



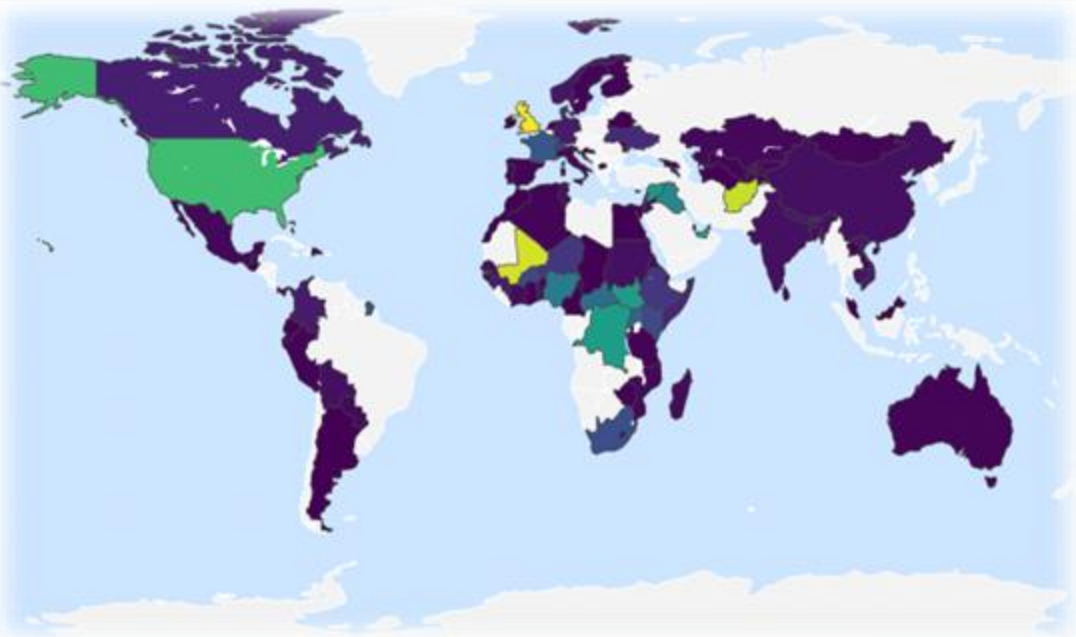
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Context & Scope

Global Distribution of UNOPS Contracts



10 20 30 40 50 60 70 80 90

The **United Nations Office for Project Services (UNOPS)** manages a large and diverse portfolio of **contracts** worldwide to support *procurement* and *project delivery* across multiple sectors and regions.

\$1.58 billion

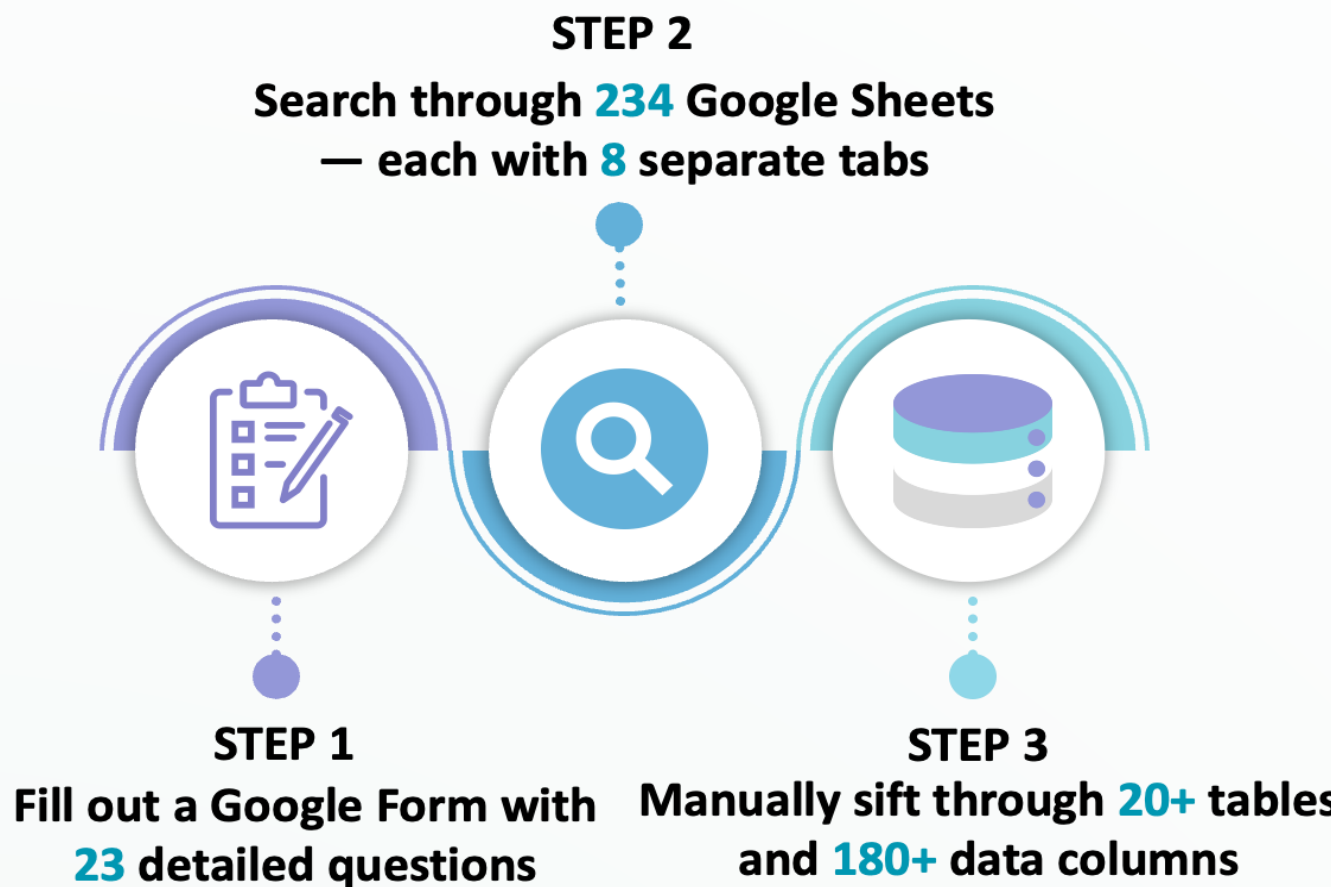
UNOPS procurement in 2024

349 81
projects in countries

5833 178
suppliers from countries

Problem Statement

UNOPS Peace and Security Cluster currently relies on **fragmented Google Sheets** and **manual workflows** to manage contracts:

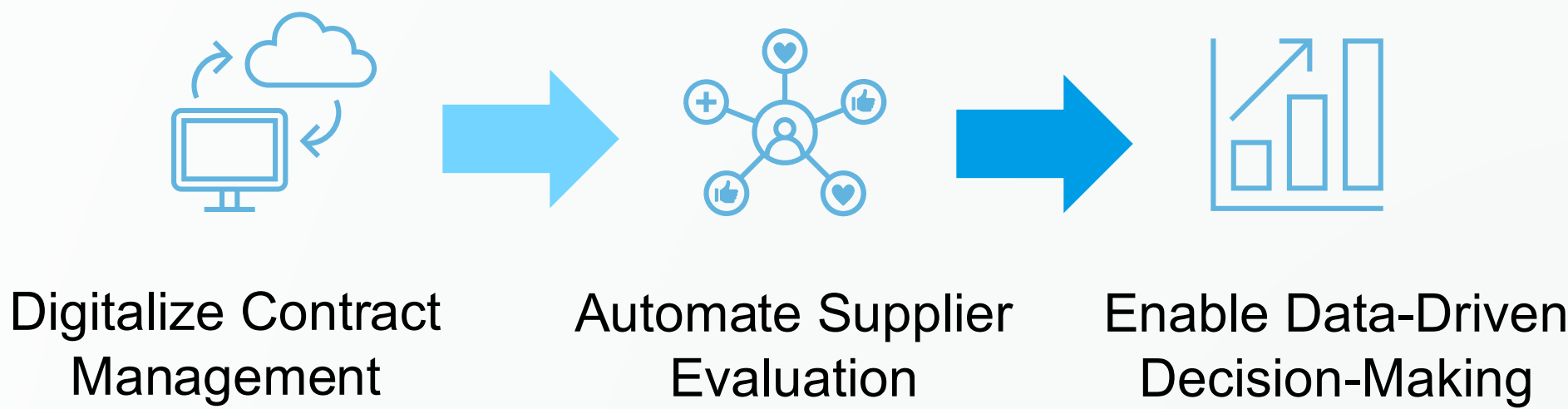


Scattered Data
no central database or direct search capability

Limited Visibility
hard to track contract status & supplier performance

Manual & Fragile
formulas break; errors propagate; slow updates

Objective



Data

Contract Metadata
Contract value, scope, region, and payment terms

Supplier Performance
Evaluation scores on timeliness, quality, compliance, and communication

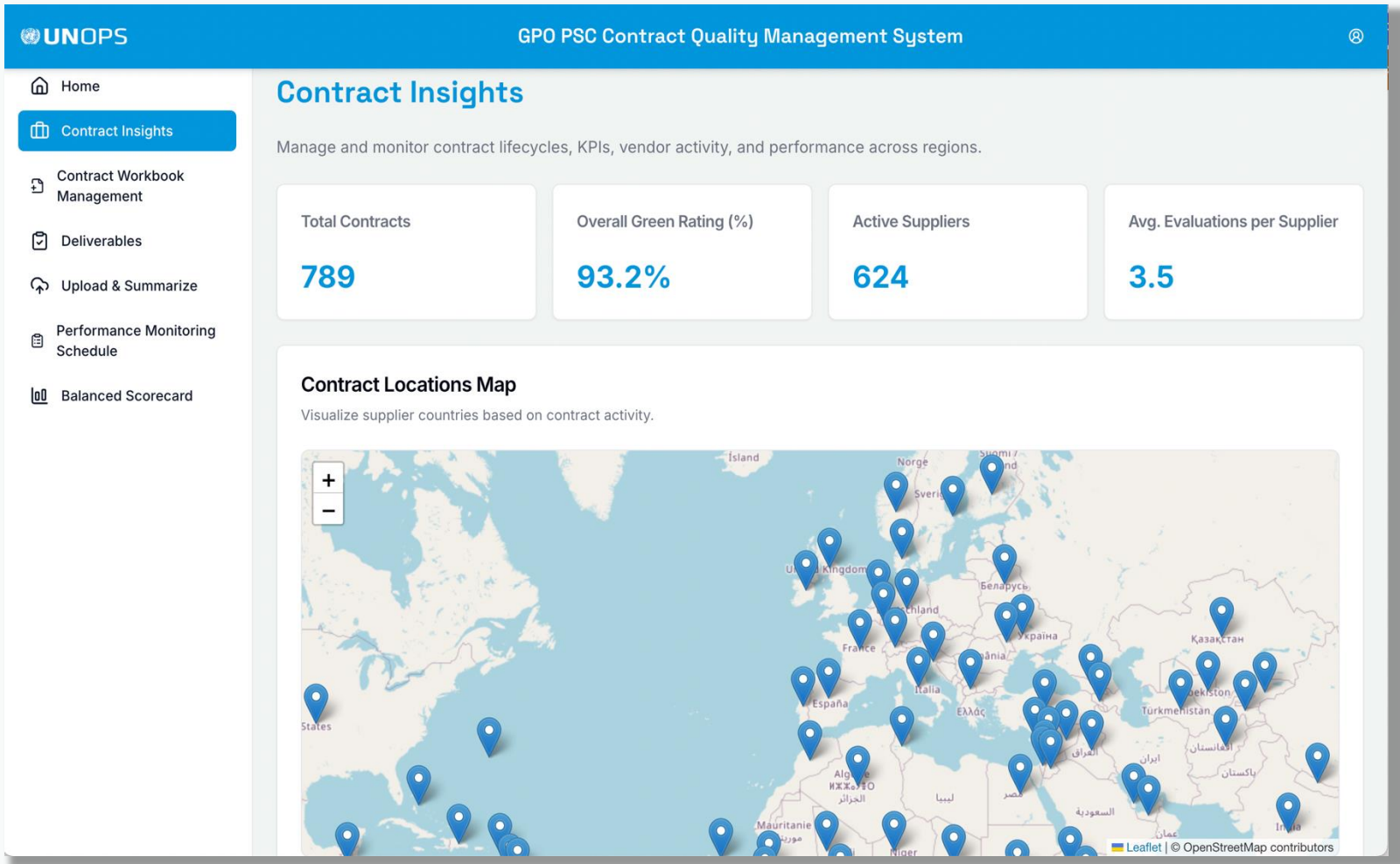
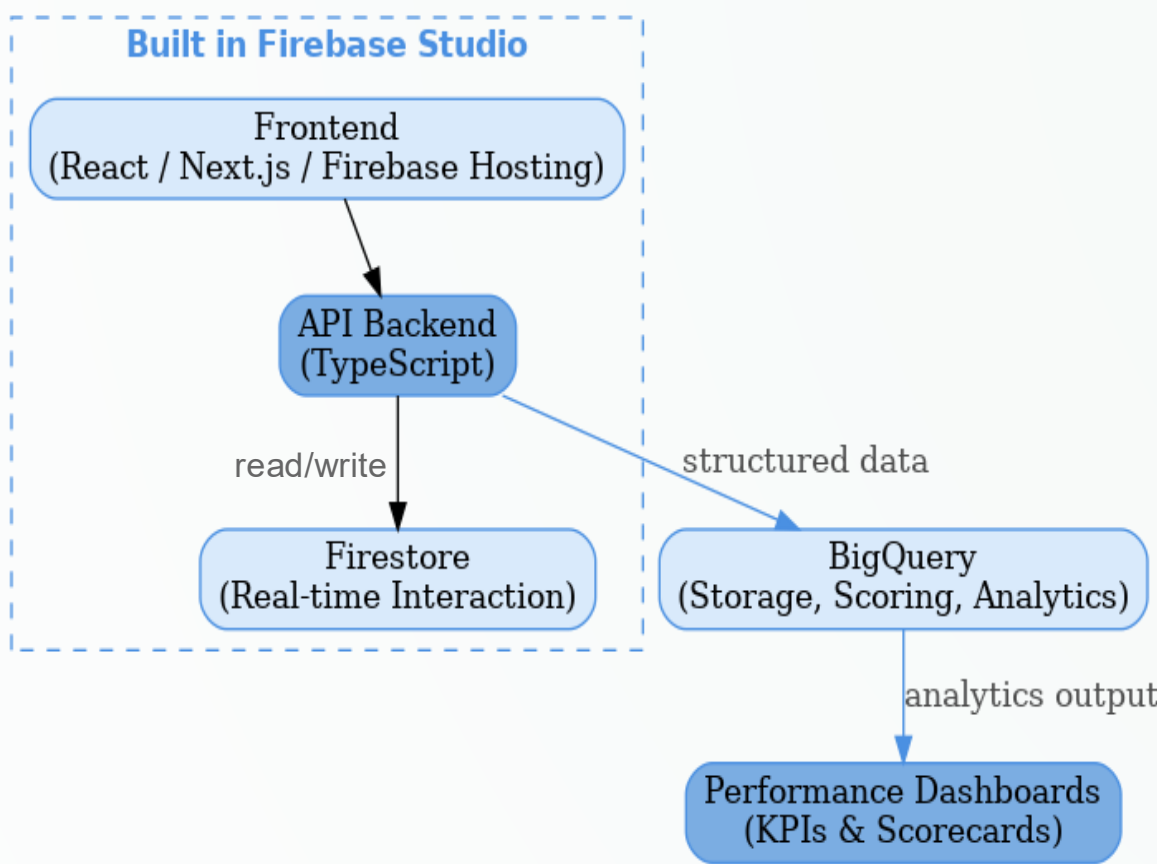
Purchase Orders
Detailed PO transactions, summaries, and linked deliverables

Payments
Invoice payment timelines and anomaly detection

Approach 1- Contract Quality Management System

We built an integrated **front-to-back** contract management system with **six core modules**, enabling seamless editing, tracking, evaluation, and analytics.

System Architecture



Key Functionalities

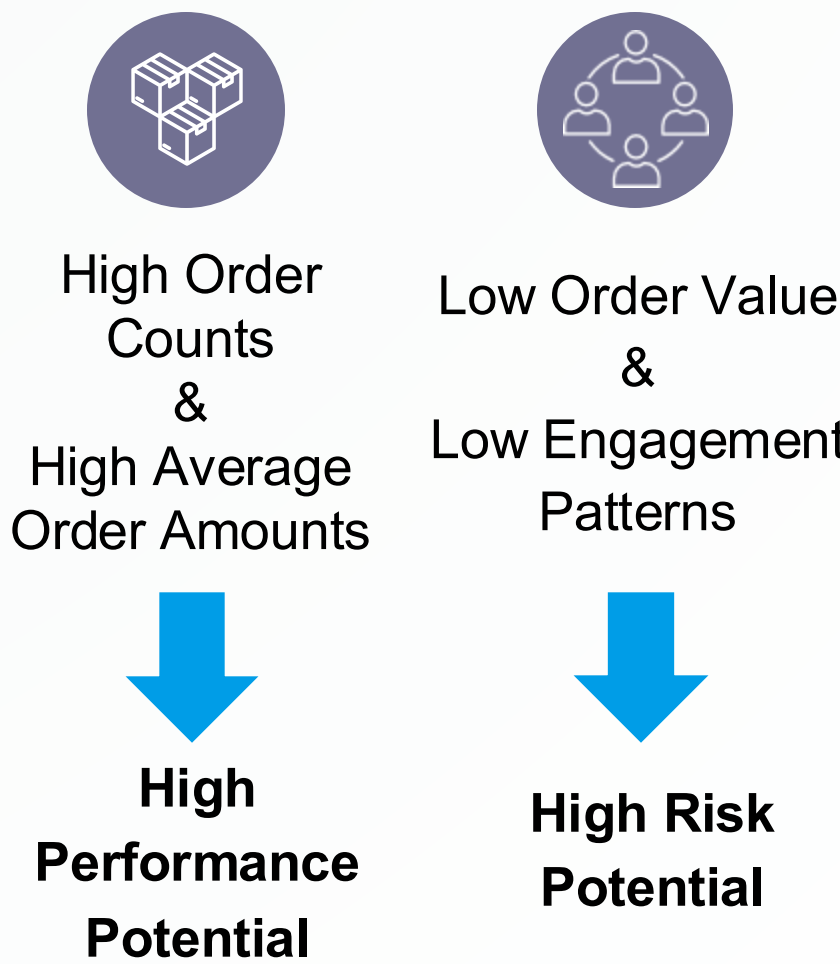
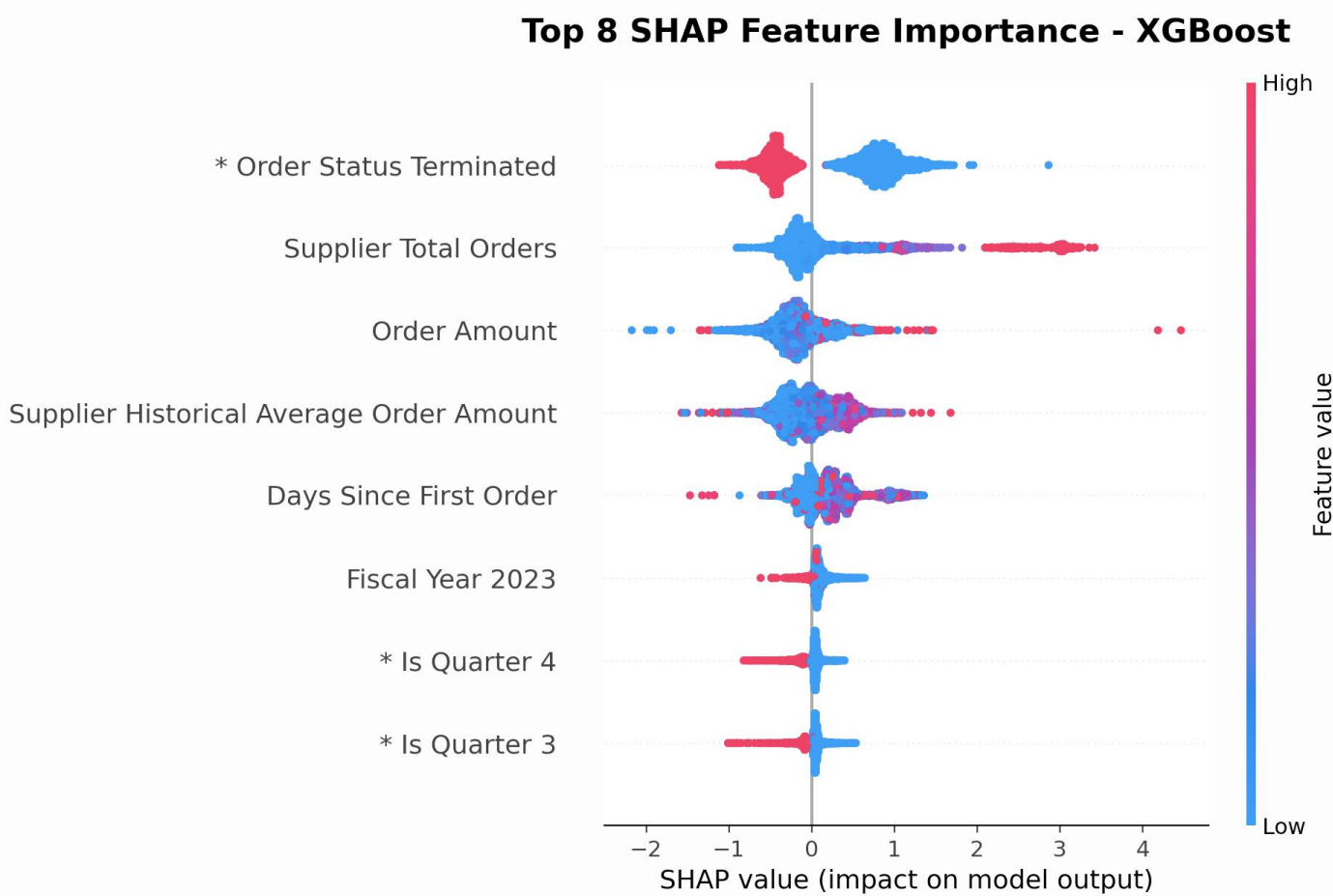
- Contract insights**
Visualize KPIs, contract distributions and supplier performance across countries
- Contract Workbook Management**
Create/retrieve workbooks define deliverables, and set monitoring KPIs
- Upload & Summarize**
AI-powered upload with instant summary of key terms, dates, obligations
- Deliverables**
Track and manage all deliverables, due dates, and payment associations
- Performance Monitoring Schedule**
Manage C3 reports and track them over time
- Balanced Scorecard**
Interactive scorecard to rate milestones and calculate overall ratings

Approach 2- Supplier Performance Prediction

We built machine learning models to analyze supplier performance and **provide future project sourcing recommendations** based on historical contract and purchase order data.

Model	Accuracy	Precision	Recall	AUC
Logistic Regression	0.940	0.970	0.965	0.918
Random Forest	0.966	0.974	0.989	0.953
Neural Network	0.960	0.974	0.983	0.942
XG Boost	0.966	0.975	0.989	0.967

Model Performance Comparison



Impact

- Efficiency Gains**
Reduced contract setup time **from 2–3 hours to 30 minutes**, saving **~80% time**
- Continuous Monitoring**
Supports **year-round** contract tracking with timely KPI and deliverable monitoring
- Stability & Automation**
Upgraded from a crash-prone, error-prone sheet system to a **stable, automated** platform
- Predictive Supplier Selection**
Recommend optimal suppliers to **improve contract success rates** and **reduce risk**

Next Steps

- Finalizing predictive supplier selection deployment** to fully integrate the model into the live contract management system.
- Establishing a feedback loop and ongoing maintenance** to incorporate user insights and ensure sustained accuracy and usability.
- Automating data refresh and model retraining** to keep supplier performance predictions up to date with the latest contract and engagement data.