Profit OS Integration Blueprint: KPI-Driven BI and Automation Stack with AutonomaX

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1. KPI Framework and Data Model

Domains: - *Revenue Intelligence:* Pipeline velocity, quota attainment, forecast accuracy, attribution. - *Operational Efficiency:* Cycle time, cost per acquisition, resource utilization, delivery latency. - *Customer Lifecycle:* CLV, churn, CAC, engagement, NPS, upsell/cross-sell.

Schema: - Star schema with shared dimensions (Customer, Product, Time, Channel). - Fact tables: Sales_Fact, Operations_Fact, Customer_Fact. - AI signal columns (e.g., churn_score, deal_risk, predicted_CLV).

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2. Recommended Tech Stack and Data Pipeline

Stack Chosen: *Looker + BigQuery (Google Cloud)*

Rationale: - *Semantic modeling:* LookML ensures single KPI definitions. - *Real-time & scalable:* BigQuery handles streaming ingestion. - *AI-native:* BigQuery ML, Vertex AI integration, SQL-based predictions. - *AutonomaX-friendly:* Looker APIs for triggering workflows.

Pipeline Layers: - Ingestion: Fivetran / Data Fusion. - Storage: BigQuery staging (Bronze). - Transformation: dbt or native SQL (Silver/Gold models). - AI/Automation: BigQuery ML for scoring; Looker Actions for triggering AutonomaX. - Visualization: Looker Explores per module.

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3. Governance and Risk Mitigation

Data Governance: - Role-based access. - Column masking for PII. - Data contracts and metric consistency (LookML versioning).

AI Controls: - Drift monitoring with baseline metrics. - Human-in-the-loop approval for high-impact decisions. - Audit trail of model actions and KPI shifts.

Privacy Compliance: - Encryption at rest/transit. - Pseudonymization. - Data lineage tracking.

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4. Phased Rollout Plan

Phase 1: Foundation (Month 0-2) - Data audit, onboarding, star schema design. - KPI glossary and stakeholder sign-off.

Phase 2: BI Implementation (Month 3-4) - Looker dashboards per domain. - End-user training & feedback loop.

Phase 3: AutonomaX Integration (Month 5-7) - AI model training (churn, lead scoring). - Trigger pilot automations via Looker.

Phase 4: Governance & Scale-Up (Month 8-12) - Formalize AI oversight board. - Scale KPI coverage, introduce performance reviews.

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5. Implementation Modules for Execution

Module A: Data Architecture & Engineering - Design BigQuery star schema: Sales_Fact, Ops_Fact, Customer_Fact. - Ingest data via Fivetran/Data Fusion. - Transform layers (bronze → silver → gold) with dbt. - Integrate AI predictions (churn_score, lead_score) into fact tables.

Module B: BI Layer Deployment - Define semantic layer in LookML. - Build Explores: Sales, Operations, CX. - Publish dashboards and embed in Profit OS UI.

Module C: AI Modeling and AutonomaX Integration - Train ML models in BigQuery ML / Vertex AI. - Set alert thresholds to trigger AutonomaX workflows. - Use Looker Actions or Airflow to invoke API-based automations. - Deploy retraining pipelines and performance monitoring.

Module D: Governance Setup - Launch cross-functional AI/data governance board. - Define approval, rollback, and audit mechanisms. - Enable Great Expectations or similar for data quality. - Enforce role-based access and policy guardrails.

Module E: Phased Rollout Execution - Identify pilot domains (e.g., Sales & Support). - Deliver early dashboards and feedback sessions. - Schedule governance reviews and user enablement. - Establish KPI-linked quarterly performance reviews.

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6. System Execution Framework: Production Launch

1. System Initialization - Provision BigQuery, Looker, Vertex AI instances. - Enable IAM roles and configure RLS/masking policies. - Connect data sources (CRM, ERP, telemetry).

2. KPI Engine Deployment - Deploy dbt models to build Sales, Ops, CX data marts. - Apply Great Expectations tests on KPI-critical fields. - Validate LookML metrics and activate semantic layer.

3. AI Workbench Integration - Train churn, CLV, lead scoring models. - Export predictions to fact tables. - Connect Looker to AutonomaX API endpoints for triggers.

4. Governance & Oversight - Activate data lineage and audit log frameworks. - Schedule monthly governance board sessions. - Document all KPI changes, model updates, automation logic.

5. Pilot & Scale Sprints - Wk 1–2: Sales metrics and lead automation pilots. - Wk 3–4: Customer support escalation workflows. - Wk 5+: Expansion to marketing, finance, and product lines.

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7. Deployment Assets: Templates & Execution Snippets

A. LookML Template (KPI Governance Layer)

```
view: sales_facts {
  sql_table_name: project.dataset.sales_fact ;;
  dimension: deal_id { primary_key: yes type: string sql: ${TABLE}.deal_id ;; }
  dimension: sales_rep { type: string sql: ${TABLE}.sales_rep ;; }
  measure: total_pipeline { type: sum sql: ${TABLE}.deal_value ;; }
  measure: avg_deal_size { type: average sql: ${TABLE}.deal_value ;; }
  measure: win_rate { type: number sql: CASE WHEN ${TABLE}.deal_stage = 'Closed
Won' THEN 1 ELSE 0 END ;; value_format_name: percent_0 }
  measure: quota_attainment { type: number sql: ${total_pipeline} / $
{TABLE}.rep_quota ;; value_format_name: percent_1 }
}
```

B. dbt Gold Model Example: Customer Churn Table

```
-- models/gold/customer_kpis.sql
with base as (
  select customer_id, region, signup_date,
         max(last_active_date) as last_seen,
         count(distinct session_id) as session_count,
         count(case when status = 'churned' then 1 end) as churn_flag
  from {{ ref('silver_customer_activity') }}
  group by 1, 2, 3
)
select *,
  case when date_diff(current_date, last_seen, day) > 90 then 1 else 0 end as
predicted_churn
from base
```

C. AutonomaX API Trigger Payload (Churn Workflow)

```
POST /autonomax/workflows/trigger
{
  "workflow_id": "churn_prevention_001",
  "trigger_source": "Looker_Action",
  "conditions_met": {
    "predicted_churn": 1,
    "customer_value": "high"
  },
  "payload": {
```

```
    "customer_id": "C_3281",
    "reason_code": "low_engagement",
    "action": "assign_success_manager"
  }
}
```

D. Stakeholder Training Assets (Overview) - *KPI Dashboarding Deck:* Visual exploration of core BI metrics. - *AI & Automation Guidebook:* Ethics, overrides, and escalation playbooks. - *Governance Onboarding Checklist:* KPI definitions, access rights, feedback forms.

End-State Objective: An AI-powered, real-time Profit OS platform where KPIs drive autonomous workflows, with governance, auditability, and human alignment embedded across all decisions.

Status: ✅Blueprint confirmed ✅Execution modules activated ✅Production initialized ✅Templates & scripts deployed ☸️ Next: Task board deployment, onboarding pack distribution, compliance audit automation