SUCCESS STORIES - SUMMARY

Project Name	Client	Brief Description	Key Analyses
Text and speech recognition analytics	Financial Services Firm	**Developed & deployed NLP and speech recognition solutions** to reduce underwriting errors, track real-time compliance and perform root cause analysis of call complaints	

DEPLOYED TEXT RECOGNITION AND SPEECH RECOGNITION ANALYTICS

ABOUT THE CLIENT

Client is a **financial services company** that provides point-of-sale financing to consumers making purchases at stores across the U.S.

SITUATION

- Company's significant growth and geographic expansion resulted in **increase in application volume, operational activities and compliance requirements**. This resulted in an **increase in manpower in non-core activities and remediation cases**.

- Merilytics partnered with the client and deployed **NLP and speech recognition solutions** to reduce underwriting errors, track real-time compliance and perform root cause analysis of call complaints

VALUE ADDITION

- **Accurate Underwriting & Contracting**: Created NLP based solution that evaluates the accuracy of a legal document against statutory requirements and financial product terms and highlights any infractions using advanced text mining algorithms

- Leveraged **OCR and Encoding pattern recognition** ML algorithms (such as Textract and Tika) to convert documents & images to hierarchical list of elements and validated the same for discrepancies and summarized the insights, real-time on a Tableau dashboard

- **Call Quality Assurance**: Used **NLP tools to automate speech recognition** of call center activity to automatically transcribe the conversations for analytics. Evaluated compliance against mandatory disclosures and **UDAAP** (prevention of Unfair, Deceptive, Abusive Acts and Practices) compliance

- **Call activity root-cause Analysis:** Utilized **classification and clustering algorithms** on call transcripts to identify common issues raised by customers during their customer service calls
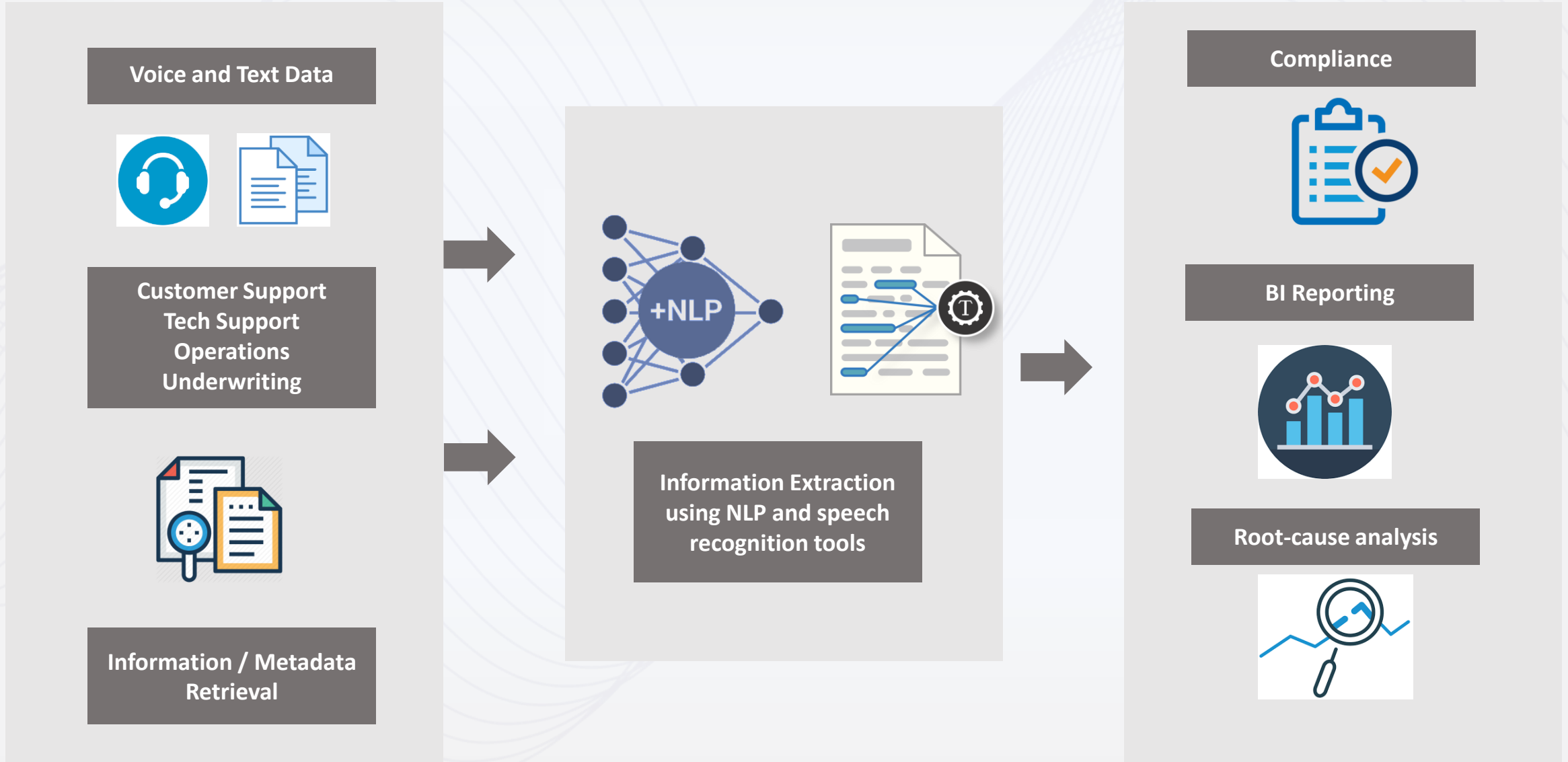
IMPACT

- **Reduced legal risk** from underwriting errors, violation of state requirements and UDAAP rules

- **Automated contract review process** that resulted in increased bandwidth for the compliance team to focus on other strategic initiatives

- **Streamlined call center workflow**, established standard operating procedures to improve adherence to best practices

NLP ENGINE

Our NLP engine highlights non-compliant incidents and key reasons for customer complaints by analyzing signed contracts and KPO audio files

Voice and Text Data

**Customer Support
Tech Support
Operations
Underwriting**

**Information / Metadata
Retrieval**

+NLP

**Information Extraction
using NLP and speech
recognition tools**

Compliance

BI Reporting

Root-cause analysis

UNDERWRITING ACCURACY & UDAAP COMPLIANCE

TEXT ANALYTICS – UNDERWRITING COMPLIANCE

Extract contract terms

- OCR and encoding recognition ML algorithms
- Extract text from pdf or image

Validate Compliance

- Benchmark extracted terms against statutory regulations and business standards.

Consolidate Infractions

- Map the infractions to product, servicing and contracting operations

Remediate contracts

- Fetch the right data from the database and recreate the contract

SPEECH RECOGNITION based ANALYTICS – CALL OPERATIONS

Call Centre Activity

- Customer & Tech support
- Collections
- Sales

Deploy NLP Tools

- Transcribe audio into text by speaker

UDAAP Compliance

- Evaluate for Unfair, Deceptive, Abusive Acts and Practices

Root Cause Analysis

- Cluster call activity into major root causes

CAPTURED THE CONTRACT AND PRICING TERMS COMPLIANCE RATE ON A REAL-TIME BASIS ON TABLEAU

METRICS SUMMARY

LEGEND

🟥 High Risk - Compliance < 90%   🟩 Low Risk - Compliance = 100%   🟧 Medium Risk - 90% <= Compliance <= 99%

Field	#Contracts	Percentage Sampled	June	May 2019	June 21, 2019	June 14, 2019	June 07, 2019	May 31, 2019
Version check	11,915	92.7%	99%	99%	100%	99%	99%	99%
ACH debit addendum	11,915	92.7%	100%	100%	100%	100%	100%	100%
Arbitration clause	11,915	92.7%	99%	99%	99%	99%	100%	99%
Termination clause	11,915	92.7%	100%	100%	100%	100%	100%	100%
Application number(from welcome letter)	11,915	92.7%	100%	100%	100%	100%	100%	100%
Cash plus term	11,915	92.7%	91%	92%	91%	91%	92%	91%
Cash price of property	11,915	92.7%	99%	99%	99%	99%	99%	99%
Cash price of property (from rental-purchase agreement)	11,915	92.7%	99%	99%	99%	99%	99%	99%
Cash price plus tax	11,915	92.7%	99%	99%	100%	99%	99%	99%
Cost of rental (interest plus initial payment)	11,915	92.7%	99%	99%	100%	99%	99%	99%
Down payment (under payment amount and schedule)	11,915	92.7%	100%	100%	100%	100%	100%	100%
EBO%	11,915	92.7%	100%	100%	100%	100%	100%	100%
Initial payment amount	11,915	92.7%	99%	99%	100%	100%	99%	100%
MAT	11,915	92.7%	100%	100%	100%	100%	100%	100%
Number of rental payments	11,915	92.7%	19%	9%	18%	19%	19%	16%
Payment frequency	11,915	92.7%	100%	100%	100%	100%	100%	100%
Payment frequency (from welcome letter)	11,915	92.7%	100%	100%	100%	100%	100%	100%
Payment frequency (under payment amount and schedule)	11,915	92.7%	100%	100%	100%	100%	100%	100%
Rental payment (from welcome letter)	11,915	92.7%	99%	99%	100%	99%	99%	99%
Rental payment (w/o tax)	11,915	92.7%	99%	99%	100%	99%	99%	99%
Rental payment with tax (under payment amount and schedule)	11,915	92.7%	99%	99%	100%	99%	99%	99%
Sales tax in down payment (under payment amount and schedule)	11,915	92.7%	100%	100%	100%	100%	100%	100%
Sales tax in rental payment	11,915	92.7%	99%	99%	100%	99%	99%	99%
Sales tax in rental payment (under payment amount and schedule)	11,915	92.7%	99%	99%	100%	99%	99%	99%
Total cost of ownership	11,915	92.7%	99%	99%	100%	99%	99%	99%
Total cost of ownership (minus initial payment)	11,915	92.7%	99%	99%	100%	99%	99%	99%

FULFILLMENT

19% of contracts in June complied on the number of rental payments metric leading to non-compliance rate of 81%