

# AUGMENTING DAY-TO-DAY OPERATIONAL EFFICIENCY USING NLP & TEXT MINING



By 2025 there will be 163 zettabytes of data in the world, according to IDC, of which 80% is unstructured data. That includes digital (e-mail messages, audio files, images, social media feeds, video files, word document, etc.) and non-digital items (paper receipts, doctor's notes etc.). Handling such high volume of data presents a huge challenge moreover comprehending such myriad formats of data is the bigger challenge.

**UNSTRUCTURED DATA  
IS TOO VALUABLE  
TO IGNORE**

Unstructured data is text-heavy, but it's too valuable to ignore. It contains potential business intelligence that can drive growth. This is where natural language processing (NLP) - when clubbed with text mining - helps businesses take advantage of this information, by rapidly transforming key content into actionable business insights.



***To better understand how NLP based text mining can help you, lets look at few industry applications.***

#### Text Extraction from Legal Documents

Using the advanced search function helps legal professionals sort vast number of documents to identify specific legal information quickly, to make an informed decision. Machines that employ NLP and Machine Learning (ML) are able to increase efficiency by 50%.

#### Chatbots for Travel Agencies

The popularity of travel chatbots as reservation agents is on rise. Travelers can book tickets by just stating where and when they'd like to travel. AI (artificial intelligence) powered chatbots help fill the forms and provide guidance through the rest of the booking process. With over 5 million questions answered per year, bookings through chatbots can generate 30% more revenue.

#### Sentiment Analysis in Crime Detection

Social networking services have proven to be valuable in revealing insights when sentiment analysis is applied to evaluate the polarity of tweets. Tweets can be useful in predicting 19-25 different kinds of crimes - that include stalking, thefts, and assault. Thus, sentiment analysis helps prevent crime, deter offenders and improve policing operational efficiency.

#### Automate Adverse Effects Case Processing

Detection and prevention of drug adverse effects are health care priorities. Case processing efforts can be reduced by 50% by leveraging NLP technologies (extract information from incoming data in the form of images, PDFs, clinical notes, audio files etc.).

## Responding to customer emails can be a tricky task

### How Quadratyx can help?

A leading bank had issues with managing its customer feedback and emails. The bank needed to quickly improve its customer response rate - reduce the duration of manual efforts to identify email complaints from non-complaint emails and automate as many parts of the support process as possible.

### Solution:

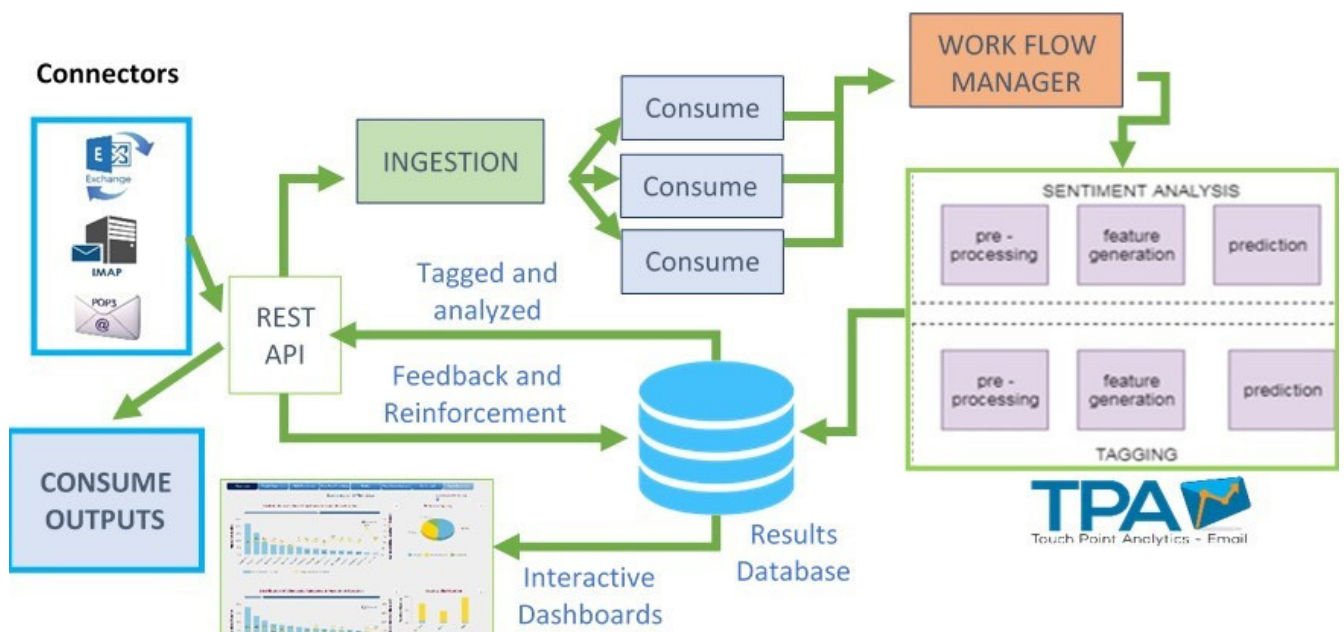
Quadratyx worked closely with the bank to develop, test and implement

the analytics solution by using text mining and NLP techniques to automate the processing of customer e-mails. **Quadratyx TPA** (touch point analytics) email solution helped categorize emails into various categories, sub-categories and sub-sub-categories.

NLP-based sentiment analysis provided insights into the tone of the e-mail by recognizing its content. It can understand different modes of expressions from the text, and categorizes every incoming email as neutral, negative and very negative.

Another important feature of our solution is the ability to visualize processed text through an interactive dashboard. The solution leverages ML and NLP to help users visualize data in different ways for easy interpretation.

### Quadratyx TPA Email Architecture



## Results:

The introduction of the machine learning based solution brought the bank immediate benefits.

- Within a few months of implementation, Quadratyx solution was able to tag emails automatically and ensured that e-mails with same issues were addressed automatically.
- The average response time to filter and respond to e-mail complaints was reduced to less than 15 minutes. Compared to the same service which initially took 4-5 days to respond.
- Customer satisfaction levels had increased dramatically.
- The size of the email response teams was optimized.

**For more information on NLP and Text mining solutions**  
**Contact Us**

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