

■ Multi-Source Analyst Documentation

1. Overview

Multi-Source Analyst is an automated data aggregation, analysis, and reporting system built in n8n.

It integrates Google Ads, WooCommerce, and Salesforce data into a unified analytics pipeline, performs daily aggregation & KPI calculations, and generates monthly AI-powered reports with forecasts, anomaly detection, and visual charts.

The system outputs results to Google Sheets, Google Drive, Gmail, and Slack for seamless sharing across teams.

2. Key Features

- Multi-source data ingestion: Google Ads, WooCommerce, Salesforce
- Normalization layer: Converts all sources into a common schema
- Scheduled automation: Runs every 31 days automatically
- KPI calculations: Revenue, Ad Spend, ROAS, Conversion Rate
- AI-powered insights: Forecasts, anomaly detection, management summaries
- Visualization: Automatic charts via QuickChart API → uploaded to Google Drive
- Automated distribution: Reports delivered via Gmail & Slack

3. Workflow Architecture

1. Data Intake → Google Ads, WooCommerce, Salesforce
2. Data Normalization → Standard schema via Code Nodes
3. Data Aggregation & KPI Calculation → Daily totals, ROAS, conversion rate
4. Data Storage → Results stored in Google Sheets
5. AI Insights → Forecast, summary, anomaly detection (Gemini, Mistral, Cohere)
6. Visualization → Charts via QuickChart API, stored in Google Drive
7. Reporting → Email & Slack distribution

4. Data Flow Summary

1. Trigger every 31 days
2. Extract raw data (Google Ads, WooCommerce, Salesforce)
3. Normalize into consistent schema
4. Aggregate & calculate KPIs
5. Append results into Google Sheets
6. Run AI analyses: month-end summary, forecast, anomaly detection
7. Generate visual charts & upload to Drive
8. Distribute reports via Gmail + Slack

5. Integrations

- Google Sheets → Input & KPI results storage
- QuickChart API → Chart visualization
- Google Drive → Chart storage
- Gmail → Monthly report delivery
- Slack → Team notifications
- AI Models: Gemini (forecasts/summaries), Mistral (insights), Cohere (alt. analysis)

6. Error Handling

- Missing/invalid values default to 0
- Sorting ensures chronological data consistency
- Post-processing sanitizes AI outputs into styled HTML for email compatibility

7. Example Output

At the end of each cycle:

- Google Sheets → Daily KPI breakdowns
- Gmail → Report with revenue, spend, conversions, ROAS, conversion rate + AI insights
- Slack → Notification with report link
- Google Drive → Stored monthly charts

8. Future Enhancements

- Daily real-time runs (instead of monthly)
- Dashboard integration (Looker, Tableau, Power BI)
- Multi-language AI summaries
- Support for more data sources (Facebook Ads, LinkedIn Ads, HubSpot)

Conclusion

■ Multi-Source Analyst turns siloed marketing & sales data into actionable insights, forecasts, and reports—fully automated.