



# Quadrant AI Capabilities



# Our Service Offerings



## Cloud Operations

- Design and Development of Cloud Native Services
- Cloud Migrations
- Cloud Observability
- Design and Implementation of monitoring services
- Cloud Security Implementation
- BOTs



## AI & ML

- Generative AI / LLMs
- AI and ML Model Training
- Natural Language Processing (NLP) Services
- Optical Character Recognition (OCR)
- Imaging (Image & Video)
- Speech to Text & Text to Speech
- Cloud based AI Solutions (MLOps)
- AI Model Assessment & Prompt Engineering



## Quality Assurance

- Quality Driven Development
- Continuous Integration
- Test Automation
- Big Data & Analytics Validation
- SOA Testing & Service Virtualization
- E2E Customer Experience Testing



## Data and Analytics

- Data Migration
- Telemetry Data Curation
- DWH Architecture
- Data Pipeline Development
- Building Analytical Data Models
- Reporting
- Data Mining



## Power Platform

- Power BI
- Power Apps
- Power Automate
- Microsoft CoPilot Studio



## Digital Modernization

- Web application development and support
- Mobile application development and support
- Content management systems
- Accessibility
- UI/UX development



## DevSECOps

- 24\*7 Support with In-depth Technical Support
- Site Reliability Engineering
- Automation and Scripting
- CI/CD Implementation.
- Buildouts.



## Infra Managed Services

- End User Computing Services
- Infrastructure Maintenance
- Data Centre Management
- Enterprise Systems Management
- Converged Network
- Service Desk and Management
- Application Management
- Managed Security



## Cybersecurity

- Risk Assessments
- Monitoring/SOCs/TPRM Operations
- Regulatory Compliance
- Identity and Access Management
- Governance, Configuration Management and Engineering

# Quadrant – AI Capabilities

AI

GenAI

Generative AI

- LLMs, Diffusion Models



Computer Vision

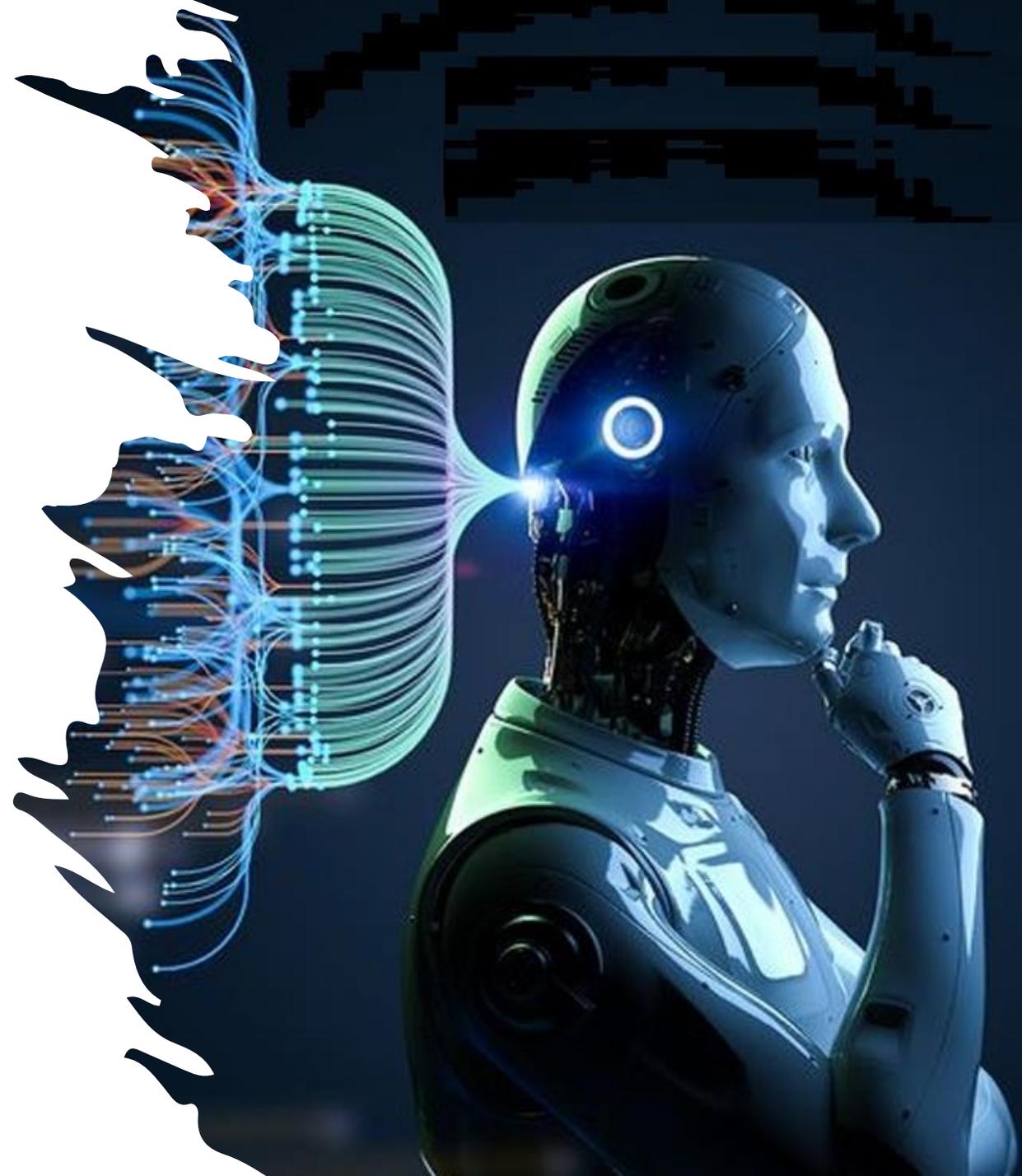
- OCR, Imaging, Video Analytics



Speech to Text & Text to Speech



ML Models and MLOps



# Quadrant Generative AI

## Reasoning

Reason with any unstructured data to generate insights

## Chatbots

Let chatbots handle your customer enquiries of your employees

## Information retrieval

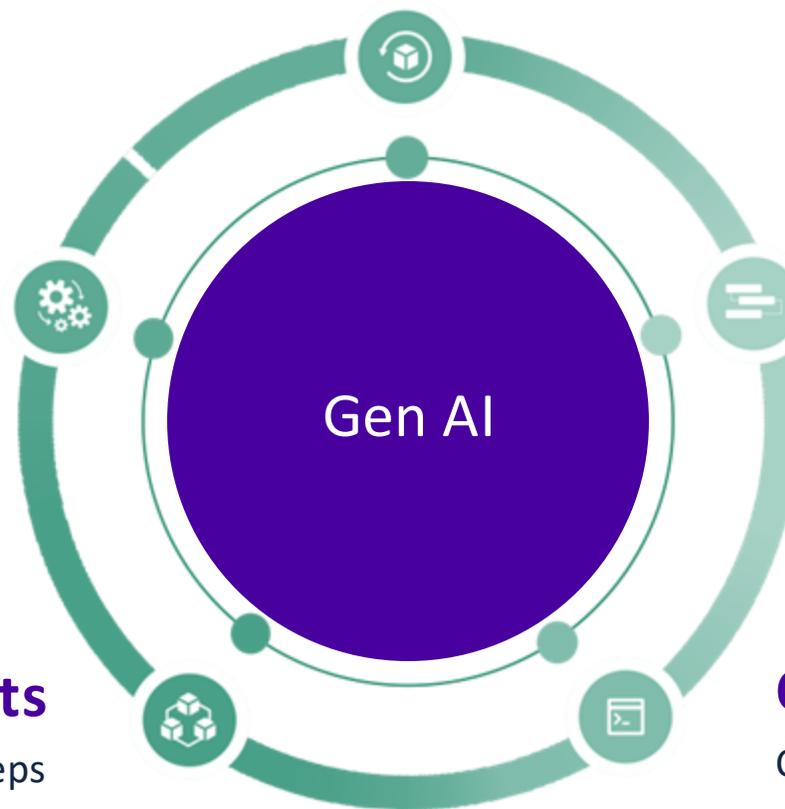
Converse with thousands of documents. Structured data

## Autonomous Agents

Let agents decide the decision steps and execute it for you

## Content Creation

Create contents with a click and prompt as part of your lines of businesses



# Quadrant's - Gen AI Layers

Modules that are instantly available to put together to create any innovative Gen AI solutions

## Front-end

### Monitoring Dashboards

Real-time analytics platforms that provide insights into model performance, usage, and health, facilitating informed decision-making.

### Chatbots

Automated conversational agents that handle user queries or tasks, powered by LLMs to provide natural, efficient interactions.

### Intelligent Search

Advanced search algorithms powered by AI, offering contextual and semantic understanding to retrieve highly relevant results.

### Autonomous workflows

Self-managing processes that leverage AI to automate decision-making and task execution, enhancing operational efficiency.

## Middle-end

### Prompt Libraries

Curated sets of queries or commands designed to guide Large Language Models in generating specific, targeted outputs.

### Vector Databases

Specialized storage systems for high-dimensional vectors, enabling fast retrieval and similarity checks to enhance model performance.

### Auto fine-tuning

Automated processes for adapting pre-trained models to specific tasks, improving accuracy and reducing time-to-value.

### Agent creation

Deploy intelligent agents, often driven by LLMs, to automate specific tasks or interactions within enterprise systems.

## Back-end

### Foundation Models

Core algorithms trained on extensive datasets for generalized tasks.

### Document Parsers

Specialized models for understanding the structure and layout of documents.

### Multi-Modal models

These models are capable of processing and integrating multiple types of data to perform more complex tasks.

### LLM Apps & Ops

Centralizes the deployment and operational management of Large Language Models across enterprise workflows.

# Computer Vision

Quadrant offers robust computer vision capabilities, including image classification, object detection, and facial recognition. Their solutions also encompass advanced applications like image segmentation, OCR, and scene understanding.

**Optical Character Recognition (OCR)**  
Converting text in images or scanned documents into machine-readable text



**Object Detection**  
Cornerstone for scene understanding and contour extraction.



**Pattern Detection**  
Discerns intricate visual patterns.



**Feature Matching**  
Supports panoramic photo stitching and robotics visual odometry.



**Image Segmentation**  
Precise identification and isolation of specific objects or regions.



**Image Classification**  
Categorization of visual data into predefined classes.

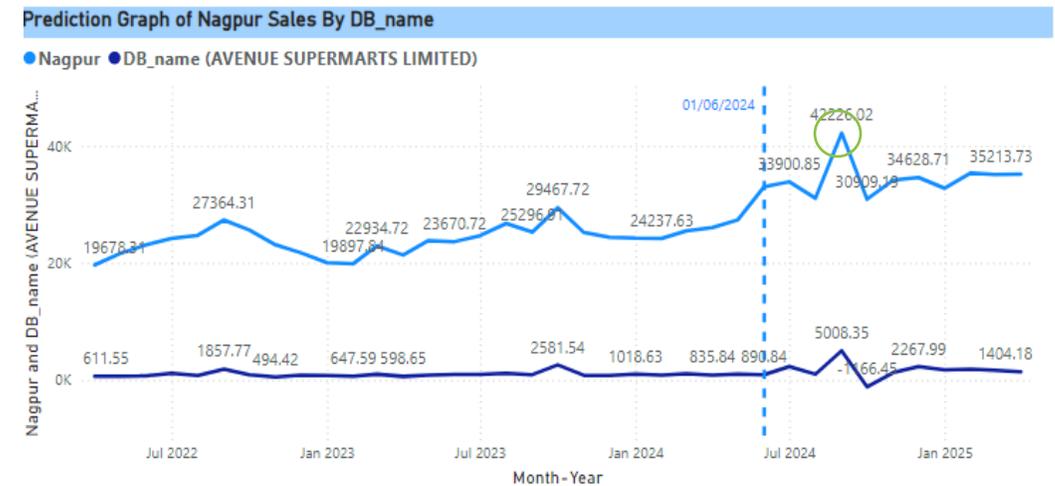
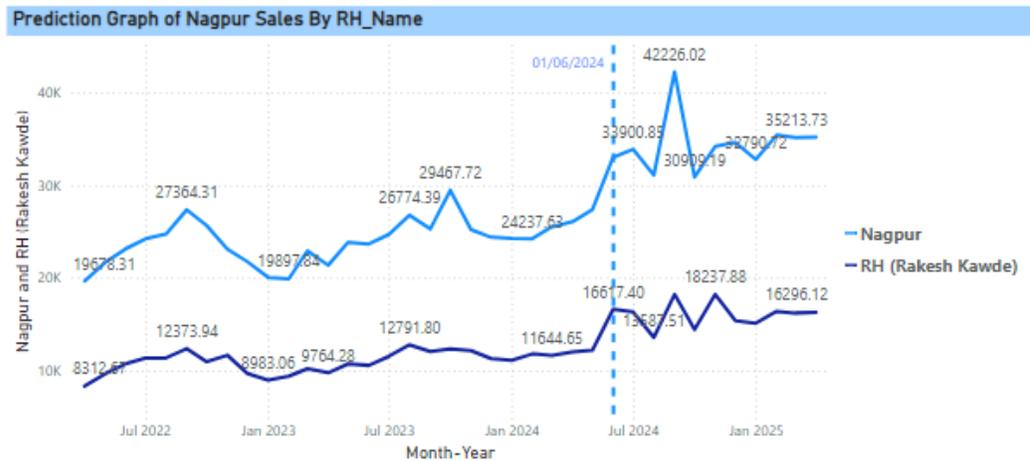
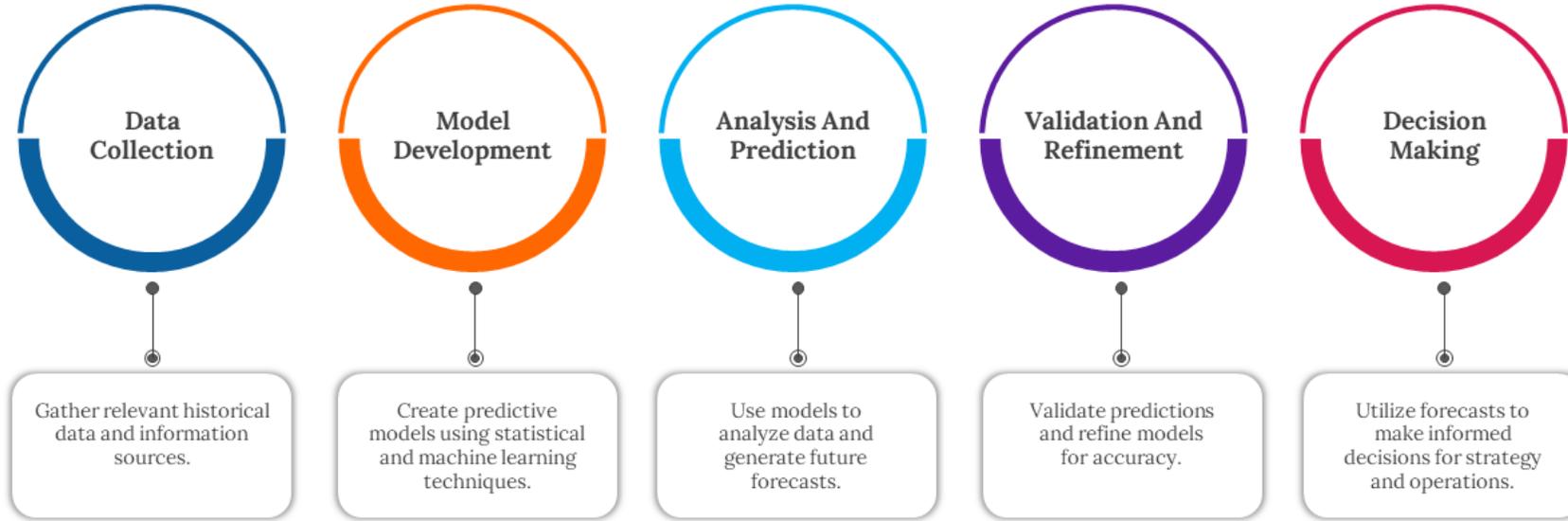


**Facial Recognition**  
Enhances security systems and user authentication.



# Prediction Insights using ML Models

Quadrant has extensive experience in building predictive analytical models using machine learning techniques. This involves leveraging data to create accurate and efficient models for various applications



# ML Models :Quadrant Approach for Operationalizing ML Models :

## From experimentation to implementation

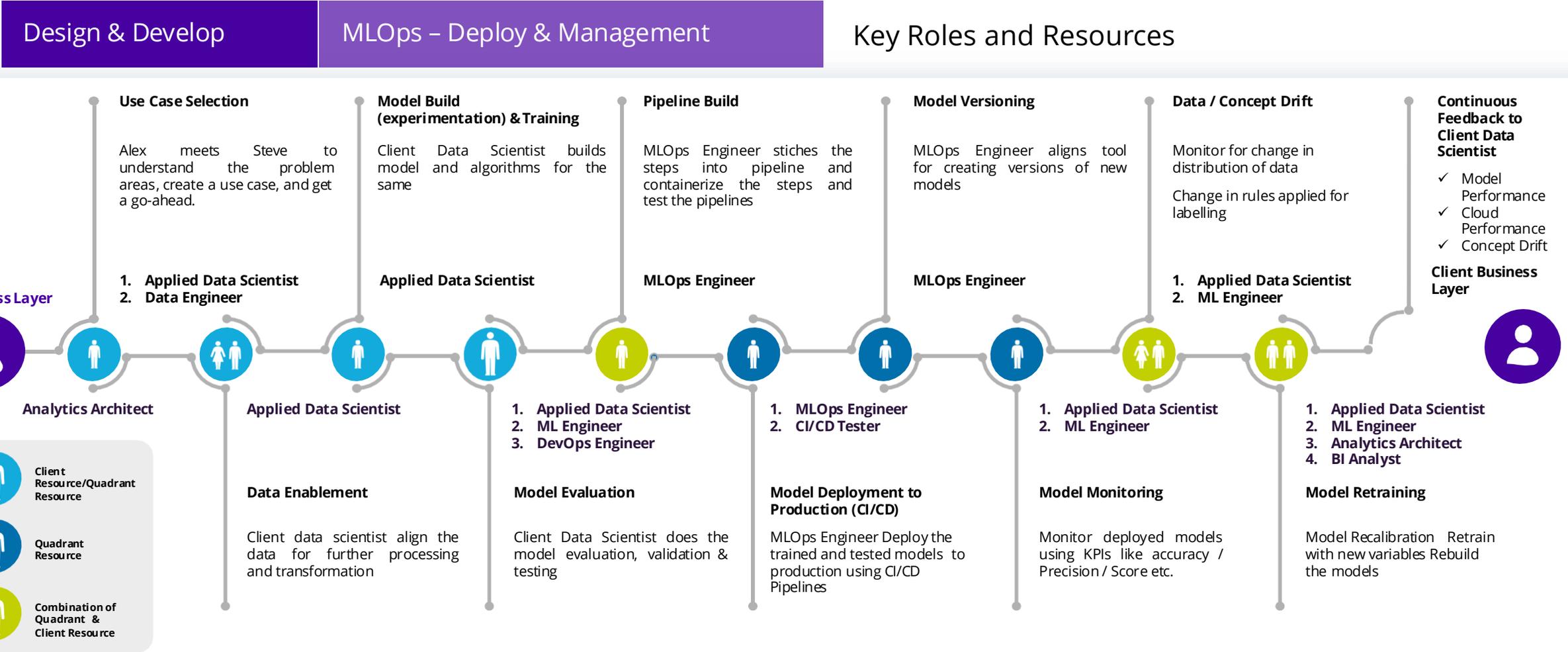
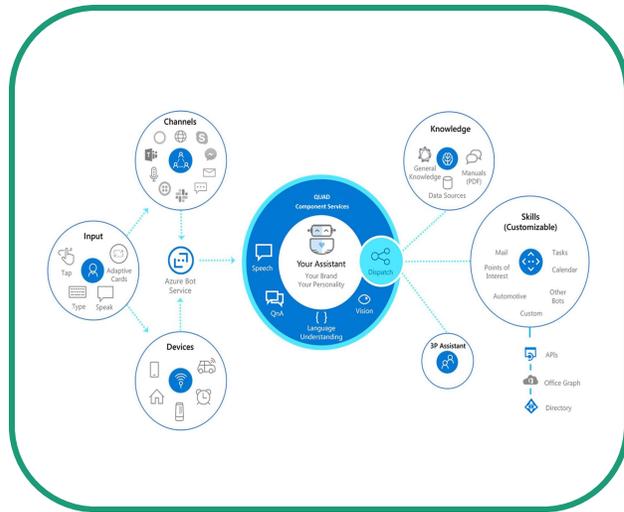


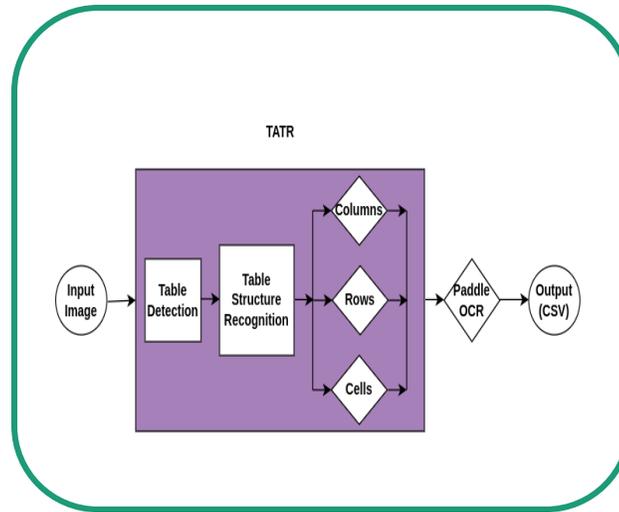
Illustration of Operating Model

# AI Accelerators

## Unified BOT/Agent Framework



## Quadrant OCR Framework



## NLP Descriptive Analytics

**Query the Data**

Enter your query:

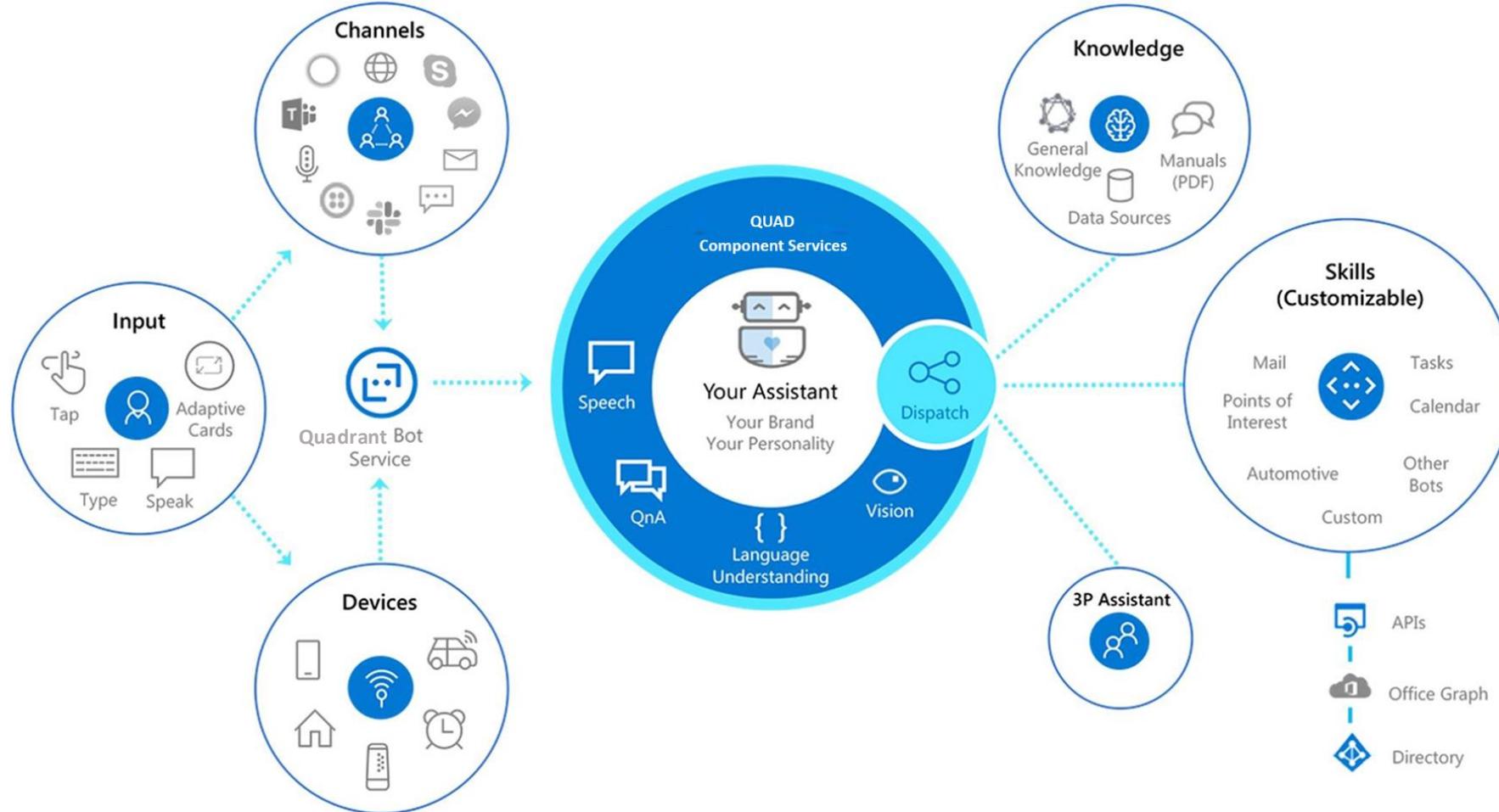
what are the top 5 ProductName and its values

**LLM Output**

ProductName	Cases	Value	Value In Cr	Tonnage	KG
Halke Fulke Plain Wafers 15Gm(2.7kgC/S)5	898,111.9444	733,786,301.8	73.3786	2,424.9023	2,424,902
Halke Fulke Plain Wafers 35Gm(4.20kgC/S)	671,746.925	702,940,534.01	70.2941	2,821.3371	2,821,337.1
Lite Chiweda 25 Gm (9.00 Kg C/S) Dom 5	390,761.8917	597,993,952.32	59.7994	3,516.857	3,516,857.1
Moong Dal 17 Gm (9.588 Kg C/S) Dom MRP-5	251,255.7589	587,544,233.12	58.7544	2,407.0302	2,407,030.11
Soya Sticks 20 Gm (4.8 KG C/S)Dom MRP-5	500,870.8583	519,425,066.49	51.9425	2,404.1801	2,404,180

# Quadrant Unified BOT Framework

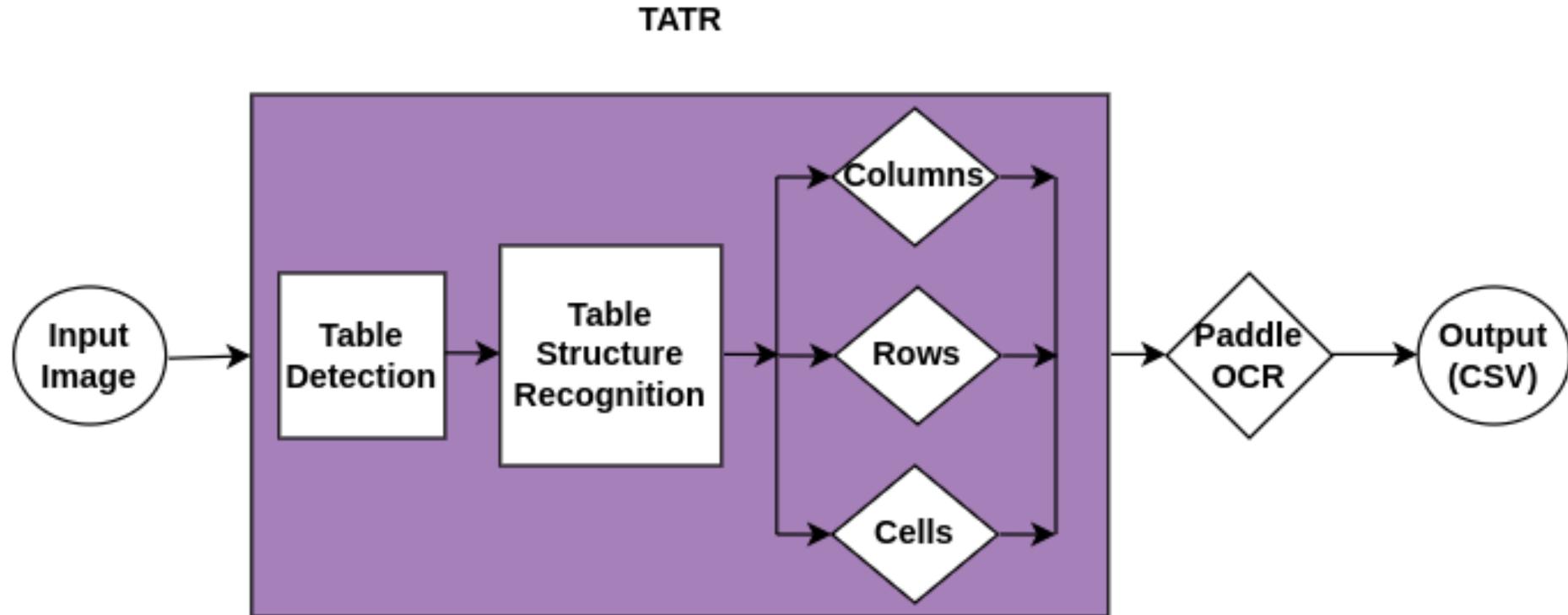
Quadrant Bot platform uses the latest tools and techniques to design and deploy chatbots that can interact with customers naturally and intuitively, improving customer satisfaction and loyalty.



- ✓ Supports Cloud and On-Premise environment
- ✓ Flexible platform to support Open source and paid LLM's
- ✓ Quick time to market
- ✓ Supports multilingual
- ✓ Multiple interfaces  
Mobile, web, WhatsApp  
etc

# Quadrant OCR Framework

Regular Paddle OCR struggled to extract all rows and columns from tabular data in PDF documents. Quadrant addressed this challenge by building a Quadrant OCR framework with TATR (Table Transformer) on top of Paddle OCR, which significantly improved the extraction accuracy. This enhancement achieved an impressive 93% accuracy in extracting complex tabular data, effectively overcoming the limitations of the standard OCR approach.



# Quadrant Descriptive Analytics Platform with Generative AI / LLMs

Quadrant's advanced analytics platforms allow it to leverage a Large Language Model (LLM) for descriptive analytics, enabling detailed and insightful outputs from data queries. This enhancement provides users with a deeper, more comprehensive understanding of their data.

## Query the Data

Enter your query:

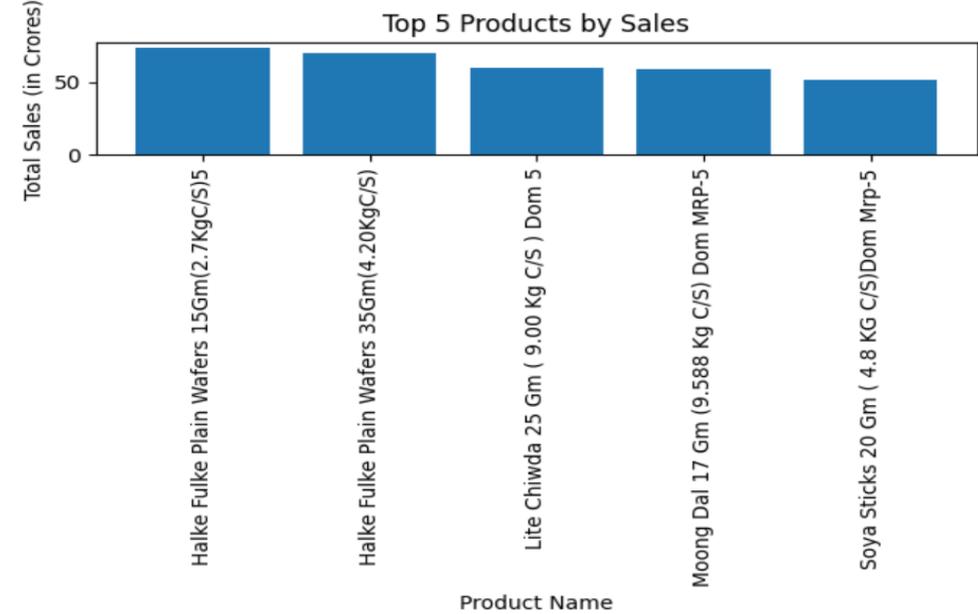
what are the top 5 ProductName and its values

Submit

## LLM Output

ProductName	Cases	Value	Value In Cr	Tonnage	KG
Halke Fulke Plain Wafers 15Gm(2.7KgC/S)5	898,111.9444	733,786,301.8	73.3786	2,424.9023	2,424,902
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Moong Dal 17 Gm (9.588 Kg C/S) Dom MRP-5	251,255.7589	587,544,233.12	58.7544	2,407.0302	2,407,030.16
Soya Sticks 20 Gm ( 4.8 KG C/S)Dom MRP-5	500,870.8583	519,425,066.49	51.9425	2,404.1801	2,404,180

## Chart Image



# Enhancing Narcotics Investigations: Quadrant's AI-Powered BOT for Real-Time Officer Assistance

The Telangana Narcotics Department combats drug-related crimes and targets trafficking networks, ensuring public safety.

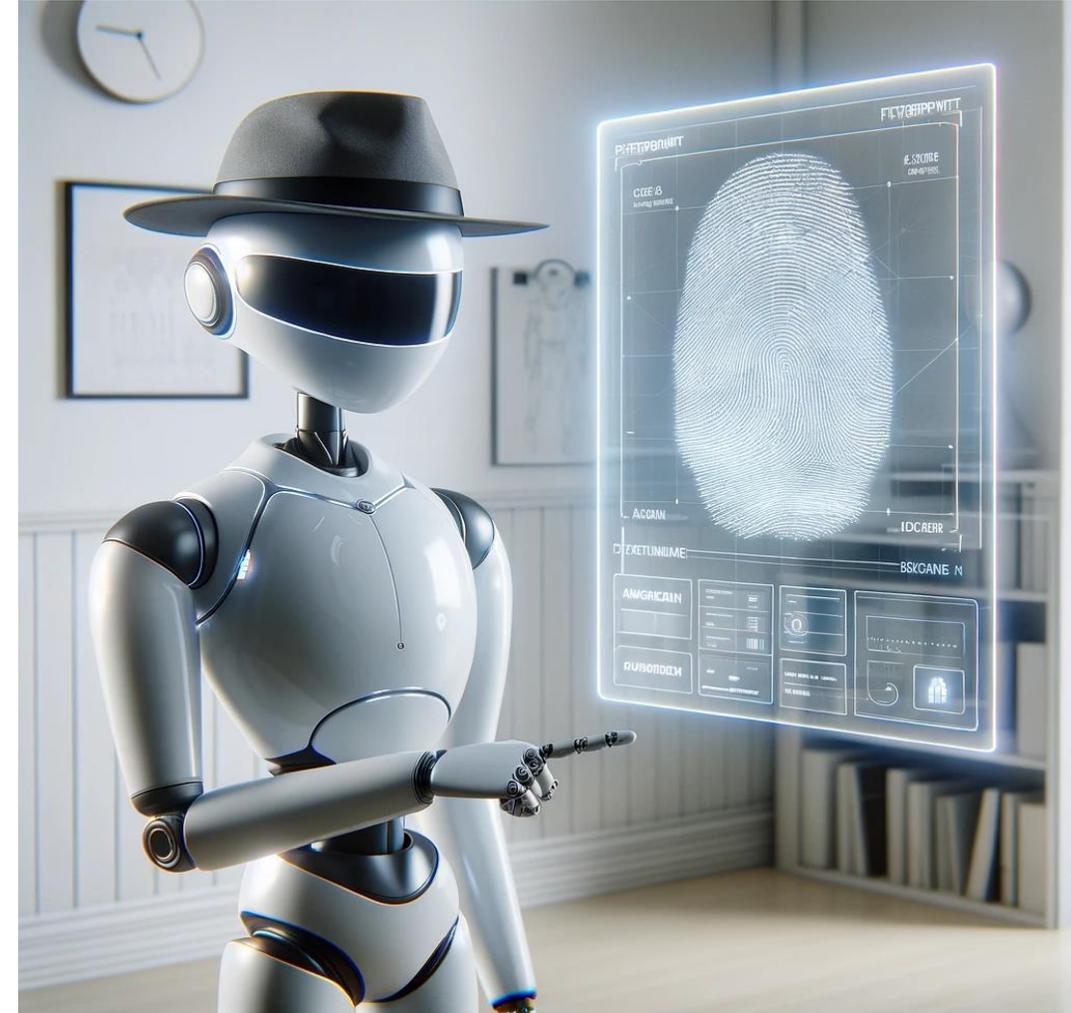
## Problem Statement:

The Telangana State Police Narcotics Department faces challenges in investigating drug-related offenses, including insufficient training, poor evidence collection, legal complexities, FIR inaccuracies, and struggles during cross-examination, leading to weak cases and ineffective prosecutions.

**Solution:** Quadrant built a [BOT platform](#) to assist officers in addressing queries related to narcotics investigations. Quadrant will index publicly available content from the NCB Act, along with internal processes and case details. This platform empowers officers with quick, accurate information, improving decision-making and the overall effectiveness of investigations.

## Benefits:

- **Faster Information Access** from anywhere.
- **Improves** decision making **60%**
- **Improves FIR process** by **30%**



# Apollo's AI-Powered Ask Me Bot: Streamlining Cancer Information and Appointment Booking with Quadrant's BoT framework

Apollo Hospitals is a leading healthcare provider in India, known for its world-class medical services and cutting-edge technology. It offers comprehensive care across various specialties, setting high standards in patient care and medical excellence.

## Problem Statement:

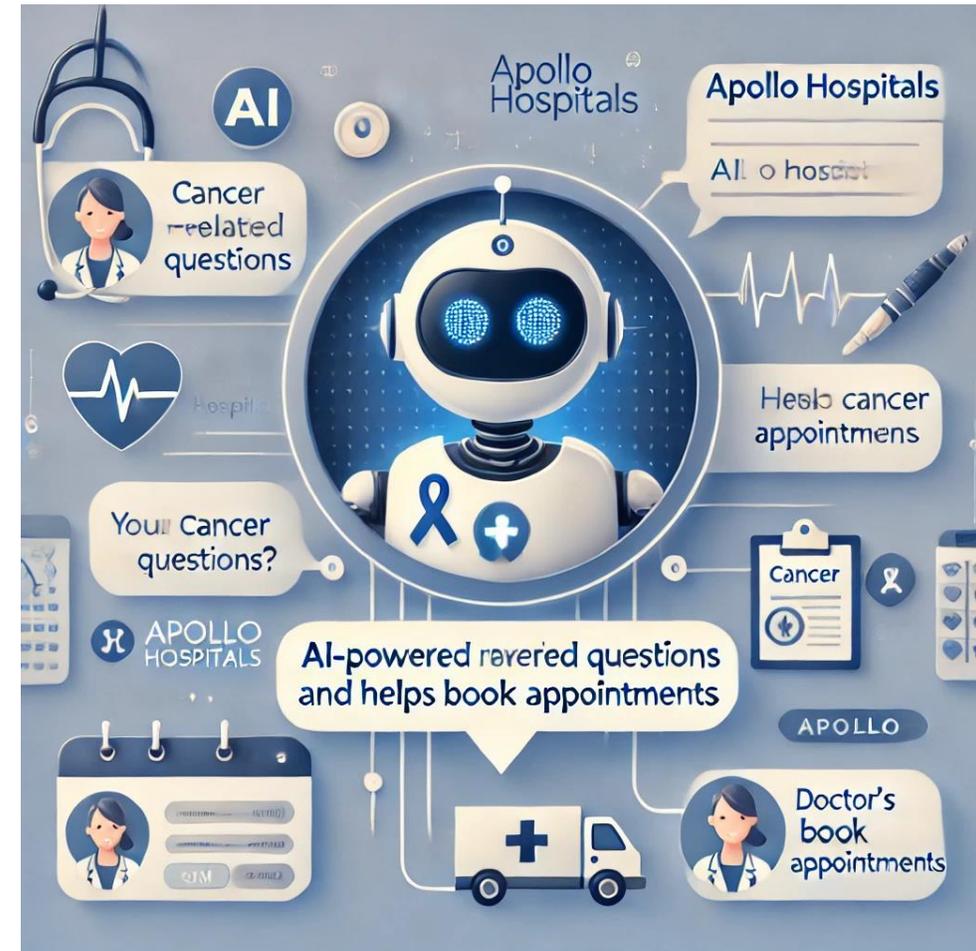
Apollo Hospitals seeks to improve customer access to cancer-related information and streamline the appointment booking process. They aim to enable customers to easily book appointments using natural language, across various locations, with appropriate doctor selection based on specific needs.

## Solution:

Quadrant developed an "Ask Me" bot using the [Quadrant Bot Framework](#) that answers all cancer-related queries by leveraging data from Apollo's blogs. Additionally, the bot enables customers to easily book appointments through natural language processing (NLP), seamlessly integrating with Apollo's CRM systems for a streamlined experience.

## Benefits:

- **Reduction of 30% call volume** to customer care
- Appointment booking **experience is improved by 25%**



# A voice bot that assists citizens in selecting the right category and subcategory in property registration process.

The CEG (Centre for e-Governance) of Karnataka Government drives e-governance initiatives to enhance government services' efficiency, transparency, and accessibility.

## Problem Statement:

The Karnataka government is enhancing the Kaveri portal ( Property Registration portal) with a voice bot that guides citizens through the property registration process, helping them select the right category and subcategory. Supporting Kannada and English, the chatbot ensures a seamless and user-friendly experience for all users.

## Solution:

Quadrant leveraged [Quadrant Bot Framework](#) to enhance the Kaveri portal. The platform indexes public land act content and internal documentation, enabling accurate query responses to help users choose the correct category and subcategory in the registration process.

## Benefits:

- Improved **ease of use** for citizens
- **Zero Brokers / Middlemen**
- **20% Faster** Registration process
- **17% Increase** in Revenue



# AI-Driven Insights: Quadrant's NLP-Based Analytics Platform for Seamless Survey Data Interpretation

Microsoft is a global technology leader known for its software, services, and solutions that empower individuals and businesses worldwide.

## Problem Statement:

Microsoft Customer Experience team collects survey data on product performance, having numerical and free text responses, from their customers. Analyzing this data and creating reports used to take nearly three days, with additional data requests further extending the timeline. This lengthy process highlighted the need for a more efficient solution

## Solution:

Quadrant built a robust NLP-based [descriptive analytics platform](#). By leveraging a combination of search techniques, such as semantic, vector, and hybrid searches, queries are mapped to the most relevant content from the indexed data. The management team can upload survey data files and ask questions in natural language to gain valuable insights.

## Benefits:

- Report preparation time reduced **from 3 days to 4hrs**
- Crisp and targeted **insights in Natural Language**



# Comprehensive Sales Forecasting and Strategic Insights through Predictive Analytics

Haldiram's is a renowned Indian snack and sweets brand, famous for its wide range of traditional delicacies like namkeens and sweets.

## Problem Statement :

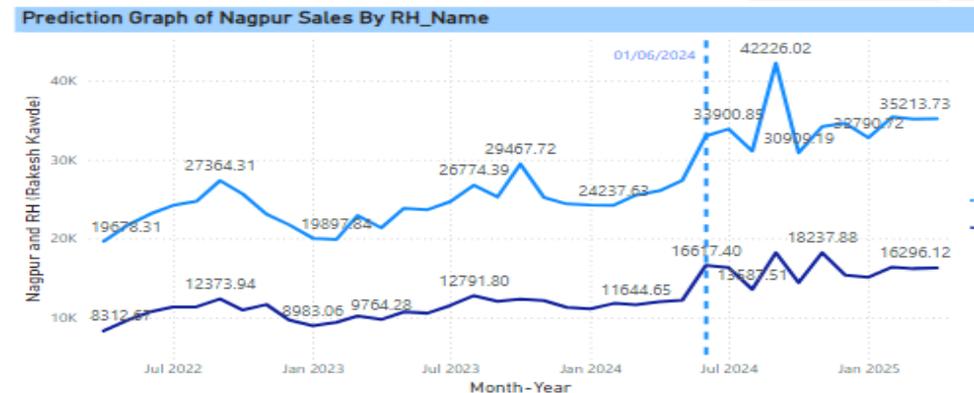
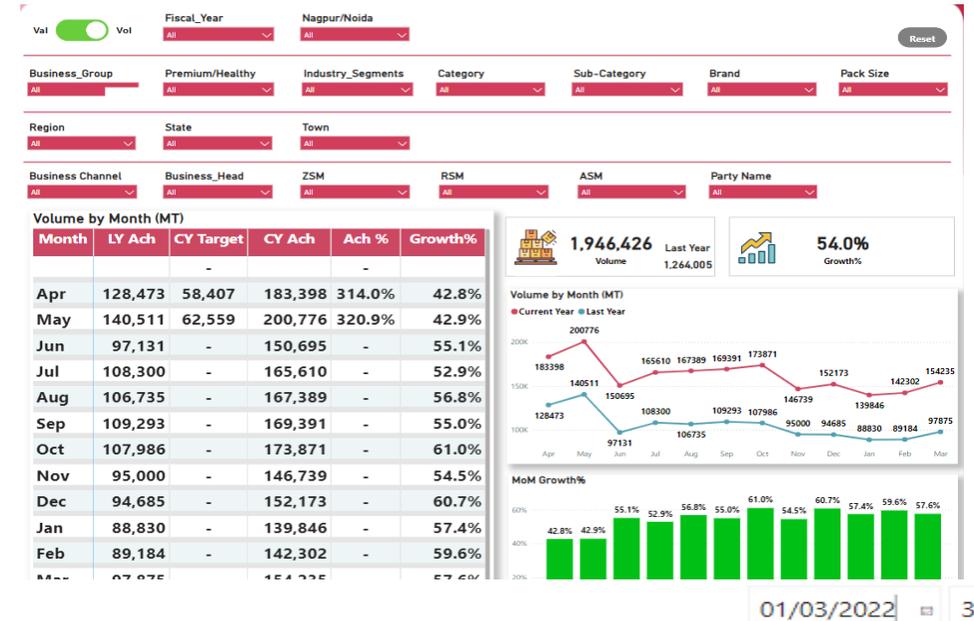
The company aims to forecast future sales by analyzing monthly sales data across various regions and product lines. The objective is to accurately identify and understand seasonal trends and patterns for upcoming periods.

## Business Solution :

A comprehensive forecasting model built using sales data across regions and specific brand metrics, incorporating RH and DB factors. Sales trends were forecasted based on actual data, with the process including thorough validation.

## Benefits:

- Sales forecasting with **82% accuracy**
- Report preparation time reduced from **1 week to 1 day**.
- Crisp and targeted **insights in Natural Language**



# Churn Prediction and Premium Customer Conversion through Data-Driven Analytic

BRAC Bank is a leading private commercial bank in Bangladesh, known for its focus on small and medium enterprises (SMEs).

## Problem Statement :

The bank seeks to identify potential customers who are likely to churn from the premium segment to the regular segment, as well as to identify customers with the potential to be upgraded to the premium segment.

## Business Solution :

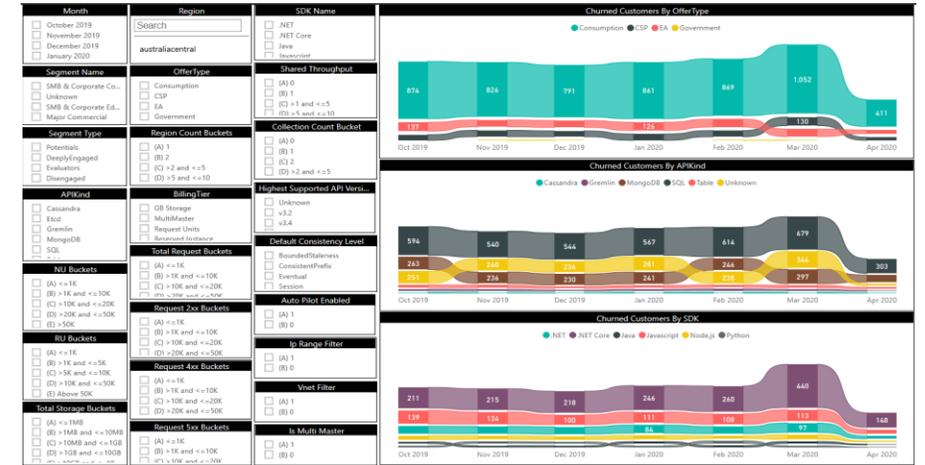
Quadrant developed a churn prediction model using the bank's customer data, incorporating key business rules and analyzing balance and transaction patterns. The model achieved an accuracy rate of 81%.

## Benefits:

- Proactively identify the churn customers.
- Reduced churn by **14%**
- Converted **3% more** customers to Premium

## Customer Churn Analysis

Showcase the Customer Churn trends over a period & across multiple dimensions



## Retention Trend Month over Month

based on Multiple Dimensions & for Monthly Cohorts



# Enhanced Customer Insights: Leveraging OCR for Extracting and Analyzing Loan Data in Housing Finance

Poonawalla Housing Finance Corporation Ltd. provides a range of home loan products and financial services aimed at making home ownership more accessible.

## Problem Statement :

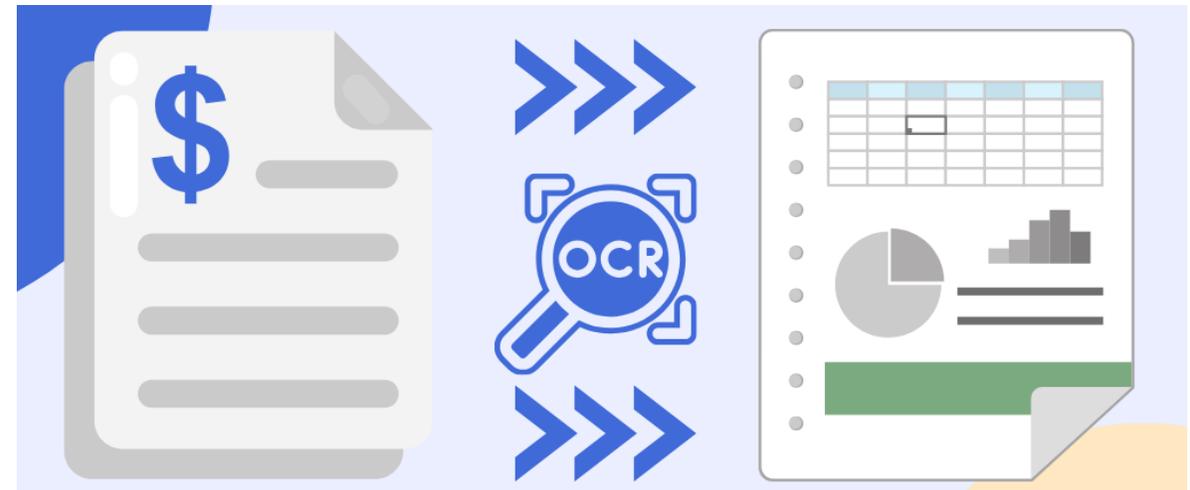
Poonawalla Housing Finance aimed to extract customer information from their physical loan processing documents to analyze loan patterns across different geographic demographics. This data-driven approach helps in understanding customer behavior, tailoring financial products, and improving overall service delivery.

## Business Solution :

Quadrant used its [OCR framework](#) to extract customer information from physical loan processing documents, which included 200 pages and complex table structures. This solution efficiently converted the data into a digital format, enabling Poonawalla Housing Finance to analyze loan patterns and demographics comprehensively.

## Benefits:

- OCR platform extracted data **with 88% accuracy**.
- Improved loan dispatch **process by 15%**



# Improved Fertilizer Production through Machine Learning

Coromandel International Limited, part of the Murugappa Group, is India's largest phosphatic fertilizer player and the world's largest neem-based bio-pesticide manufacturer.

## Problem Statement :

Develop a machine learning model to elucidate the fertilizer manufacturing process, predict production rates, and quantify byproduct losses. Determine optimal operating ranges for each parameter to maximize production efficiency and minimize losses.

## Business Solution :

Quadrant observed the data and found that process parameters were highly correlated, so they used nonlinear models like random forest and boosting algorithms. Feature selection was performed using forward selection based on R-squared and Adjusted-R-Squared metrics to build a model that better explained the manufacturing process. Clustering was conducted to identify the optimal operating parameter ranges (GOLDEN-BATCH)

## Benefits:

- Production improved from **600 Tones to 650 Tones**.
- **Reduced** byproducts loss to **1%**



# SmartBot: Elevating Customer Experience and Reducing Operational Costs

One of India's leading private sector banks, offering a wide range of financial products and services, including personal loans, credit cards, and digital savings accounts, and providing secure and convenient online banking services.

## Problem Statement :

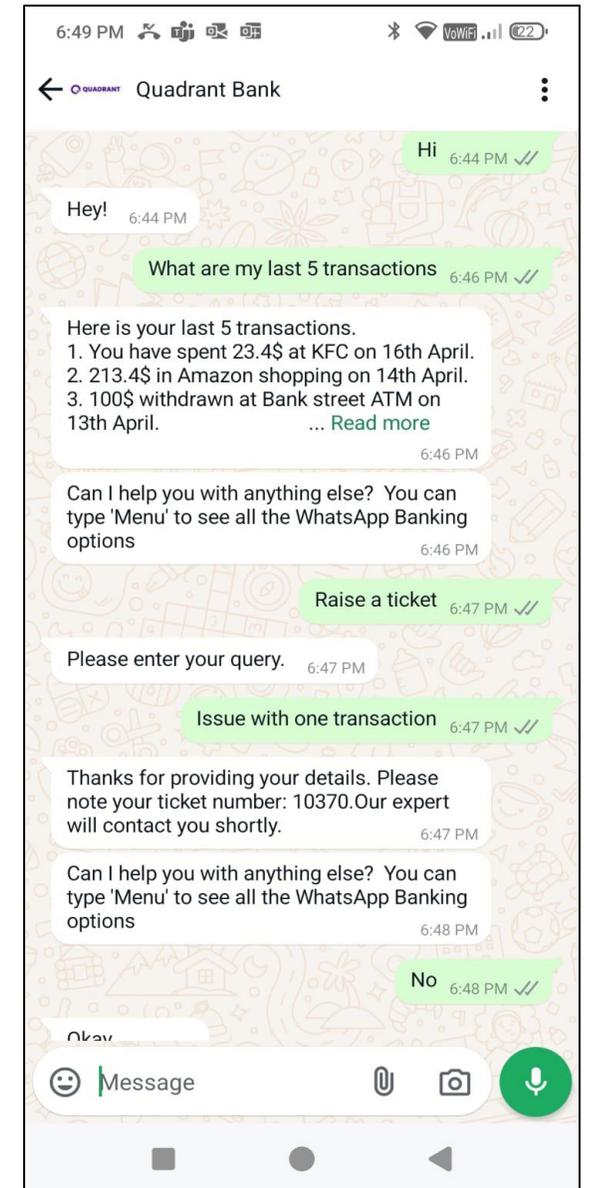
Bank wants all its customer facing interactions to be done contact less via NLP bot and with Whatsapp interactions, to improve ease of operations and reduce the time to operations and improve the customers satisfaction.

## Business Solution :

Quadrant developed a comprehensive chatbot to handle all customer touchpoints, including account statements, credit card blocking, account opening, loan eligibility checks, and support ticket management. Leveraging advanced NLP and LLM engines, the chatbot & whatsapp enables customers to interact in natural language, providing seamless and efficient access to necessary information and services

## Benefits:

- **Reduced** manual intervention by **22%**
- Customer satisfaction **improved by 15%**



# Quadrant's NLP-Based Platform for Seamless Data Classification to identify PII data

A leading global financial institution, offering a comprehensive range of services, including wealth management, corporate banking, and digital payment solutions, ensuring secure, seamless transactions.

## Problem Statement:

Financial institutions face high risks from data breaches due to the sensitive nature of personal and financial data. With stringent regulations like GDPR, non-compliance can lead to fines and reputational harm. Our solution identifies PII in document libraries, providing real-time security scores for proactive risk mitigation.

## Solution:

Quadrant's NLP-based Enterprise Data Classifier uses Azure Text Analytics, custom NER, Cognitive Search, and OCR to extract and identify PII from various document formats (DOCX, PDF, PNG, JPG). It helps businesses secure sensitive data, ensuring compliance with privacy regulations and reducing the risk of data breaches.

## Benefits:

- **60% reduction** can be seen in probability of data breaches
- Compliance accuracy **improved by 70%**.
- Risk management effectiveness **improved by 50%**.



# Enhancing Worker Safety with Real-Time PPE Compliance using Vision Safe Guard Implementation

A leading global industrial giant, specializing in advanced manufacturing solutions, automation technologies, and safety innovations, committed to ensuring secure, efficient operations and safeguarding workforce well-being across high-risk environments.

## Problem Statement:

Manufacturer aimed to improve worker safety by reducing accidents caused by inconsistent use of personal protective equipment (PPE). In high-risk environments, failure to wear proper safety gear, such as helmets and gloves, posed significant risks, prompting the need for a real-time solution to ensure PPE compliance and prevent accidents.

## Solution:

Deployed Quadrant's Vision SafeGuard in combination with camera systems across its manufacturing plants. The solution was used to detect whether workers were wearing required safety gear, such as helmets, goggles, and gloves, in real-time.

## Benefits:

- **Realtime Alert** to Foreman of improper PPE usage.
- Over **90% of workers** adhering to PPE protocols
- **40% reduction** in safety violations.
- **25% decrease** in workplace injuries.
- **15% reduction** in accident-related downtime.



# Enhancing OTT Platform Efficiency and Accessibility with Video Indexer

An Over-the-Top (OTT) streaming service provider known for offering a diverse library of movies, shows, and original content.

## Problem Statement:

The OTT platform struggled with generating accurate multilingual captions and rich metadata for its vast video library. Manual processes led to high costs and inefficiencies, limiting accessibility and content discovery. Key features needed included OCR, celebrity detection, and shot detection to improve user experience.

## Solution:

Quadrant developed a solution using Azure Video Indexer that included a review and management console. This solution automated multilingual caption generation for improved accessibility and provided rich metadata, such as OCR for on-screen text, celebrity detection for better content categorization, and shot detection for identifying backgrounds and locations.

## Benefits:

- **AI-generated** multilingual captions, **~Zero manual efforts**.
- **30% boost in viewership** among non-native speakers and the hearing-impaired.
- **15% increase in user engagement** and longer viewing times.



# Enhancing Water Distribution Efficiency through AI and ML Models

Large utility public sector organization whose service area is spread over 10 municipalities areas of Hyderabad City covering 15 Million population

## Problem Statement:

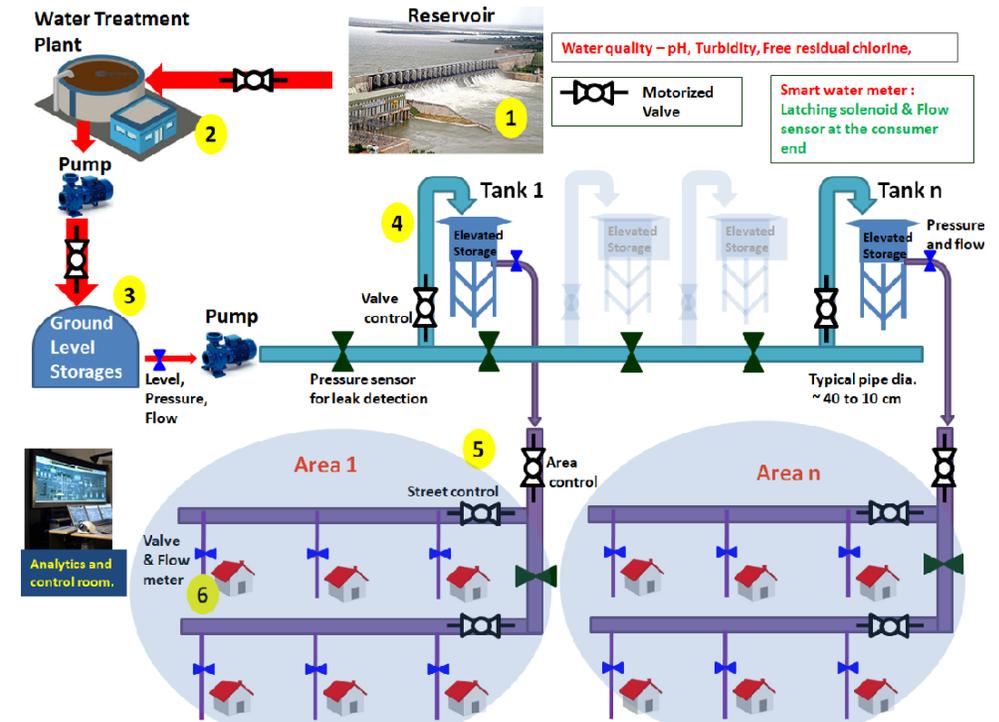
- **Water Management:** Develop an enhanced water distribution system aimed at minimizing water loss.
- **Undetected Anomalies:** Address issues such as default billings and unusual spikes in usage that often go unnoticed, leading to revenue loss.
- **Water Requirements Forecasting:** Accurately forecast water requirements for the next 5 to 10 years to support better infrastructure development.

## Solution:

Quadrant developed advanced models to predict water loss by analyzing data from source and final water meters. Quadrant also examined billing patterns to identify and alert on billing disturbances. Additionally, Quadrant created robust forecasting models to predict future water consumption, considering factors such as population growth, per capita consumption, and event data.

## Benefits:

- **Reduced revenue and water loss by 23%.**
- **85% accurate forecasting and prediction**





# QUADRANT

## THANK YOU

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