sparkcognition™

Use Case

PREDICTING COMPLAINTS FOR TELECOM

PROBLEM

A major telecom provider receives 6,000 customer complaints each day, and wants to reduce call volume and increase customer satisfaction.

SOLUTION

Natural language processing and automated machine learning were used to generate insights into when and why customers may complain.

RESULTS

The provider expects to reduce call colume by 33%, all while increasing brand loyalty.

THE PROBLEM: GETTING AHEAD OF CUSTOMER COMPLAINTS

With how fierce competition is in the telecom industry, customer retention is more important than ever. Customer complaints have long been considered a key factor in helping to identify—and prevent—likely cases of customer churn. But making use of this information hasn't always been straightforward.

For one thing, by relying on customer complaints, companies put themselves in the position of trying to retroactively fix problems for customers that are already dissatisfied, rather than addressing issues before they become problems in the first place. Furthermore, customers don't always put in complaints at all when upset; many simply switch providers without ever communicating their unhappiness beforehand.

In fact, out of all the problems customers may face, the issue that causes the highest rate of dissatisfaction is also the lowest reported issue to telecom companies. Coverage problems account for 72% of customer dissatisfaction, but customers unhappy with their coverage only call to complain about 28.5% of the time. This is in sharp contrast to the cause with the next lowest rate of complaints, breach of contract, which is reported to telecom providers 85% of the time.

In all likelihood, this is because coverage may also be the most subjective problem, unlike more clear-cut issues like billing errors. Nonetheless, it underlines the need for telecom organizations to find ways to anticipate their customers' needs and take proactive steps to resolve them, rather than waiting for the customers to reach out.

There are two principal advantages to predicting customer issues ahead of time. The first is that telecom providers can anticipate who will complain and why. This knowledge can be used to prep call center staff ahead of time, so that when the customer calls, their issue has already been investigated and a faster resolution can be reached.

Operators can also use this information to keep customers from having to call at all by proactively eliminating the source of a customer's unhappiness, or by offering customers special rewards or packages. In doing so, telecom companies can ensure customer satisfaction and loyalty.

In one particular case, a major telecom provider with one million regional subscribers receives about 6,000 customer complaints each day. They'd like to reduce the volume of calls, and increase overall customer satisfaction, by predicting which customers will call and addressing their issues before they need to complain.

PROPENSITY TO COMPLAIN ACCORDING TO SERVICE PROBLEM TYPE

	COVERAGE PROBLEM	DIFFICULTY OBTAINING INFORMATION	INCORRECT BILLING	INCORRECT CHARGES	BREACH OF CONTRACT	DIFFICULTY UNSUBSCRIBING	DELAYED SERVICE
N. USERS	536	73	37	34	27	13	9
N. OF COMPLAINERS	153	63	35	31	23	12	8
% OF COMPLAINERS	28.5%	86.3%	94.6%	91.2%	85.2%	92.3%	88.9%

Source: Garin-Munoz et. al., 2016.
Note: N = 729 declated dissatisfaction at least once

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THE SOLUTION: PREDICT AND PREVENT COMPLAINTS

By analyzing the customer data they have, telecom organizations can predict—and prevent—issues that may lead to customer complaints or general dissatisfaction. This analysis can be accomplished by using machine learning—specifically, natural language processing (NLP) and automated model building (AMB).

NLP software like SparkCognition's the DeepNLP™ product enables machine learning models to take full advantage of the wealth of customer data available. It transforms natural language content into structured data, which can then be used for process automation, decision support and analytics, and predictive modeling when paired with automated model building (AMB) software.

AMB is needed because creating models that can use customer data to predict complaints would ordinarily be a difficult task, requiring substantial data science and subject matter expertise, as well as constant dedication to scale and maintain potentially thousands of models across the entire organization. To genuinely create and benefit from customer complaint models, telecom organizations must make use of AMB.

AMB solutions, such as SparkCognition's SparkCognition's Darwin® product, provide a productive environment to empower users of all data science experience levels to quickly prototype use cases. This allows users to develop, tune, and implement machine learning applications faster than traditional methods.

In the case of the major telecom provider struggling to reduce call volume, an AMB solution was used to ingest customer data, clean and transform this data for use, and generate a prediction of whether or not a customer is likely to complain within the next two days. The information on customers predicted to complain is then sent to a third party, who evaluates each customer and labels a possible diagnosis of their problem, as well as providing a solution.

THE RESULTS: MEANINGFUL RELATIONSHIPS WITH CUSTOMERS

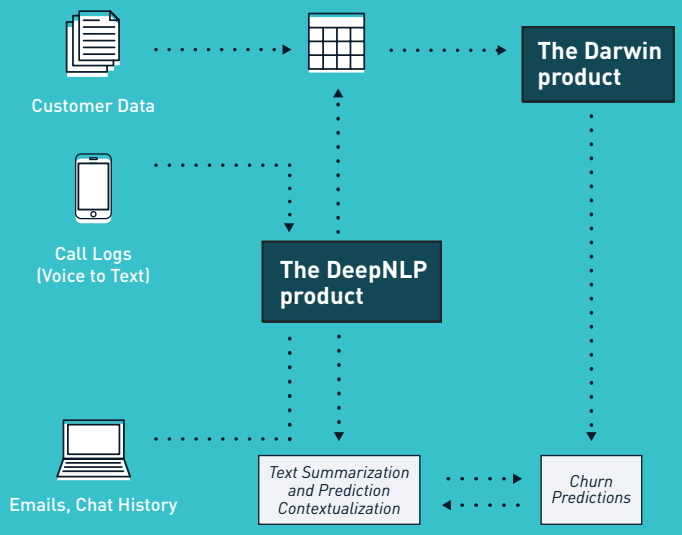
Though this project is still in process, based on preliminary results the telecom provider expects to reduce call volume by 2,000 calls per day, a 33% reduction in complaints overall.

By predicting which customers will feel dissatisfied or need to complain, and when, businesses can get ahead of the complaint experience with proactive outreach, preemptive solutions, and enticing offers. The resulting positive experience greatly improves rates of customer retention, and can even turn satisfied customers into promoters.

Additionally, a compelling customer experience sets the stage for a successful go-to-market strategy by building a platform for repeated, meaningful, and positive customer interactions that reinforce brand awareness, collect data to fuel targeted loyalty programs, and ensure that customers will stick by you for years to come.

FIGURE 3

Churn prediction using the DeepNLP product and the Darwin product



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