VITEOS
AN **INTERTRUST** COMPANY

Smart UI/UX, Automation & AI-driven Insights
for Asset Management Platform

CASE STUDY

MANTRA LABS

About Viteos

A **Technology Platform** offering smart solutions for Investment & Asset Management ranging from shadow-accounting to fund administration, for nearly every asset class in the World.

Currently, Viteos manages **$350 billion** worth of assets globally.

Founded in **2003**, Viteos has been named **Best Shadow Accounting Firm 2019** for the sixth consecutive year, and was recently acquired by Capital Firm, **Intertrust**.

Problem
Summary

The **financial asset management platform** operates a global delivery model that provides end-to-end middle & back office administration for top-tier hedge funds, private equity, private debt and other alternative asset managers.

Their platform was mired in several operational bottlenecks. **Mantra Labs** answered the call to solve some of their most pressing pain-points.

USER JOURNEY
The User's journey (UX/UI) and routine workflows were not intuitive, creating difficulties in seamless access to data & reporting.

Automated Onboarding
A manual onboarding process to gather client details & request regulatory documentation slowed down client setup-times.

AI-driven Insights
Advanced machine learning algorithms to find the lowest-commission broker for a specific trade; extract faster data insights from historical P&L data.

Solution

Mantra Labs refined their user workflows for more robust capabilities and smarter gains; integrated an automated client onboarding solution and created a machine learning model for producing actionable data insights.

Smarter Workflows
Single screen interface, reduced cognitive load, intuitive UX, coherent navigation, and responsive dashboards.

Automated Onboarding
Historical data mapping, data reconciliation with source records, data cleansing and validation to auto-fill fields in client portal.

AI-driven Insights
Advanced machine learning algorithms to find the lowest-commission broker for a specific trade; extract faster data insights from historical P&L data.

VuRec UX/UI

OBSOLETE WORKFLOW & UX DESIGN

KEY ISSUES

Tabular Structure

Superfluous Columns

Screen Overlapping

Poor Page Navigation

Tiresome Page Scrolls

User requires multiple screens to fit dashboard view.

VuRec UX/UI

SETUP ⌄   RECONCILIATION ⌄   REPORTS ⌄

Jane Willis
Customer Support

Client Name	Type of Recon	Recon	Rec Run	Business Date	
Viteos Benchmark ⌄	Cash ⌄	Benchmark PB cash Recon ⌄	Daily ⌄	01-06-2017 ⌄	🔍 Go

VU RECS
VU MASTER
VU PRO MO
SCHEDULER
ETL

Pair ⌄   Combine ⌄   Cluster ⌄   Force Match   ✕ Close   ↩ Undo   📎 Attach   🎯 Break Workflow   ⟳ Operatio...

Records Combined Sucessfully

Break Workflow
📋 Send For Review
○ Assign
✓ Approve
↻ Return
⟳ Reopen
⚠ WIP

Probable Matches   **Breaks**   Matches   Close   Analysis

🔍 Search

	BREAK ID ▾	CUSTODIAN ACCOUNT ▾	CURRENCY ▾	VALUE DATE ▾	INVESTMENT_ID ▾	N ▾	ISIN ▾	SEDOL ▾	TICKER ▾	STATUS ▾	S
📎 ▣	21986589	GSCO_VGMF_002662		01-06-2017	FRAS.SI		SG1CL9000006	BYYFHZ2	FRAS.SI	CNF	
📎	21986587	GSCO_VBMF_006307		01-06-2017	ASX.N	SD	US00756M4042	2646521	ASX.N	CNF	
	21986588	GSCO_VGMF_002662		01-06-2017	7269.T		JP33972000001	6865504	7269.T	CNF	
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Sort Ascending
Sort Descending
Remove Sorting
Show rows where :
Contains
Filter   Cancel

Organized Workflow Management | Smart Folder Access | Clean & Simple UI Design | Same-Window Navigation

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VuRec UX/UI
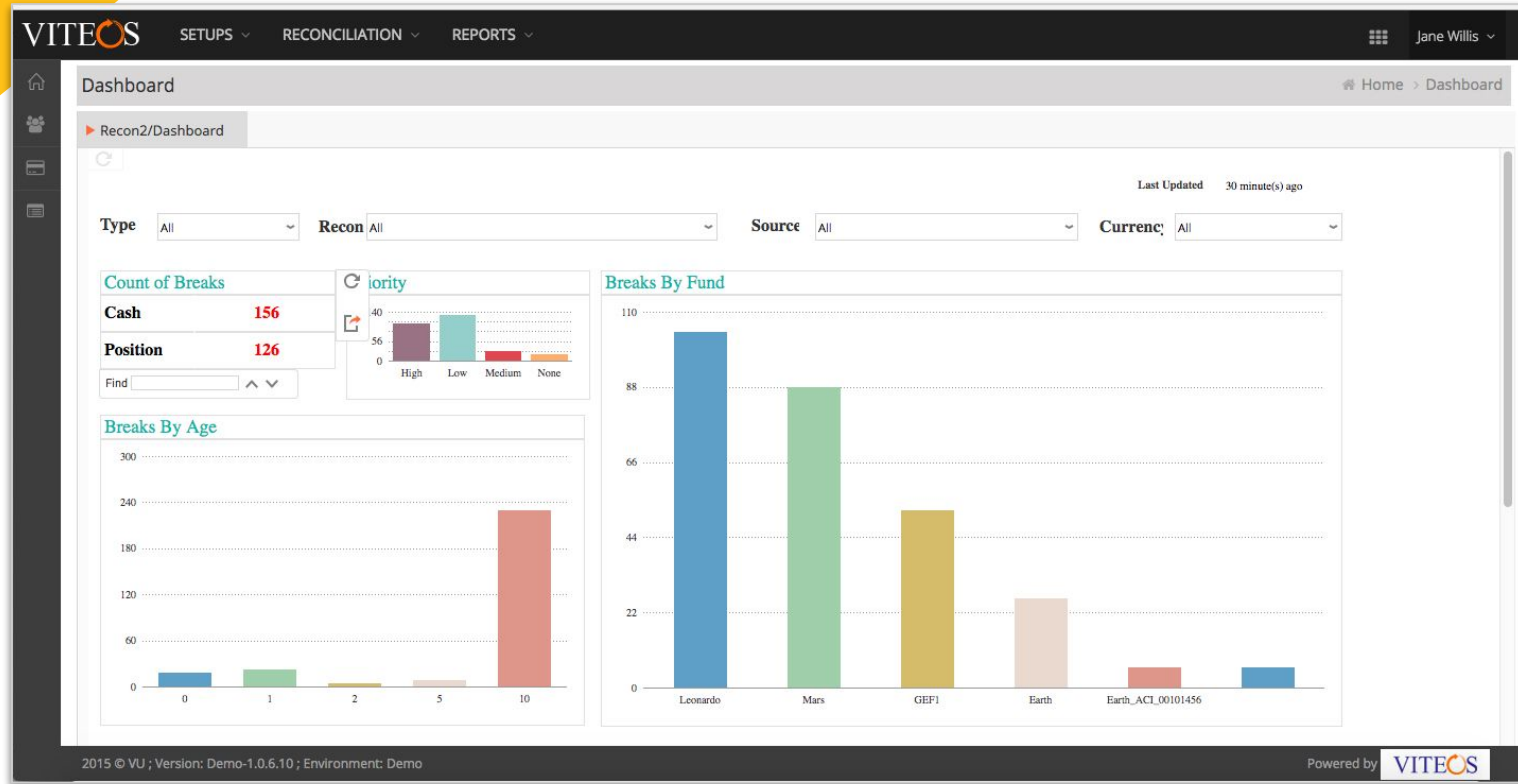
KEY ISSUES

Non-interactive
Experience

Poor Data
Comprehension

Data-storytelling
Is dreary
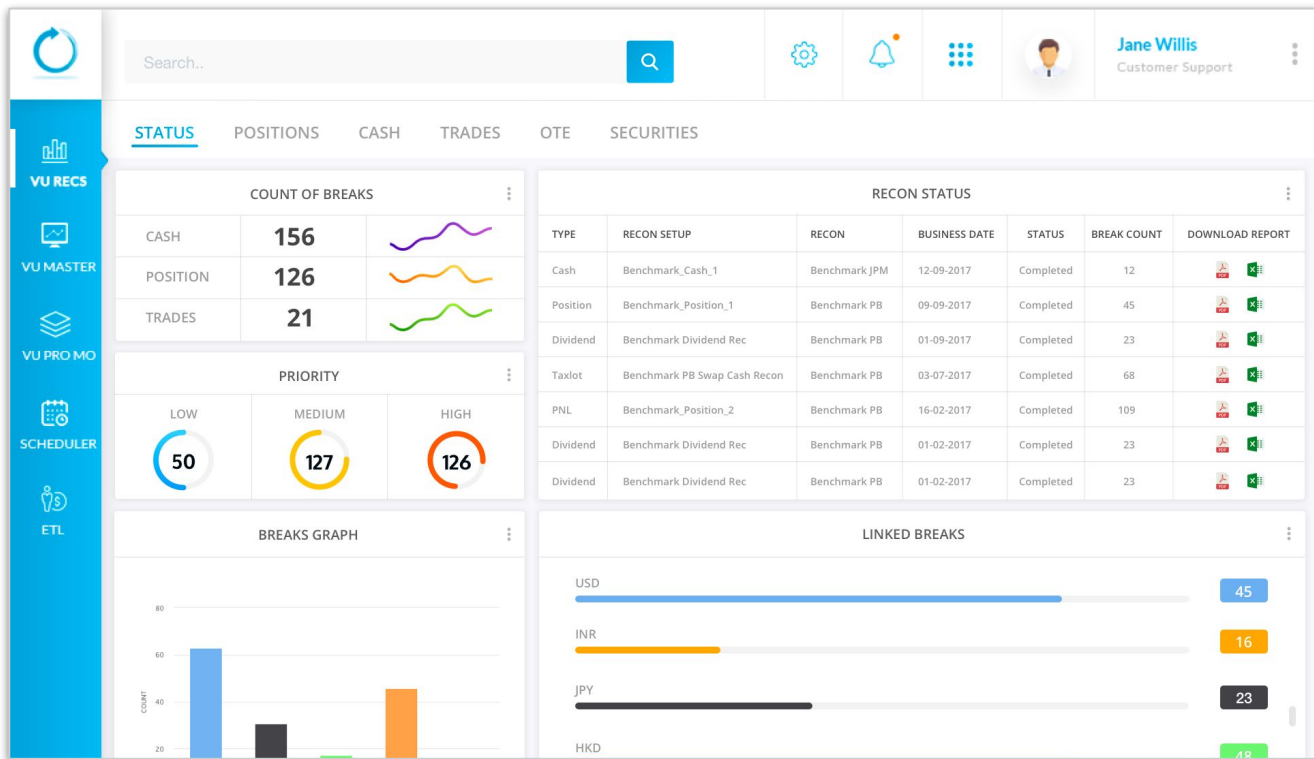
3/4

CLIENT
ONBOARDING

Previously, when a new client was being onboarded — the client data, which can be in a variety of formats and taxonomy, was manually converted to a standard Viteos format — **causing 'onboarding fatigue'.**

SmartETL

AUTOMATED ONBOARDING SOLUTION

The SmartETL system maps historical records
and new client information in order to suggest faster and accurate inputs to the user.

Key features

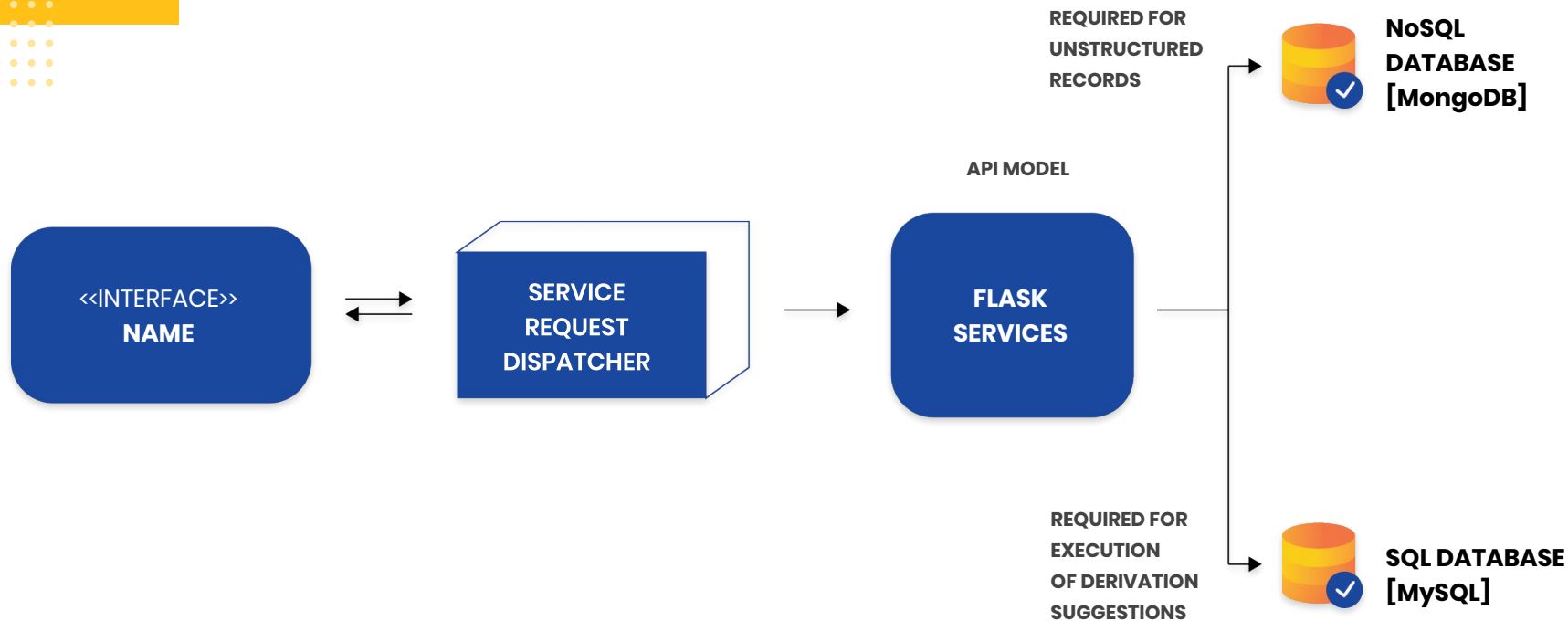- No restrictions on data source, file format, and taxonomy.
- Data reconciliation with source records.
- Data cleansing & validation, for auto-filling.

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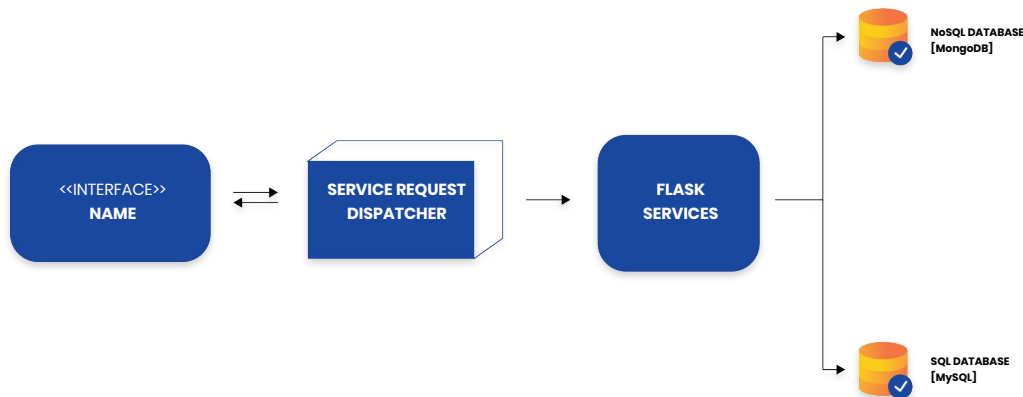
SmartETL
HOW IT WORKS

<<INTERFACE>>
NAME

SERVICE
REQUEST
DISPATCHER

API MODEL

FLASK
SERVICES

REQUIRED FOR
UNSTRUCTURED
RECORDS

NoSQL
DATABASE
[MongoDB]

REQUIRED FOR
EXECUTION
OF DERIVATION
SUGGESTIONS

SQL DATABASE
[MySQL]

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SmartETL
HOW IT WORKS Contd...

NoSQL DATABASE [MongoDB]

<<INTERFACE>> NAME ⇄ **SERVICE REQUEST DISPATCHER** → **FLASK SERVICES**

SQL DATABASE [MySQL]

DATA EXTRACTION & TRANSFORMATION
The system uses **NoSQL** & **SQL Server** databases to unite historical & modern data.
Historical data is transformed into a NoSQL compatible format for model services.
The SQL Server is used for executing certain SQL queries.

API MODELLING
Using **Python's Flask Framework** and **Pandas library**, the API takes user input and interacts with the database layer
to view/update data.

INTERFACE DESIGN
The system is programmed in **Angular/React framework** and is independent of view layer i.e. services are accessible on web/desktop/mobile.

MACHINE LEARNING ALGO

Earlier, data from multiple sources and distinct formats made it challenging for the user to comprehend historical data.

Using ML algorithms, large volumes of comprehensive data can be ingested & optimized for rapid analysis and prediction, while also simplifying time intensive documentation in data-entry.

AI-Enabled Insights

MACHINE LEARNING MODELS

The three ML models — **regression**, **outlier detection**, and **feature selection** analyse historical transactions, trades, and financial data from clients, accounting systems & banks.
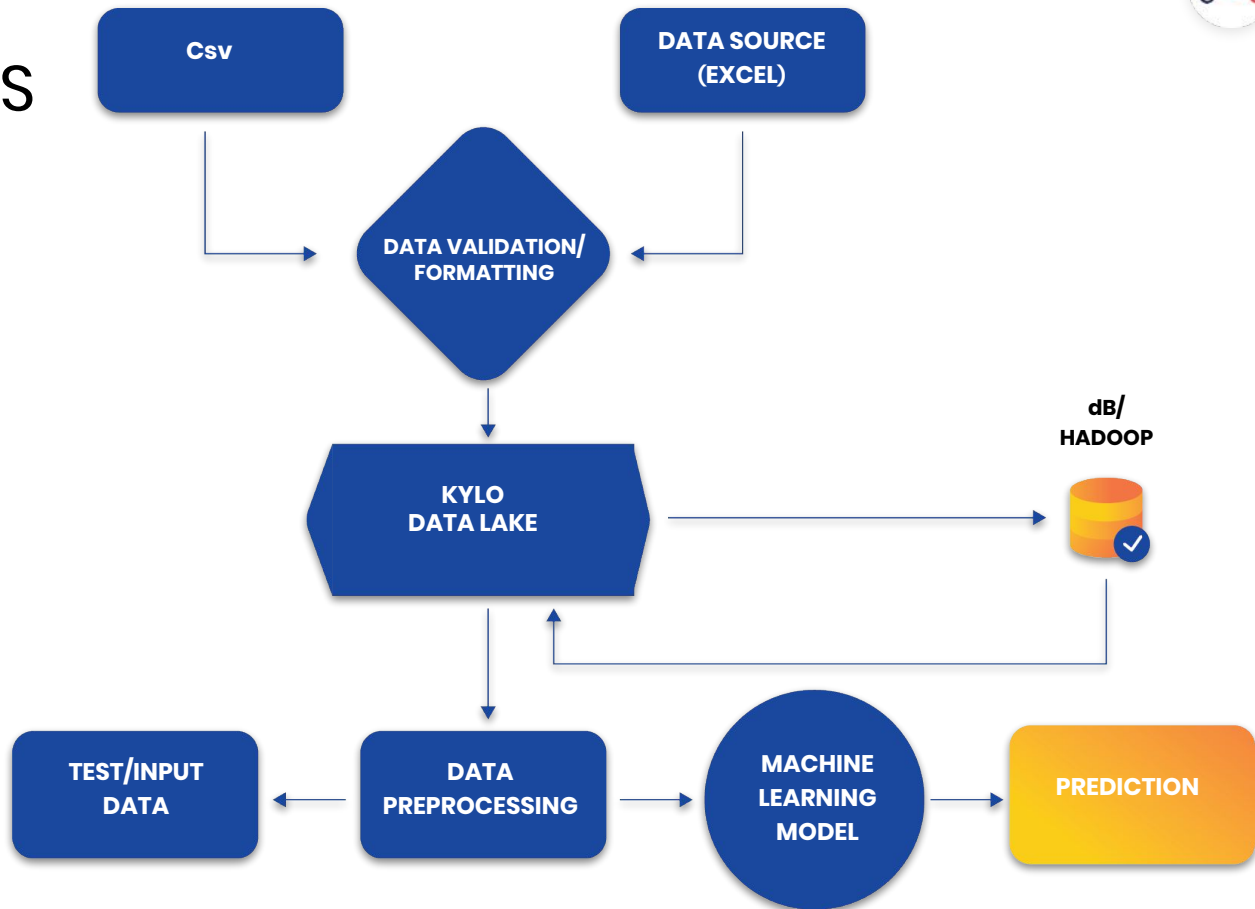
Key features

1. Clients can find the lowest-commission broker for a particular trade.
2. Accurate and faster data insights.
3. Flexibility to use the models on different data sets.
4. Efficient memory utilization for large volumes of data.

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ML ALGO
HOW IT WORKS

ML MODE WORKFLOW

ML ALGO
HOW IT WORKS Contd...

MACHINE LEARNING MODEL PROCESS

1. Fetching data from Kylo Data Lake
2. Preprocessing the data
3. Handling missing and null values
4. Perform dimensionality reduction
5. Data visualisation
6. Creating ML model
7. Performing validation
8. Checking for Model accuracy
9. Saving the Model

APPLICATION & MODULES

Regression: **Polynomial Regression**

Outliers: **Isolation Forest**

Feature Selection: **Light GBM**

END-USERS

The results of all three models can be utilized by users at all levels including **CXOs** and **clients**.

TECHNOLOGIES USED

Python / **Pandas** / **Numpy** / **Matplotlib** / **Plotly** / **Pyhive**

Light GBM / **Seaborn** / **Scipy** / **Pyspark** / **Elasticsearch**

Scikit Learn / **ActiveMQ** / **Apache NiFi** / **MySQL**

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Key results

SmartETL CLIENT ONBOARDING SOLUTION

REDUCED ONBOARDING TIME

The user can onboard a client within **1-2 hours** resulting in **87.5% efficiency gain**.

AI-DRIVEN INSIGHTS

FASTER DATA INSIGHTS

Viteos' Clients (traders) save anywhere between **46-92%** in trade-brokerage.

About
Mantra Labs

◆ Real World Problem Solving using Artificial Intelligence and Customer Experience Consulting

◆ Domain Focused Products and Solutions for the Digital Insurer

100+
PROJECTS

150+
GEEKS

03
OFFICES

Key Partnerships

Key Clients

Let's build what you need, together.

Get in touch with <u>us</u>.

+91 80 4099 2941

hello@mantralabsglobal.com

www.mantralabsglobal.com

Bangalore | San Francisco | Gurugram