Optimising Credit Risk Management with AI

Table of Contents

Keeping up with 'The News' is harder than you think

We live in an age of instant gratification, news is universal and spans the globe allowing content to be read and curated by virtually anyone, anywhere and at anytime, although with such a vast range of content, it's easy to get caught up in the mess of irrelevant articles, inaccurate data and expired information. The only solution to fine-tuning this content in regards to curation is in working smart - utilising nodes relevant to the news at hand to ensure contextual accuracy, or using Natural Language Processing in order to derive the overall emotional sentiment of an article - this is what we do.

Many companies still tend to rely on methods like using Google Alerts or even going through individual news websites, which makes tracking a large volume of clients near impossible. The sheer volume of the data that surfaces means that it's hard for a single employee to track ten, or even less, Google Alerts or websites effectively.

The only solution for such a large amount of data lies in automated searches that can utilise Natural Language Processing technology to assist in informatio management by providing summarised, translated and accurate 24 hour feedback that spans the optimum range of sources.

Over the next few pages, we'd like to show you exactly how we were able to solve all of these problems for the Credit Risk Management department of a well-known Bank, and just what makes us so unique.

Credit Risk Management - The Problem

Due to our client's position as a Credit Risk Management department, there was a strong desire for information surrounding their own consumers, any data that could be surfaced - especially news with a negative sentiment - would prove critical to the progress of their monitoring and internal analytics. The Credit Risk Management team had over 1000 clients both big and small, and it was vital that they were able to track each and every one of those clients through the assimilation of structured and unstructured data in order to identify the financial integrity of these companies through outside sources.

They agreed that using Google Alerts and other tools just wasn't efficient enough in terms of speed. Our client needed reasonably quick updates on potential risks in order to react quickly. Our clients didn't want to sacrifice speed for accuracy though, they required a clear-cut set of rules that defined what they considered relevant: this didn't just mean keywords, but search strings and compliance rules of the business had to form part of the input, too.

They needed to find information not only from articles, but from sets of structured and unstructured data all over the web, this would ensure the widest perspective of information. They also agreed that the information that came back had to be technically flexible, meaning that it could be read over many formats and within apps, to ensure that reaction time to potential bad news could be minimised for optimum efficiency.

A large factor at play with the CRM department was the inclusion of sentiment, the use of Natural Language Processing on our end meant that both structured data sets such as charts and unstructured data - for instance, articles - could be analysed for negative keywords surrounding any given client - such as 'non-performing asset' or 'liquidation'. Through doing this, reaction time would be optimised and internal monitoring could be instantly streamlined, because there was a finite amount of human CRM officers and a far larger volume of data to analyse, implementing our technology would lead to a nominal productivity increase

So to summarise, we ensure rapid capture of unstructured data through the utilisation of string searches and contextual analysis alongside keywords.

How Does Stella Work?

Stella works by analysing millions of texts from a multitude of sources using Neuro-Linguistic Processing technology and contextual machine learning. After filtering, summarising and tagging all of her information, Stella can curate a News, RSS, Blog and Social Media feed based solely around the information you want. What's more, these update in real-time. No more old news.

Stella utilises Agrud's Dictionary to create a map of contextual nodes around keywords using machine learning capabilities paired with human intelligence. She retrieves both news and raw data from a multitude of sources - including websites, blogs, and social media posts thanks to advanced 'listener' technology. After retrieval, Stella puts the data through its paces, running several robust 'smart-filters' that simultaneously eliminate fake news and duplicate data while summarising the information into easy-to-read, smart-tagged snippets. The result is a continuous, real-time stream of well textured data that is sharp, focused and relevant to our client's chosen content. All tagged for consumption.
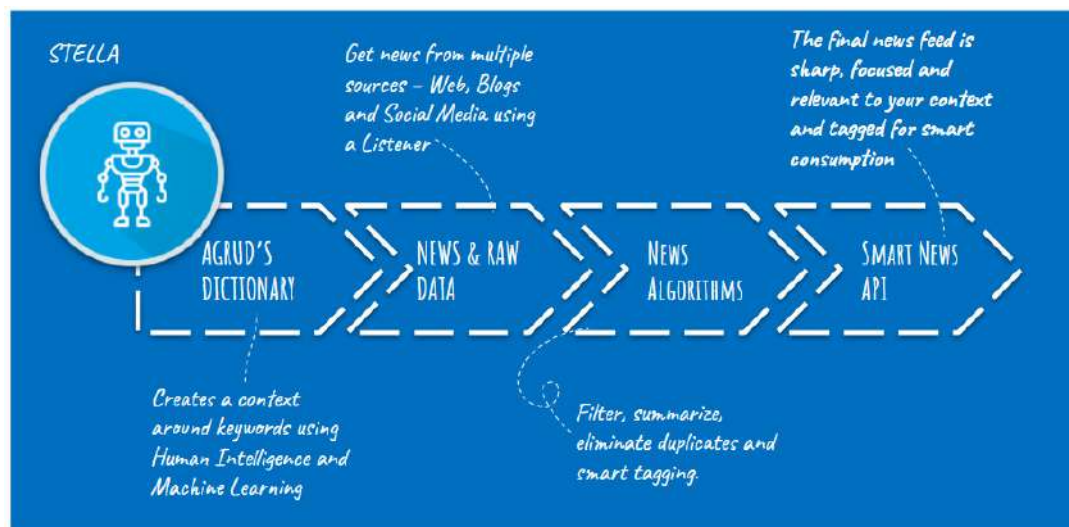
Credit Risk Management: The Solution

1 Fine-tune Stella to our client's needs, incorporating research of data-sets and the use of a lexicon to build a system that tags relevant data.

Stella, our Artificial Intelligence engine, is briefed on the needs of our client and the type of information that they're looking for. An exhaustive list of relevant nodes and contextual data is incorporated into building the perfect lexicon - or groups of keywords - that Stella has been ordered to capture and identify. Stella also comes with Natural Language Processing as standard and can rebuild structured and unstructured data for the client on the output end using Natural Language Generation.

2 Track and capture structured and unstructured data in real-time according to the rules set out by the client and Agrud Technologies. Curate the relevant information to suit the key analytic needs of the client, filtering websites and keywords and utilising summarisation technologies.

Not only is our Capture Engine modular, flexible and multi-rule based, but can analyse developments in both structured and unstructured data in real-time, allowing for precise and rapid transfer of information, what Stella captures is completely accurate and at the command of the client. Once content relevant to our client's needs is captured, it undergoes a rigorous set of robust smart-filters tailored towards the analytic needs of the client. These filters include checking the age of relevant data, whether there are duplicate sets of data out there, and ensuring that the data can be summarised effectively.

3 Analyse the sentiment of the chosen data, ensuring that negative sentiments are prioritised and highlighted for relevance and contextual accuracy.

Further stringent filters are placed on the lexicon, prioritising contextual data and words that suggest a positive, neutral or negative stance towards a client of the CRM department. We segregated words into one of the three areas utilising machine-learning based dictionaries and asked Stella to fetch a list of sentiments typically based around financial jargon used in the banking system. We applied this when gathering data about the bank's clients, focusing on negative sentiments that could indicate poor performance such as 'liquidation' or 'non-performing asset'. We also did this for words with positive and neutral connotations. Once relevant segregated sentiments were scored, we would run them through Stella's relevancy filter to ensure that the data was pertinent to the commercial banking industry only.

4 Turn the curated and filtered content into a flexible and portable newsfeed that is focused primarily on data efficiency.

All tagged information that is considered to be timely, reliable and relevant to the guidelines set out by our client is then finally analysed by Stella and generated for ease of access, this includes utilising Stella's Natural Language Generation technology: a powerful machine-learning capability, in order to simplify vast ranges of data into easy to read segments.

5 Generate an API for the feed, allowing for Social Media Platforms, Desktop Sites, Apps or Mailing Lists.

Once Stella has curated a feed of information relevant to our client, that feed then becomes theirs to place on Websites, Apps and more using an API given by Agrud Technologies. This allows for widespread sharing of information to other departments, partner firms, superiors or clients and customers.

How have our clients benefitted?

Through the implementation of our technology, the benefit of real-time notifications changes the face of Credit Risk Management, multiplying the resource-optimisation tenfold. With less expenditure towards human-based analytics in this area, the CRM department has time and money towards further securing engagement, maximising efficiency and reducing loss. Through the combination of all of these factors, the financial security of firms from levels such as Banks and Building Societies to Treasuries and even Governments can be ensured through smart-technology.
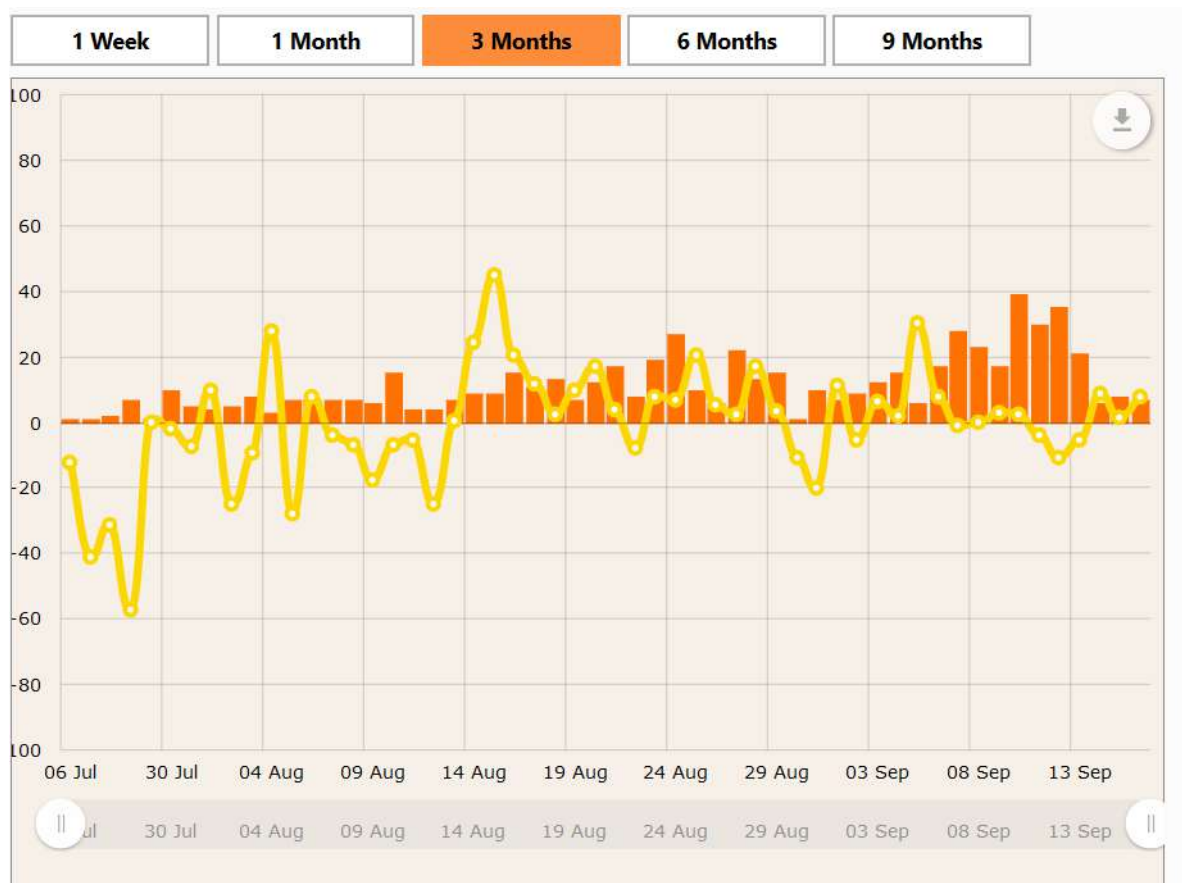
Here we can see the effect of the sentiment-identifying part of our process on the CRM department's analytics: this is the sentimental value of just one of their clients, with the bars representing volume of news, and the line representing sentiment. These charts, implemented via our API, allow the CRM department to effectively analyse and overview their client's fiscal behaviour over time-periods and in the news itself.

Our API even lets our client see behind the charts, providing a smart analysis of the news articles and datasets that contributed to the positive, neutral, or negative sentiment ranking of an article, this allows for more in-depth reports, analytics and monitoring processes, while also giving contextual accuracy to the numbers at hand. A relevance score is also included and can be mapped to chosen keywords for news efficiency, should the department need to monitor the behaviour of their clients surrounding a particular financial event, time period or location.

A perfect partner to the sentiment analysis and API systems, our Word Cloud allows yet another perspective on what people are saying about the clients that matter most to you. Digesting vast amounts of financial news and displaying the concepts that occur most frequently, Word Cloud helps you to stay up to date with a constantly changing environment at a glance.
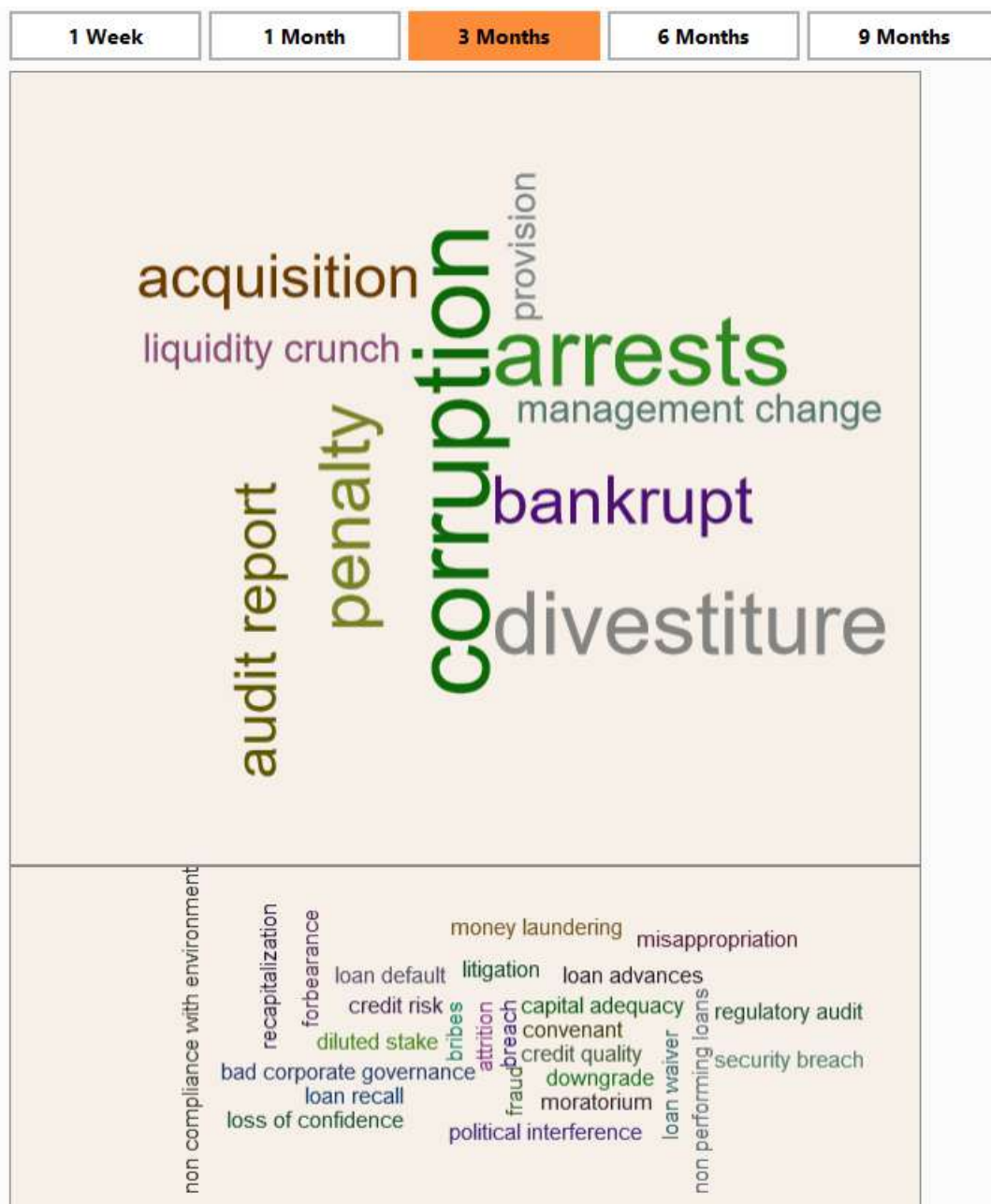
The Next Steps for AI

The future is here, and the future offers solutions.

Our client is just one of the many who can benefit from machine learning technology. This bank is already increasing in capital above its competitors due to the outsourcing of human-based activities to robotics. Furthermore, the margin for error is greatly decreased by utilising Artificial Intelligence. Salaries, error reports and deadlines are no longer worries for our client.

It's not just risk that we can assist with. Wealth Management, Digital Marketing, Education and Investment/Venture Capital are all industries in which our product is proven to work. Due to the nature of Natural Language Generating AI and Robotic Advisors working harder and longer than any employee, it is estimated that by 2020, 90% of Financial News will be automated. As a future-oriented organisation, we want to assist you in riding that wave of AI-enabled automation. It's also estimated that in the next 5 years, the amount of content on the internet will grow by as much as 500%. Soon, Stella will be the only way to accurately perceive the widest spectrum of relevant content online - she picks up on things that even Google Alerts misses out on due to her specially-structured architecture.

So if you want to keep on top of information or simply streamline the content that you curate for your company, whether they be in fintech or another industry, why don't you visit agrudtech.com and see just what we can do for you?