

BFSI

AI Solutions and Data Science

Support for Text Analytics in Insurance

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**1.0 CONTEXT, OBJECTIVES, AND OUTCOMES**

This white paper on AI & ML is based on contributions from FutureAnalytica resources that research, implement and validate Text Analytics in Insurance.

Insurance firms are aware of the significance of enhancing the identification of targeted text messages across a variety of needs in order to boost business productivity, increase profits, and reduce loss. Insurance companies collect large amounts of texts across multiple channels every day, including chat, instant messaging, social media, and email. They are recorded in text format, including the message type itself and freeform notes from applications used by customer service representatives (CSRs), agents, financial advisors, and claimants. Handling, categorizing, interpreting, or extracting the crucial information from all that data is impossible.

A perfect storm of escalating legal complexity, regulatory challenges, a cutthroat customer market, and growing fraud confronts BFSI sector. Fortunately, today with natural language processing Machine learning technology can be used to analyze and identify specific communications to meet these unique needs. The BFSI industry has traditionally been a pioneer in implementing cutting-edge technology. In addition to being an early adopter, it regularly makes use of the potential of new technologies to reduce operational bottlenecks and increase efficiency. The next wave, as you can imagine, revolves around using AI / ML and state-of-the-art analytics to automate processes and make data-driven decisions. And text analysis has become an important part of this process. The global market for text analytics is anticipated to grow significantly due to the increased need for machine learning and big data analytics.

**Outcomes:**

As the demand for machine learning and big data analytics grows, the text analytics market is expected to grow rapidly around the world. From viewing loan applications to e-KYC, the potential applications of this tool are unlimited and can empower BFSI companies in a variety of ways. This tool can speed up processing, enable big data integration, and make data validation and integration more consistent. This can help with advanced analytics, identify trends, paving the way for business growth, and even mitigate risk.

* Insurance businesses can keep up with the new and changing threats to institutional integrity by using analytics.
* Fraud detection is possible through the analysis of insurance claims, settlement notes, etc. using text analytics tools.
* Analysis of the Voice of the Customer - By applying this method to comments on public social networks, it is able to discover market trends, gauge consumer perception of our company or brand, assess its corporate reputation, and provide early warning of potential crises in that reputation.
* Management of Claims - Analysis of Claims and Complaints is a logical application of text mining. Regardless of the inbound channel, complaints can be automatically categorized based on the products, services, or activities of the insurer as well as their seriousness in order to route them to the proper agents and ensure that they are handled appropriately in each instance.

**2.0 PROPOSED APPROACH**

Agility is a prerequisite for business to thrive in today's globally competitive markets. With FutureAnalytica’s solutions offer an unprecedented level of analytical agility. The fusion of data-driven analytics approaches, machine learning, and big data enables intelligent analytics that can truly analyze data, enabling large-scale autonomous decision making. Text analysis allows insurers to stay ahead of new and evolving threats to organizational integrity. FutureAnalytica focus on helping financial services organizations meet their regulatory obligations while managing risk, streamlining operations, protecting brand reputation, and increasing customer satisfaction. Through a data-driven analytical approach to monitor communication between brokers and clients using natural language processing, machine learning algorithms, and other analytical techniques.

FutureAnalytica’s advanced Text analytics will provide a next-generation platform model by using Predictive Analytics, Prescriptive Analytics, Descriptive Analytics, Machine Learning algorithms, and Deep Learning. It automates the time-consuming iterative process associated with building machine learning models. This allows developers, analysts, and data scientists to create large, productive ML models while maintaining model quality. FutureAnalytica's AI platform allows you to build advanced AI models without any special knowledge of data science or programming languages.

Building an AI model and integrating it into your enterprise can take 5-6 months or a year using traditional data science techniques. Future Analytica automates the process, so you can build your model in weeks with minimal effort across your data science team with just a few clicks. By choosing a pre-packaged AI solution, you can reduce the time it takes for difficult problems to add value.

Our solutions enable businesses to use an integrated analytics solution to easily and affordably handle their most difficult business and regulatory issues.

* We analyzed the textual data to identify new topics for identifying the ups and downs of financial markets.
* Analyze unstructured text related to customer interactions to identify intent. Route customers to the right people and improve customer care.
* Unlock market intelligence with text analysis. Compare all competing products and solutions to see how close they are to each other. Identify similar characteristics and use that insight to differentiate your product from your competitors.
* Analyze customer feedback extracted from multiple sources to determine the author's opinion. Evaluate market reputation by classifying positive and negative feedback.
* Automate the extraction of business and competitive intelligence from unstructured text. Analyze feedback data to reveal valuable insights.

**Benefits with FutureAnalytica.**

* Structured, semi-structured, and unstructured data may all be processed at scale using FutureAnalytica's built-in data lake.
* The no-code AutoML technology from FutureAnalytica increased data scientist productivity by 3X.
* FutureAnalytica provides automated data analysis reports up to 10x faster.
* Having a 95% accuracy on Prediction rate.
* One-click deployment and operation. AI applications are built to reduce time and achieve up to 10x faster visible ROI

1. **Customer Segmentation**
2. Companies can identify certain audiences who could be interested in their goods, services, and content by using customer segmentation.
3. Businesses can enhance their customization through segmentation. To encourage engagement and customer retention, this is becoming more and more crucial.
4. It is simpler to launch relevant advertising on time using the best channels by optimizing marketing efforts by grouping clients into more manageable categories.
5. Insurance businesses can find new prospects with comparable characteristics by segmenting their customer base.
6. **Fraud Detection**
7. Paying false (or inflated) invoices self-generated or obtained in collusion with a supplier
8. Forgery or tampering with documents or accounts owned by company
9. Intentional failure to accurately or completely record or disclose important information
10. Unauthorized transactions initiated under policies such as bills of exchange, withdrawals, repurchases, etc.
11. Checks that have been handed over to the agency by the policyholder in cash, but have not been notified by the company
12. Forged or counterfeit receipts and/or policy documents issued by third parties
13. **Claim Management**
14. Boost productivity and drastically cut expenditures
15. Make it possible for clients to examine alternatives and submit claims at anytime, anywhere.
16. Reduce Errors and increase customer satisfaction
17. Quickly settle claims with the push of a button
18. Data Standardization & Integration
19. **Customer Churn**
20. Examining the procedure and any problems can be beneficial. Reviewing the reason for leaving, such as if customers opt to work with a different agent or forego insurance, can be one solution.
21. determining whether customers had a poor experience, had a technical issue or encountered any other problem that would have contributed to customer churn.
22. Putting the needs of the customer first during all contacts, including renewals, helps lessen the probability that customers will leave.
23. In order to understand what went wrong and where you might improve, analyze your customer churn behaviour.

**2.1 Customer Segmentation**

Markets are divided into many client segments. The needs of each client group are taken into account when designing each product or service. The segmentation aids the insurance company in breaking down the market into manageable categories where the needs of the clients are the same.

**Objective**

Customer segmentation is a key idea for creating marketing strategies that will enhance organizations and boost sales. Marketing professionals can accomplish this goal with the aid of clustering algorithms. The demand for advanced data analytics approaches was emphasized by the quick expansion of high-dimensional databases and data warehouses, such as Customer Relationship Management (CRM).

**Key Activities**

* A continual process of discovery and change is the foundation of a customer-centric strategy. It has been shown that segmenting customers in this way provides firms with more trustworthy data.
* Insurance companies must now consider "lifestyle" data rather than "age/gender" data in order to construct a comprehensive customer profile as the industry transitions from years of basic segmentation to a hyper-personalized approach.

**Deliverables**

* Machine learning algorithms can leverage existing data elements to develop new sets of functions that can be used to more efficiently define customer segments.
* AI-driven segmentation and traditional segmentation are the ability to quickly spot changes in customer segments, and the resulting model can quickly and effectively identify anomalies and new trends.
* AI-driven segmentation is the ability to provide insurance data platforms with portfolio, customer 360, and transaction-level data, combining data from third parties and digital sources to reveal deep, actionable insights at a more detailed level.
* The AI-driven segmentation model can also be optimized over time, making it ideal for gaining a competitive advantage in a disruptive industry.

**2.2 Fraud Detection**

Insurance fraud is a deliberate fraud committed against or by an insurance company or agency for financial gain. Fraud can be committed at various times by claimants, policyholders, third-party claimants, or professionals servicing claimants. Insurance agents and organization employees can also commit insurance fraud. Inflating claims, lying on insurance applications, submitting claims for damage or injuries that never happened, and faking accidents are all examples of common scams.

**Objective**

Insurance firms have long struggled to detect fraud and provide excellent, prompt customer service to deserving claimants. How can insurance providers better serve their quality clients by utilizing the data at their disposal? The majority of insurance companies are still learning about text analytics, despite the fact that more and more businesses are already utilizing the technology to boost productivity, drive product development, and boost client loyalty in a sector that is driven by data.

**Key Activities**

* Advanced Text data is analyzed to establish patterns and any abnormal or unusual patterns or claims are easily detected.
* The algorithms determine whether a request is normal or suspicious by using NLP to assess historical data monitoring.

**Deliverables**

* Insurance companies can better deploy resources to investigate claims that have been recognized as possibly fraudulent, saving them time and money, by informing personnel about potentially fraudulent claims before processing and pay-outs.
* Real-time notifications increase resource efficiency for businesses and prevent related losses for insurers.
* Early detection of fraud risk and analysis of historical data and real-time alerts in NLP can help insurers protect themselves from fraud and the resulting losses.

**2.3 Claims Management**

One of an insurance company's primary duties is claims management. Leading insurance firms constantly work to develop techniques to optimise claims procedures in order to prevent any revenue leakage, which is essential for their financial success. In order to create the best claims value chain, customer experience and satisfaction serve as crucial differentiators for insurance brands.

**Objective**

Claims processing and management is a long process that involves many steps, from claim reporting to review and evaluation to settlement. This time-consuming process requires tedious manual labor, increases operating costs, and reduces the employee experience.

**Key Activities**

* An integrated tool for basic fraud detection algorithms that combines predictive modeling, database search, text or data mining, and reporting tools.
* The combination of text analysis and machine learning algorithms allows insurers to identify typical phrases and codes that indicate potential reimbursement events. As a result, insurers can identify such cases early and improve payment collection.
* Insurance firms can predict and set the limit for rapid pay-outs, as well as determine their loss reserve and the amount of cash required for future claims, using text analytics in claims management.

**Deliverables**

* Increase cost efficiency – Improve employee efficiency and reduce operational costs while automating manual processes and streamlining workflows. With real-time, step-by-step updates, the billing management system guarantees transparency and accountability throughout the billing process.
* Error and Fraud Detection – Text analysis enables insurers to effectively map their customer journeys to identify errors early and minimize the risk of financial loss due to fraud.
* Enhances customer service and experience – By automating the claims processing process, insurers can make it easier for customers to file a claim request, and by giving customer service representatives easy access, they can give customers real-time claim progress updates. Leading insurance companies may enhance their customer experiences and create enduring relationships with their clients by making the claims settlement process transparent.

**2.4 Customer Churn**

The loss of current clients or customers is referred to as customer churn. It pinpoints insurance clients who are more likely to cancel or not renew their contracts with the insurer. acquiring new consumers is more expensive than keeping your current clients.

**Objective**

An equally beneficial (and more cost-effective) business approach is to boost the lifetime value of your existing clients. This is because growing your customer base requires spending money on marketing and the onboarding phase. Brands should also implement a number of customer retention methods to lower client turnover and increase customer lifetime value.

**Key Activities**

* Text analytics focuses on gathering useful information from customer interactions, and these insights can help you make decisions that result in behaviour that is results-oriented
* Using information about consumer sentiments, efforts, and goals for the customer experience, text analytics platforms produce client insights from varied sources.

**Deliverables**

* The use of text analytics tools is essential for churn prevention, which also boosts ROI.
* The best way to go about preventing customer turnover is to analyse text and produce actionable business insights.

**3.0 Assumptions**

FutureAnalytica’s approach and corresponding price proposal to provide the services proposed hereunder (the “Services”) are based on the following assumptions.

* FutureAnalytica approach involves a clear process for using analytics to identify value-creating opportunities, uncover rapid outcomes, and extend solutions that meet business needs.
* Sophisticate data infrastructure is a prerequisite. FutureAnalytica does provide data processing solutions to maintain data infrastructure
* Both the collection front line and the digital infrastructure need to be in place before analytics models can be implemented