

Milestone-Based Roadmap Timeline (Feature Gates)

This roadmap defines execution phases as **feature-gated milestones**. Progression to the next phase requires explicit technical acceptance criteria to be met.

Phase 0 — Core Ingestion Foundation (COMPLETED)

Objective

Establish a reliable data ingestion and normalization backbone.

Delivered Capabilities

- Google Maps ingestion agent
- Business normalization and schema standardization
- Idempotent deduplication logic
- Segmentation + geo-radius query support
- Stable pipeline orchestration

Exit Criteria (Gate)

- Maps ingestion stable with multiple queries
 - Idempotent export verified
 - Normalized business schema contract locked
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Phase 1 — Validation + Routing Layer (COMPLETED)

Objective

Classify leads by website presence and route them deterministically.

Delivered Capabilities

- WebsitePresenceValidatorAgent
- LeadRouterAgent with route logic
- Routing categories: TARGET / EXCLUDED / RETRY
- Deterministic ordering and stats output

Exit Criteria (Gate)

- Website validation rules enforced

- Routing logic fully tested
 - Output contracts verified
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Phase 2 — Contract Normalization + Fan-Out Export (COMPLETED)

Objective

Harden pipeline contracts and enable multi-sheet export fan-out.

Delivered Capabilities

- Pipeline contract normalization
- Dedup ownership lock
- Fan-out export architecture
- Atomic preflight/write/backup flow
- Per-sheet idempotency

Exit Criteria (Gate)

- Export fan-out tested
 - Atomic export guarantees verified
 - Contract tests passing
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Phase 3 — Retry Pipeline Architecture (COMPLETED)

Objective

Enable safe reprocessing of failed website validations.

Delivered Capabilities

- RetryInputLoaderAgent
- Retry counter logic
- ENV-configurable retry limits
- Dual-mode pipeline (normal / retry)
- CLI execution modes

Exit Criteria (Gate)

- Retry-only pipeline operational
 - Max retry enforcement tested
 - Retry stats validated
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Phase 4 — Lead Qualification & Enrichment (NEXT)

Objective

Enhance lead quality before outreach and landing generation.

Planned Capabilities

- Business category scoring
- Contact completeness scoring
- Business size estimation heuristics
- Location confidence scoring

Exit Criteria (Gate)

- Lead scoring thresholds defined
 - Enrichment pipeline integrated
 - Scored leads exported
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Phase 5 — Landing Page Automation System

Objective

Automatically generate conversion-focused landing pages for TARGET leads.

Planned Capabilities

- Template-based landing generator
- Dynamic content injection
- SEO meta generation
- Business branding customization

Exit Criteria (Gate)

- Static site generation working
 - One-click deploy ready
 - Preview pipeline operational
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Phase 6 — Outreach Automation Layer

Objective

Automate outreach to generated leads.

Planned Capabilities

- Email campaign generator
- WhatsApp outreach integration
- CRM export adapters
- Reply tracking hooks

Exit Criteria (Gate)

- Outreach templates validated
 - Campaign automation working
 - Engagement metrics captured
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Phase 7 — Monetization & Scaling Infrastructure

Objective

Prepare platform for commercial scale.

Planned Capabilities

- Multi-user account isolation
- Usage quota enforcement
- Billing integration
- Performance monitoring

Exit Criteria (Gate)

- Multi-tenant support
 - Billing flows validated
 - Observability dashboards online
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Execution Philosophy

- No phase advances without automated test coverage
 - Contract stability is enforced before feature expansion
 - Infrastructure reliability precedes automation features
 - Revenue features only built after data quality stabilization
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Status Summary

Phase 0-3: COMPLETE Phase 4: READY TO START Phase 5-7: PLANNED