers

Executive summary

Artificial Intelligence or more specifically, Machine Learning, is the process of designing, tuning and employing algorithms to simplify conclusions given limited data inputs. With a continuously growing and seemingly limitless amount of data accumulating, the need to systematically identify patterns and predict likely outcomes is quickly becoming a necessity. Until recently, the ability to apply machine-learning techniques to the voice or audio channel has not been possible. Transcribing speech to text has been introduced and provides benefit but still is only as good as the human analyst that is hired to manipulate the data.

RankMiner has developed a predictive voice analytics platform that not only prescribes next best actions for call centers but also adapts its predictive algorithms to changing environments. We have introduced two product lines, Customer Insight and Agent Insight that systematically improve successful telephone-based customer interactions for the purpose of maximizing call center profitability.

In call center businesses, there have been lots of solutions developed around buying customer lists, qualifying prospects, using social media to better target prospects, etc., but little has been developed using actual conversations between phone agents and customers. There is a wealth of valuable information in those conversations that if properly extracted and utilized could significantly improve call center profitability. Since call center operations serve a multitude of different businesses, those with outbound calling initiatives usually deal with limited capacity at some level – and those limitations carry specific implications – we will therefore focus on RankMiner's Customer Insight product line.

Accelerating contact to cash

Maximizing profit in outbound call centers generally involves accelerating the "contact to cash" cycle while holding the level of resources constant. Identifying and pursuing prospects that are more likely to say "Yes" now rather than spending resources and/or contacts on those more likely to say "No" is key.

Once a call center has identified and qualified a prospect, the next action (and cost metric) is very often the attempt(s) to contact the prospect. It is in the process of attempts and subsequent conversations where the cost of a call center's phone agents and opportunity cost start to add up, since many times multiple contacts with the prospect is required. By identifying which prospects are more likely to say "Yes" upon further contact, a call center can maximize its effectiveness and therefore its profits with respect to conversion rates.

Likewise, there are many outbound call centers that attempt to close a prospect on the very first contact. If unsuccessful, the phone agent moves on to the next prospect. The problem exists because many times, a significant portion of those prospects were likely buyers, but the phone agent wasn't sufficiently skilled to bring that prospect to closure. As a result, many call centers aren't able to maximize their profits.

Defining & capturing engagement

One of the greatest predictors of success for phone agents is their ability to effectively engage prospects and move them along the sales process. Product specific guidance is a must in training phone agents, but their ability to recognize prospects' willingness to buy is not always obvious. Call Centers always have phone agents who are naturally gifted at identifying the verbal cues beyond the words spoken to nudge prospects forward, but how does a call center systematically capture that engagement?

RankMiner's patented predictive analytics software uses advanced Artificial Intelligence techniques to measure the likelihood of a prospect to say "Yes" by analyzing telephone interactions and assessing the emotions and behaviors of other successful conversations. This allows call centers to objectively quantify qualities that were previously thought to be subjective. It also enables call centers to automatically identify these qualities, thereby increasing overall profitability.

Objectifying prospect behavior and personality

In forming a model to assess a person's willingness to say "Yes," RankMiner employs various forms of supervised and unsupervised machine learning algorithms to accurately describe the call center environment. Aspects such as historical trends, data extraction, emotional profiling, and the means mapping of extracted data to emotional profiles are examples of elements used. The first task is to determine the types of data that can provide predictors of a successful outcome. In order to measure emotion, RankMiner software organizes the raw audio signal itself to capture vocal nuances and form them to describe patterns of agreeableness, amicability, and other positive attitudes, as well as negative vocal traits such as hostility and reluctance. Next, phone calls are labeled as "successful" or "unsuccessful" outcomes, defined in terms of the desired result, which in this case is collecting a debt. The set of patterns associated with successful and unsuccessful outcomes form dichotomous profiles that measure the likelihood of an as-yet unresolved attempt to ultimately becoming successful.

There are several factors involved in the mathematical modeling of the interaction between a phone agent and a prospect in a call center environment. One point of consideration is in the labeling -- how should one determine a call as successful or unsuccessful? The way most often thought of first is to label calls as successful where an outcome was a sale and to label calls as unsuccessful where no sale took place. Indeed, there is a logical justification for using this definition. Intuitively, a call assessed against profiles formed this way can measure the degree to which the call sounds like a successful call versus sounding like an unsuccessful call. The argument is that if a call sounds like a sale but has yet to be resolved, then future calls are more likely to be actual sales, and likewise with refusal calls. This method of labeling, however, operates on an assumption: that unresolved attempts must eventually fall into a sale or a refusal to buy outcome. This sounds obvious, but the implication here is that the call center must continue calling a prospect to reach one of these conclusions. In practice, there is a limit to how many attempts will be made on an account before a company must cut its losses. In short, the labeling scheme does not fully consider opportunity cost and the time value of money involved in the sales process. RankMiner refers to this as a stationary prediction process.

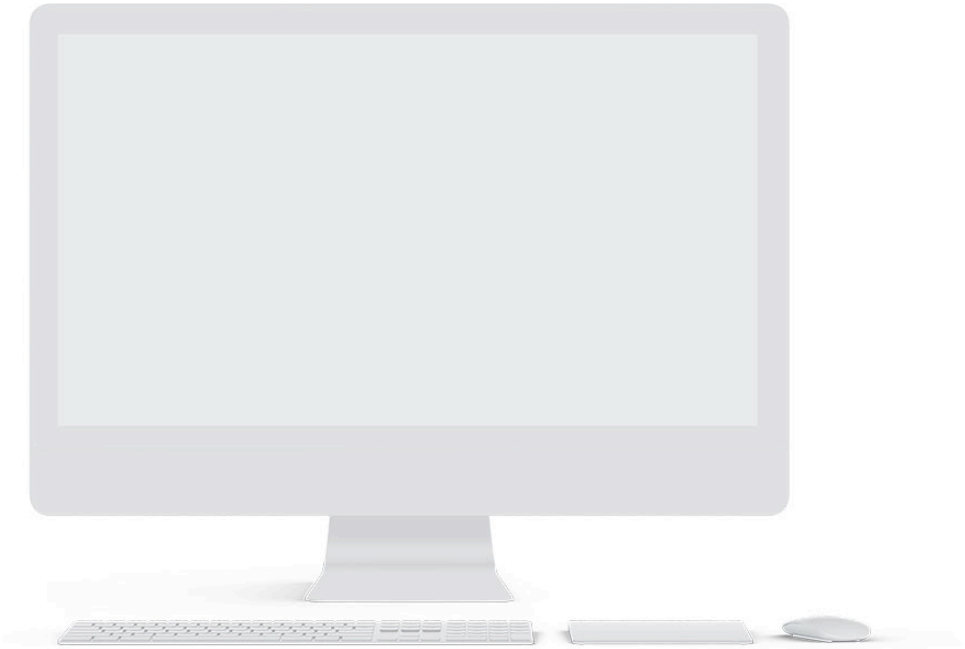
A more subtle way of defining successful and unsuccessful calls is revealed by considering first the principal use of the predictive model. Assessments against the model are made for calls to a prospect where the outcome was unresolved in an effort to gauge whether or not the prospect will actually say "Yes" in a subsequent call. Therefore, we can label that call as a success if the decision is made to pursue further and a sale is made. Likewise, if we were to continue pursuit and a future call ended in refusal, then the choice of continuing to call was unsuccessful, the choice having been made at the time the unresolved call was taken; therefore, we label the unresolved call as unsuccessful. RankMiner refers to this as a transitional prediction process.

This prediction method does not operate under the assumption of the stationary process because the profiles are used to assess the likelihood that the next call will be a success. The transitional process has the added benefit of calculating real statistical approximations of the model's future performance when validating with labeled calls that were not used in forming the profiles. The downside however is that since both calls labeled as successful and unsuccessful are themselves unresolved calls, creating profiles that can provide a sufficiently disparate "landscape" on which to place new calls can at best require more data to accomplish the task, and at worst can be infeasible given the constraints of the operational environment. In previous and continuing studies, pursuing the creation of a transitional predictive model using RankMiner's technology has been effective and profitable for call centers using RankMiner.

Another factor in creating a behavioral predictive model is what data to provide for forming its profiles. A general principle behind creating a predictive model that can perform as well as possible is to train it with a data set that, as a whole, is as descriptive as possible to the population on which it will be making evaluations. One way of ensuring this is to gather training data from sources with similar qualities to the area of application. Luckily, there is often enough data and it is frequently a brief procedure to train a model specific to an individual call center. It is always an aim of developing machine-learning software that predictive models are allowed to become more intelligent in making decisions by learning from mistakes. Training and assessing a predictive model on the same person not only allows for accurate calibration of the model but can, given enough recalibrations, assess emotional trends specific to that person, and hence make predictions on the likelihood of receiving payment based off of the progression of all previous calls taken, not just the latest.

Automating competencies

Predictive Voice Analytics is challenged with making accurate predictions using unstructured data contained in conversations. The process of making predictions has many steps but by systematically identifying and mathematically describing each point of the process, RankMiner is able to provide consistent predictive models that help call centers improve their profitability. Dynamic behavioral response from real-time emotional assessment, combined with gauging overall trends in customer behavior, will continue to improve the operations and overall profitability for companies taking advantage of the power of Predictive Voice Analytics.



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RankMiner is an industry-leading pioneer in predictive voice analytics. Using an advanced machine learning algorithm, RankMiner's predictive voice analytics solution can not only identify a speaker's emotional behavior and tone, it can create a prediction of future behaviors based on that information.

RankMiner is dedicated to providing the call center industry with forwardthinking, predictive analytics solutions that help businesses work smarter, faster, and more efficiently with their current resources. RankMiner allows you to target the right customers at the right time to increase conversion rates, speed up cash flow, and improve profits.

RankMiner brings the future of predictive business analytics to your call center for improved business results that give you a leg up on the competition.

Connect with us

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