
















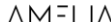
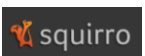


















# Natural language processing | Internal addendum

(This document is an internal companion addendum to the client-sharable primer on natural language processing.)

## Natural language processing solution providers





While **enterprise cloud providers** offer **sophisticated and continually improving** NLP application programming interfaces (APIs) that can be configured easily for custom solutions, **off-the-shelf product vendors** are offering **packaged solutions** suitable for standardized documents such as forms, agreements and contracts.

Deloitte Risk and Financial Advisory is extensively leveraging vendor solutions and open source tools (some listed below) to build custom NLP-based solutions for clients. In addition, Deloitte has several in-house NLP tools such as Blab, Convergence, Brainspace, Relativity, Vista, and ACADA to solve client challenges across risk management.




Capabilities	Entity extraction	Sentiment analysis	Language detection and translation	Topic or document classification	Natural language querying	Language generation	Text summarization
 <b>Software application providers (illustrative)</b> Offer on-premise and cloud-based solutions							
		 	 	 	 	 	
 <b>Cloud service providers</b> Offer plug and play NLP capabilities through APIs along with automated ML capabilities for NLP	 Text Analytics API		 Comprehend API	 Comprehend API	 CloudSearch		 Watson
	 Cloud Natural Language API			 Text Analytics API	 Azure Search		
 <b>Open Source tools</b> Provide flexibility to use custom NLP libraries and algorithms	 		 TextBlob	 topic modelling for humans			

## What are some interesting NLP offerings from our competitors?

Prominent vendors

	Deployed AI to review <b>lease accounting standards</b> . Using NLP to extract information and a human-in-the-loop to validate the results, the NLP system is three times more consistent and twice as efficient as previous humans-only teams.		Developed <b>Infosphere Regulatory Accelerator (IIRA)</b> , a regulatory on-ramp tool that leverages NLP to help businesses understand <b>requirements within regulations</b> and adapt to changes. Uses ML to map business terms to regulatory terms to identify connections between sections of regulations and business processes.
	Partnered with Narrative Science to build a natural language generation tool, <b>KYC report generation</b> to identify potentially high risk customers.		Leveraged NLP to <b>accelerate benchmarking of clinical guidelines</b> which resulted in a 60% decrease in time consumed to synthesize clinical guidelines.

## How can Deloitte Risk and Financial Advisory (RFA) help clients use NLP?

-  Educate clients about NLP capabilities and how it can help them with risk management
-  Help clients identify use cases and assist them to develop, implement, and manage NLP solutions
-  Help clients effectively mitigate risks introduced by NLP

## How to identify use cases that are suitable for NLP?

- 1 Does your client need to report to stakeholders periodically in a consistent format?
- 2 Does your client need to analyze lengthy documents like contracts and agreements to extract relevant information?
- 3 Does your client handle a lot of questions that require referencing numerous, complex policy documents?
- 4 Does your client need to monitor customer communications, employee communications, or social media posts to look for potential issues?



### Key contacts:

Feel free to reach out to the contacts below if you wish to know more, or to share interesting use cases.

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