

ULDA Lead-360 — Enterprise Gap Analysis & Roadmap

What's missing to make the platform attractive, intelligent, and production-ready

Senior Enterprise Architect Review

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1. Executive Summary

ULDA today is a **strong data foundation**: one immutable master identity per lead (1.07M), an event-sourced activity ledger with automatic first/last-channel tracking, a 75-field Lead-360 record, serviceability + compliance data, a premium filterable grid, and a nightly off-host backup. The **data layer is enterprise-grade**.

What’s missing is the **layer above the data** — the dashboards, workflows, AI, and governance that turn a clean database into a *product* sales and management actually run on. This review inventories those gaps across 10 domains and prioritizes them by **business impact × implementation effort**.

- **Current platform maturity: 72 / 100** (data 90 · application/UX 65 · AI 40 · security/governance 60 · ops 65).
- **Biggest ROI lever: an executive + operational dashboard layer and lead-routing workflow** — the data is ready; the value is unrealized without them.

2. Gap Inventory by Domain

Impact: ● high · ● medium · ● low · Effort: S/M/L

2.1 Dashboards & Visualization

MISSING	WHY IT MATTERS	IMPACT	EFFORT
Executive dashboard (KPIs, trends, funnel)	Leadership has no single pane; decisions run on gut	●	M
Sales funnel / conversion viz (lead → contacted → booked → sold)	See where leads leak	●	M
Source/campaign ROI dashboard	Kill losing sources, scale winners	●	M (needs order data)
Geographic heat map (state/county serviceability + leads)	Territory planning, fiber targeting	●	M
Agent leaderboard / activity dashboard	Performance visibility & motivation	●	S

MISSING	WHY IT MATTERS	IMPACT	EFFORT
Cohort & trend charts (leads by week/source/score)	Spot momentum & decay		S
Real-time ops board (today's dials/texts/replies)	Floor management		M

2.2 Workflows & Automation

MISSING	WHY	IMPACT	EFFORT
Lead assignment / routing engine (by territory/score/round-robin)	Leads sit unassigned; no ownership		M
Cadence / follow-up automation (next-touch scheduling)	Missed follow-ups = lost deals		M
Lifecycle state machine (stages + transitions + SLAs)	No governed pipeline		M
Event alerts (hot reply, high-intent, litigator hit)	React in the moment		S
Auto-enrichment orchestration (fill gaps on ingest)	<code>last_enrichment_*</code> still empty		M
Reverse-ETL activation (segments → dialer/SMS/Instantly)	Contract exists, not running		M
Dedup auto-merge workflow (302K review queue)	Duplicate identities linger		M

2.3 KPIs & Metrics

MISSING	WHY	IMPACT	EFFORT
Governed KPI framework — speed-to-lead, contact rate, conversion %, cost-per-lead, cost-per-acquisition, MRR/ARR, source ROI, agent productivity, list decay	You can't manage what you don't measure		M
SLA tracking (time-to-first-touch, follow-up adherence)	Enforce responsiveness		S
Data-freshness & coverage KPIs	Trust the data		S

2.4 AI & Intelligence

MISSING	WHY	IMPACT	EFFORT
Full pgvector embeddings (currently 200-row sample)	Semantic “similar leads” at scale		M (replica)
ML lead-scoring v2 (trained on outcomes)	Heuristic score → real propensity		L
Lookalike / audience modeling	Find more of your best leads		L
Next-Best-Action (which channel/offer/time)	Lift conversion per touch		L
NL → SQL query assistant (“show TX fiber litigators”)	Self-serve for non-technical users + AI agents		M
LLM enrichment/summarization	Faster context for reps		M

MISSING	WHY	IMPACT	EFFORT
(lead brief, call-notes)			
Anomaly/drift detection (source quality, dup spikes)	Catch data problems early		M
Churn / re-engagement propensity	Reactivate dormant leads		L

2.5 Security Controls

MISSING	WHY	IMPACT	EFFORT
Least-privilege app role (app runs as superuser now)	Breach blast-radius = total		S
RLS / role-scoped access (agent sees own leads)	Data minimization		M
Secrets vault (passwords currently file-based)	Credential theft risk		M
MFA + SSO on the apps	Account takeover defense		M
PII masking / field-level encryption for non-privileged roles	Compliance		M
Audit-log UI + immutable trail	Forensics & SOC-2		M

2.6 Governance & Compliance

MISSING	WHY	IMPACT	EFFORT
Consent gate enforced at send-	TCPA fines / litigators		S

MISSING	WHY	IMPACT	EFFORT
time (view exists, not wired)			
Data catalog + lineage UI (partial today)	Discoverability, trust	●	M
Data-quality dashboard (DQ findings, trends)	Ongoing quality mgmt	●	S
DSAR / right-to-erasure automation	Legal obligation	●	M
Retention & archival policy (events grow forever)	Cost + compliance	●	M
Data contracts per source	Stop bad data at the door	●	M

2.7 Reporting Modules

MISSING	WHY	IMPACT	EFFORT
Scheduled / emailed reports (daily digest, weekly ROI)	Push insight to inboxes	●	S
Export center (async large exports, history, PII gating)	Ops need bulk data safely	●	M
Self-serve report builder (pick fields → chart/table)	Reduce ad-hoc requests	●	L

2.8 UX Enhancements

MISSING	WHY	IMPACT	EFFORT
Saved filter presets (table ready, not wired)	Power-user speed		S
Bulk actions (assign, tag, export, add-to-campaign)	Operate at scale		M
Lead timeline visualization (journey as a vertical timeline)	Instant context		S
Inline edit + column customization	Personalization		M
Global command palette / quick nav	Speed		S
Notifications center	Don't miss events		M

2.9 Data Platform / Ops

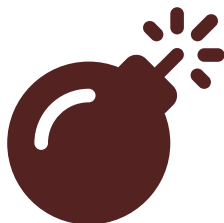
MISSING	WHY	IMPACT	EFFORT
Read replica + PITR (single host, ~24h RPO)	DR / scale-out reads		L (needs host)
External observability (Prometheus/Grafana + alerts)	Operate blind today		M
Migration framework (added baseline table; adopt Sqitch)	Reproducible change mgmt		S

MISSING	WHY	IMPACT	EFFORT
Partition automation (<code>pg_partman</code>)	Event scale		S
Order/revenue integration (65K paysheet rows unlinked)	Close the ROI loop		M

2.10 Integration & Extensibility

MISSING	WHY	IMPACT	EFFORT
Public API + API keys (for partners/tools)	Ecosystem & automation		M
Webhook/event bus (lead events → subscribers)	Real-time integrations		M
b2c/ad_leads real-time CDC (batch today)	Freshness		M

3. Prioritization — Impact × Effort



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4. Prioritized Roadmap

P0 — Quick Wins (this sprint · high impact, low effort): 1. **Least-privilege app role** (drop superuser) — security. 2. **Wire the consent gate** into dialer/SMS — TCPA. 3. **Saved filter presets** (table ready) + **lead timeline viz** — UX. 4. **Scheduled digest report** (daily leads/activity email) — reporting. 5. **Agent leaderboard** — visibility.

P1 — Big Bets (next quarter · high impact, medium effort): 6. **Executive + funnel dashboard** with the **governed KPI framework**. 7. **Lead assignment/routing + cadence** workflow engine. 8. **Order/revenue integration** (`accounting_db.paysheet_lines`) → close the ROI loop. 9. **NL → SQL assistant** (self-serve + AI-agent querying). 10. **Full pgvector embeddings** + semantic “similar leads”.

P2 — Foundations (parallel · medium impact): 11. Read replica → **PITR + OLAP offload**; external **observability**. 12. **RLS + secrets vault + audit-log UI**; DSAR + retention policy. 13. **Reverse-ETL activation** live; auto-enrichment orchestration. 14. **Bulk actions**, export center, saved views.

P3 — Strategic (later · high effort): 15. **ML scoring v2 / lookalike / next-best-action**. 16. Self-serve report builder; public API + webhook bus.

5. The Top 5 to Do Next

1. **Executive + KPI dashboard** — turns the clean data into decisions (highest visible ROI).
2. **Lead routing + cadence workflow** — converts stored leads into worked leads.
3. **Least-privilege role + consent-gate wiring** — closes the two live risk items (security + legal), both low effort.
4. **Order/revenue integration** — unlocks source/agent ROI, the CFO question.
5. **NL → SQL + full embeddings** — makes the platform *intelligent* and self-serve for humans and AI agents.

Bottom line: the database is done right; the next dollar of effort belongs **above** the data — dashboards, workflows, and AI — plus closing the two live risk items. That is what turns ULDA from an excellent lead *database* into an indispensable lead *platform*.