

ORACLE

AI Services – Financial Services

Industry Specific Use Cases

OCI AI Services, 2023

AI in Financial Services

Fraud Prevention

Detecting real-time fraud based on incoming transaction data

Know Your Customer

Extract data from identity documents, such as driver licenses or passports, to verify the identity of individuals

Customer Support Automation

Automatically triage and route tickets to the right teams

Document Processing

Automatically extract information from any type of document

Call-Center Analytics

Extract actionable business insights from recorded call-center conversations

Meeting transcription

Create an accurate & searchable transcription database of meetings in your organization

Oracle AI

Applications

AI Services



Digital Assistant



Speech



Language



Vision



Document Understanding



Anomaly Detection



Forecasting

Machine Learning Services

Advanced GPU infrastructure

Data

Machine Learning Services from Oracle

Applications

AI Services

Machine Learning Services



Data Science



**ML in Oracle
Database**



Heatwave ML



Data Labeling

Advanced GPU infrastructure

Data

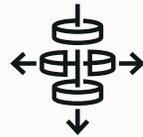
Benefits of OCI AI Services

AI for everyone



An AI starting point, even without data science experience

Prebuilt for enterprise requirements



Prebuilt models trained on industry-derived data

Optimized for use cases across finance, manufacturing, and more

Built-in insight highways into your SaaS applications with Oracle NetSuite, Fusion, and custom apps

Customizable for your needs



Tailor your AI models without data science experience

Save costs by training AI models already on OCI

Best-in class support



White glove treatment
Data scientists on staff, dedicated to ensuring your organization's success

Pricing to support AI experimentation

Fraud Prevention

A detailed use case

Detecting real-time fraud based on incoming transaction data

- Improve customer service by reducing false positive alerts
- Prioritize investigations
- Prevent revenue loss



Approaching the problem

Detection

- Fraud Detection happens in real time and requires analyzing real time feeds and events-based actions
- Card issuer is looking to identify fraud in real time as well as periodically based on the set of transactions
- Reports and dashboards are created to provide detail and summary information

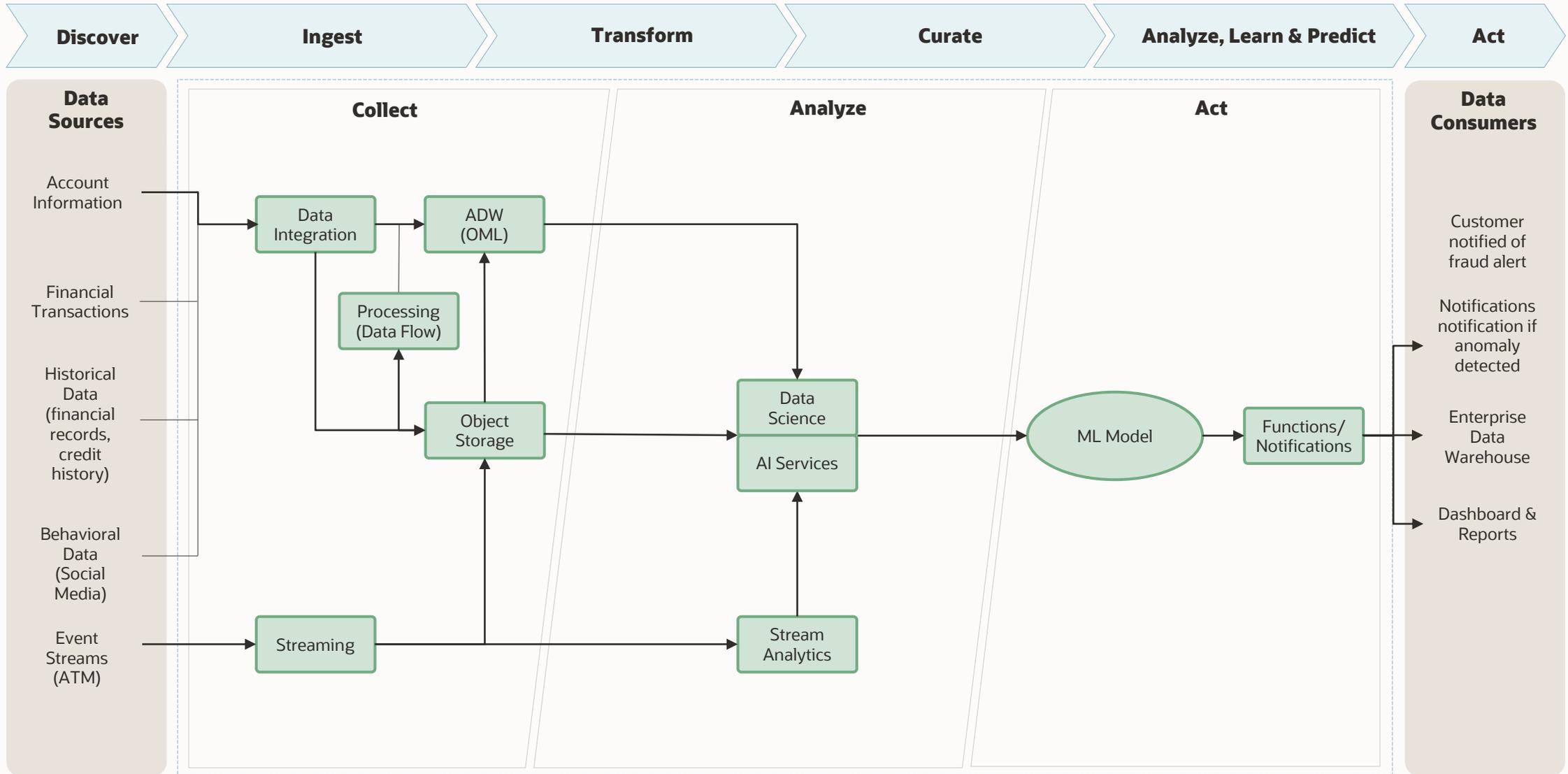
Data Management

- Data ingested in real time using streaming services
- Real-time streaming platform and event ingestion service must be capable of receiving and processing millions of events per second

Analytics

- Use Streaming Analytics to detect suspicious transactions. Events can be generated for actions which could be emailed to consumer or other notifications
- Results can also be persisted in operational stores or other persistence mechanisms and then reported and analyzed through a serving data layer and presented using analytics tools
- Anomaly detection AI can be used for identifying anomalous events in real-time data including fraudulent amount/merchant/type of transaction/location etc. Classification AI can be used for frauds in accounts and type of transactions.

Fraud Prevention



Know Your Customer Verification

Extract data from identity documents, such as driver licenses or passports, to verify the identity of individuals

- Improve customer experience by reducing manual work
- Comply with KYC regulations
- Prioritize investigations



Approaching the problem



KYC Data Collection

- Banks often use various forms of documents that are manually submitted or mailed to prove the identity of an individual. This includes proof of name (Passport, Driver ID, Visa) and proof of address (utilities bill, lease agreement)
- Banks are looking to say compliant with KYC regulations to reduce fraud



Data extraction

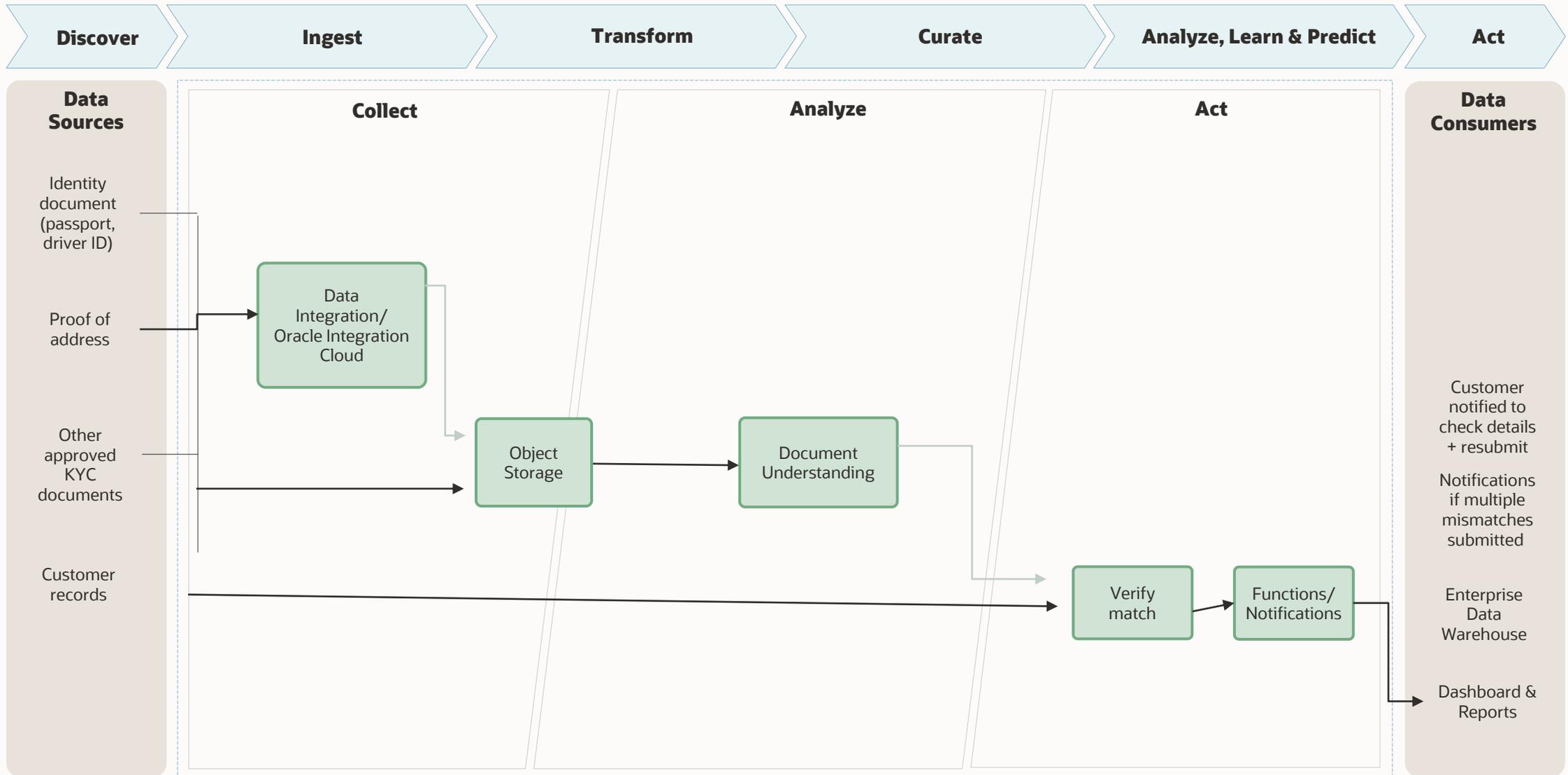
- Extract name from driver licenses or passports. This could ensure that financial institutions are dealing with legitimate customers and to comply with KYC regulations.
- Extract expiration date or address from identity documents to detect fraudulent or fake documents. This could be used by financial institutions to protect themselves and their customers from fraud and other illegal activities.



Analytics

- Use Streaming Analytics to detect suspicious transactions. Events can be generated for actions which could be emailed to consumer or other notifications
- Results can also be persisted in operational stores. This could make it easier for financial institutions to store and manage information about their customers and could reduce the risk of errors.

Know Your Customer Verification



Customer Support Automation

A detailed use case – Automating customer support ticket assignment



Automatically triage and route tickets to the right teams

- Categorize support tickets based on the request content
- Automatically assign to right teams based on identified categories
- Automatically extract key entities such as order number, product name, category to assist support personnel

Approaching the problem



Train a custom Text Classification Model

- Using the support tickets that were processed earlier, prepare a train a dataset
- Create and train a custom text classification model in OCI Language
- Create and train custom NER model to extract entities from support request



Process new tickets

- Use created model and its endpoint to predict the category of ticket
- Use custom NER model to extract entities from text



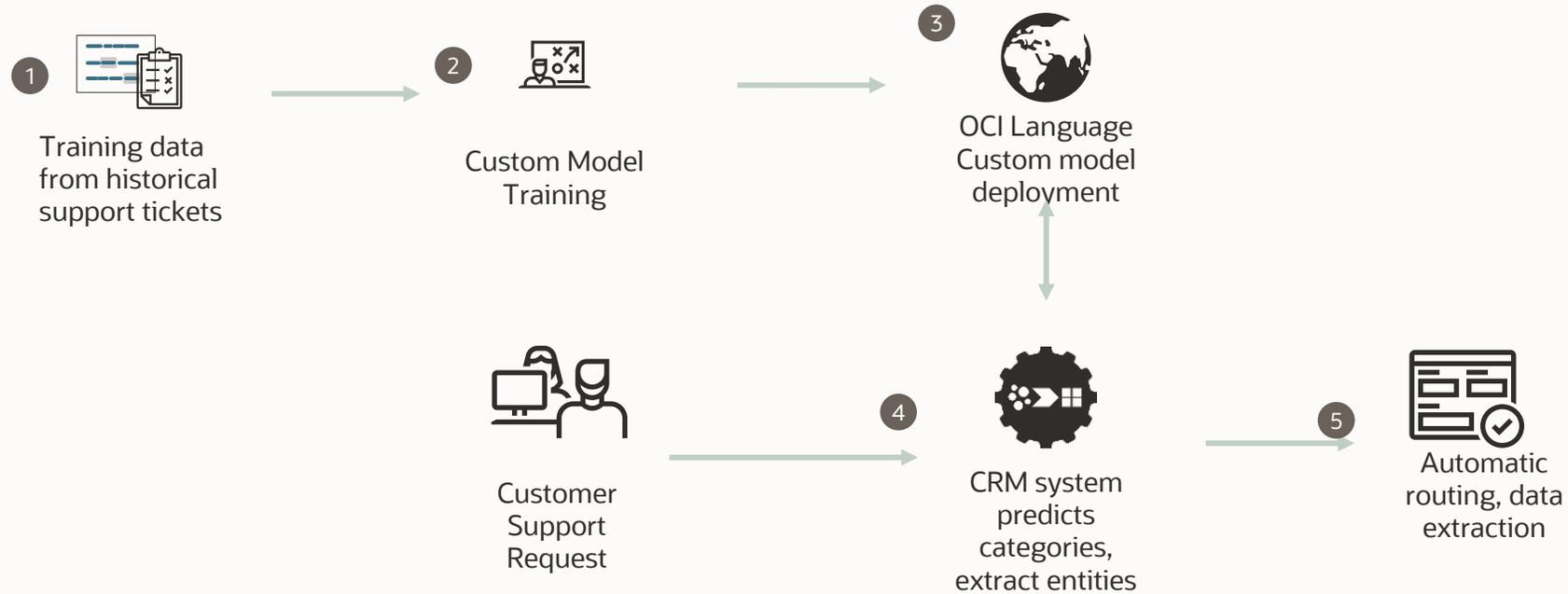
Automate Workflows

- Use OCI Language API to predict support ticket category and automatically assign to right teams and fill the forms (such as product name, region, etc.) from support request



Customer Support Automation

Sample architecture



- 1 Training data prepared from previous support requests
- 2 Custom text classification and named entity recognition (NER) models are trained in OCI Language
- 3 Custom models are deployed with model endpoints
- 4 CRM systems such as Siebel, Oracle B2B or B2C automatically categorizes the support request and extract entities such as product name
- 5 CRM uses predicted categories and extracted entities to automate the support ticket assignment



Document Processing

Automatically extract information from any type of document

- Speed up processing of documents
- Reduce processing errors
- Automate processes which were previously done manually (expense reports, applications, purchase requests etc.)
- Digitize your documents



Approaching the problem



Upload documents

- Documents are uploaded to the cloud for processing.
- Scanned documents are also supported.



Data extraction

- Extract key/values from the uploaded documents.
- Extract text from scanned documents.
- Save the extracted data in structured format.
- Feed the extracted data to your application in a structured format to automate your processes.



AI that works for you

- Using the Data-Labeling service, you can now use visual methods to train a custom AI model which will be tuned to understand your specific documents for improved results.

Document Processing

Data Sources

PDFs, Scanned documents, identity documents, etc.

Store



Object Storage

1. Store documents in object storage for further processing

Extract



Document Understanding

2. Extract key/values, tables & text in structured format



Data Labeling

Optionally train a custom model for a deeper understanding of your specific documents

Structure



ADW

3. The extracted data is stored in structured format

Application



Application

5. Your application reads the structured data and performs the required operations

Call-Center Analytics

Extract actionable business insights from recorded call-center conversations

- Create accurate transcriptions conversations
- Identify positive and negative sentiment trends
- Identify the aspects customers are most happy and upset about
- Identify potential staff training opportunities
- Generate subtitles for videos and conference calls
- Filter profanity & identify PII

Approaching the problem



Data collection

- The call-center telephony system creates audio files.
- The audio files are uploaded to the cloud for processing



Data extraction

- Oracle Integration Cloud is used to orchestrate the process.
- Speech AI service creates a high-quality, accurate, punctuated & timestamped transcription from the audio data.
- Language AI service extract meaningful insights such as sentiment, key-words, entities (product names, identifiers, organizations, dates etc.).



Visualize the results

- Oracle Analytics Cloud dashboards are used to bring the data to life and highlight the actionable business insights extracted from the documents.



Call-Center Analytics

Data Sources

- Audio files from:**
- Telephony system
 - Voice messages
 - Online meetings
 - Videos
 - Radio communications

Store



Object Storage

1. Store audio files in object storage for further processing

Extract



Oracle Integration Cloud

2. OCI orchestrates the process



Speech AI

3. Create an accurate transcription of the conversations



Language AI

4. Extract meaningful insights like sentiment, key phrases & entities

Ingest



ADW

5. The extracted data is stored in structured format

Analyze & Learn



Analytics

6. Visualize actionable business insights

Meeting transcription

Make the meetings in your organization searchable & accessible

- Create accurate transcriptions of the conversation
- Identify positive and negative sentiment trends
- Explore the most discussed topics
- Create a searchable index allowing for easy retrieval of information shared at meetings
- Create subtitle files to improve the accessibility of shared conversations



Approaching the problem



Data collection

- Meetings are recorded in video or audio format.
- The files are uploaded to the cloud for processing



Data extraction

- Oracle Integration Cloud is used to orchestrate the process.
- Speech AI service creates a high-quality, accurate, punctuated & timestamped transcription from the audio data.
- Language AI service extract meaningful insights such as sentiment, key-words, entities (product names, identifiers, organizations, dates etc.).



Index, Search & Learn

- The extracted content and insights are sent to OpenSearch to create a searchable index.
- Oracle Analytics Cloud is used to visualize the insights extracted from the audio.

Meeting Transcription

Data Sources



Store

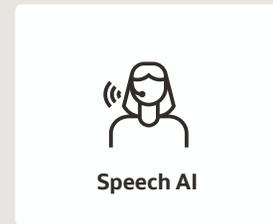


1. Store audio files in object storage for further processing

Extract



2. OCI orchestrates the process



3. Create an accurate transcription of the conversations

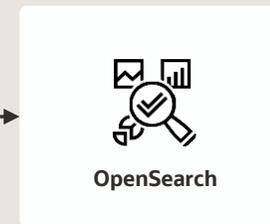


4. Extract meaningful insights like sentiment, key phrases & entities

Ingest & Index



5. The extracted data is stored in structured format



6. OpenSearch creates a searchable index for all conversations

Analyze & Learn



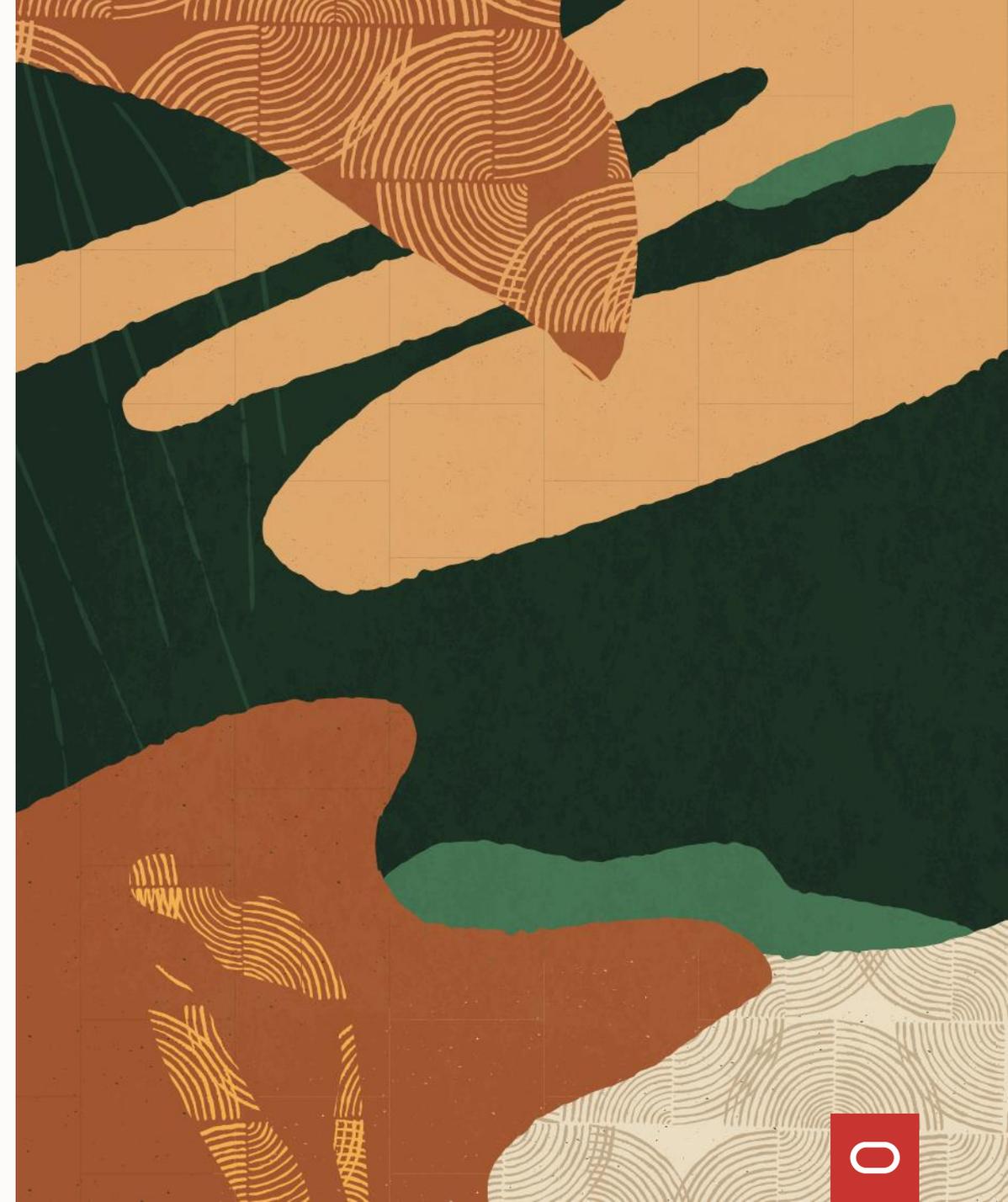
7. Visualize conversations insights

Thank you



AI Services

Talk to us on [Slack](#)



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