

Cold Outreach Automation Pipeline

Technical Implementation Task

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|-------------|----------------|-------------------|-----------------------|
| Task ID: | ZAIA-AUTO-001 | Priority: | High |
| Department: | Technical Team | Estimated Effort: | 3-5 Days |
| Created: | December 2025 | Status: | Ready for Development |

1. Objective

Build an automated cold outreach pipeline for Zaia that handles lead discovery through response tracking. The system must be optimized for minimal steps and efficient LLM token usage.

2. System Architecture

The pipeline consists of six interconnected components:

| Stage | Component | Description |
|-------|-----------------------|--------------------------------------------------------------|
| 1 | Lead Search | Automated discovery of potential leads matching ICP criteria |
| 2 | Pain Point Analysis | Extract and identify lead-specific pain points |
| 3 | Email Personalization | Generate customized outreach content |
| 4 | Email Delivery | Automated sending with deliverability optimization |
| 5 | Response Monitoring | Track and highlight incoming responses |
| 6 | CRM Update | Sync response data back to Airtable |

3. Component Specifications

3.1 Airtable CRM Setup

Acceptance Criteria:

- Base created with appropriate workspace permissions
- Lead table includes: Company Name, Contact Name, Email, Phone, Industry, Company Size, Location, Website, LinkedIn URL
- Status tracking fields: Lead Status (New/Contacted/Responded/Qualified/Disqualified), Last Contact Date, Response Date
- Pain point fields: Identified Pain Points (multi-select or long text), Pain Point Source, Confidence Score
- Email tracking fields: Email Sent Date, Email Subject, Email Body Preview, Open Status, Reply Status
- Automation fields: Pipeline Stage, Auto-Updated timestamp, Error Logs
- Views created: All Leads, New Leads, Pending Outreach, Awaiting Response, Responded, Qualified Pipeline
- API key generated and securely stored

3.2 Lead Search Module

Acceptance Criteria:

- Integration with at least one lead source (Apollo.io API, LinkedIn Sales Navigator, or custom scraping)
- Search filters aligned with Zaia ICP: Revenue \$500K-\$50M, Employee count 10-500, Industries (Retail, Healthcare, Fuel Stations, F&B, Manufacturing), Location (UAE, Saudi Arabia, GCC)
- Automatic deduplication against existing CRM records
- Lead enrichment: Company website extraction, LinkedIn profile URLs, decision-maker identification
- Batch processing capability: Minimum 50 leads per run
- Rate limiting implemented to respect API quotas
- New leads automatically added to Airtable with 'New' status
- Error handling for failed lookups with retry logic

3.3 Pain Point Analysis Module

Acceptance Criteria:

- Web scraping of lead's company website (About page, Services, News/Blog)
- LinkedIn company page analysis if available
- Industry news scanning for relevant pain point signals
- LLM analysis with structured output: Max 500 tokens per lead analysis
- Pain point categorization aligned with Zaia services: Operational Efficiency, Customer Experience, Data Analytics, Process Automation, Cost Reduction
- Confidence scoring (High/Medium/Low) for each identified pain point
- Results stored in Airtable pain point fields
- Caching mechanism to avoid re-analyzing unchanged leads

3.4 Email Personalization Module

Acceptance Criteria:

- Template system with variable injection points: {company_name}, {contact_name}, {pain_point}, {industry}, {custom_hook}
- LLM personalization: Max 300 tokens per email generation
- Email structure: Subject line (max 50 chars), Opening hook (personalized), Pain point reference, Zaia value proposition, Clear CTA, Signature
- A/B testing capability: Minimum 2 template variants
- Preview functionality before sending
- Email stored in Airtable before sending
- Language support: English primary, Arabic secondary

3.5 Email Delivery Module

Acceptance Criteria:

- Integration with email service provider (SendGrid, Mailgun, or SMTP)
- Deliverability optimization: SPF, DKIM, DMARC configuration verified
- Sending limits: Maximum 50 emails per day initially, configurable
- Sending schedule: Randomized delays between emails (2-5 minutes)
- Time zone awareness: Send during business hours of recipient's location (UAE: 9AM-5PM GST, Saudi: 9AM-5PM AST)
- Warm-up protocol documentation for new sending domains
- Bounce handling: Automatic status update for hard bounces
- Unsubscribe mechanism compliant with regulations
- Sent timestamp recorded in Airtable

3.6 Response Monitoring Module

Acceptance Criteria:

- Inbox monitoring: Check for replies every 15 minutes
- Response detection: Match incoming emails to sent outreach by thread/subject
- Response classification: Interested, Not Interested, Out of Office, Bounce, Other
- Highlighting system: Flag positive responses for immediate sales team attention
- Notification: Slack/Email alert for positive responses
- Response content preview stored in Airtable
- Auto-pause outreach to leads who respond

3.7 CRM Sync Module

Acceptance Criteria:

- Real-time status updates when response detected
- Lead status progression: New → Contacted → Responded/No Response
- Response date and content logged
- Activity log maintained: All pipeline actions timestamped
- Error recovery: Failed updates queued for retry
- Audit trail: All changes tracked with source (manual vs. automated)

4. Technical Requirements

4.1 Token Optimization

- Total LLM tokens per lead cycle: Maximum 1,000 tokens
- Pain point analysis: 500 token limit with structured prompt
- Email generation: 300 token limit with template-based approach
- Response classification: 200 token limit
- Batch processing where possible to reduce API overhead
- Caching of repeated analyses (industry pain points, company research)

4.2 Pipeline Efficiency

- Maximum 6 steps from lead discovery to CRM update
- Parallel processing: Lead enrichment and pain point analysis can run concurrently
- Failure isolation: Single lead failure should not stop pipeline
- Resume capability: Pipeline can restart from last successful step
- Configurable batch sizes for each module

4.3 Anti-Spam Compliance

- Email authentication: SPF, DKIM, DMARC properly configured
- Sending volume: Start with 20/day, scale gradually over 4 weeks
- Email content: No spam trigger words, proper HTML/text ratio
- Unsubscribe: One-click unsubscribe link in every email
- List hygiene: Remove bounces immediately, verify emails before sending
- Engagement tracking: Monitor open rates, reduce sending if below 10%
- Domain reputation: Dedicated subdomain for outreach (outreach.zaia.cloud)
- Warm-up schedule documented and followed

5. Pipeline Architecture

The system follows this sequential flow:

| Step | Component | Action | Constraint |
|------|---------------|-------------------------------------|------------------------------|
| 1 | Lead Search | Discover leads from Apollo/LinkedIn | ICP filters applied |
| 2 | CRM Create | Add new lead to Airtable | Status: New |
| 3 | Pain Analysis | LLM analyzes company pain points | Max 500 tokens |
| 4 | Personalize | LLM generates custom email | Max 300 tokens |
| 5 | Send Email | Deliver via SendGrid/Mailgun | Business hours, rate limited |
| 6 | Monitor | Check inbox for responses | Every 15 minutes |
| 7 | Update CRM | Sync response to Airtable | Auto-classification |

Flow: Lead Search → CRM → Pain Analysis → Personalize → Send → Monitor → Update CRM

6. Deliverables

- Functional Airtable base with all specified fields and views
- Lead search module with configurable ICP filters
- Pain point analysis script with token tracking
- Email personalization engine with template system
- Email delivery integration with rate limiting
- Response monitoring service with classification
- CRM sync module with error handling
- Configuration file for all adjustable parameters
- Documentation: Setup guide, API reference, troubleshooting
- Test suite covering each module

7. Success Metrics

| Metric | Target | Measurement |
|-----------------------------|------------------|-----------------------------------------------|
| Pipeline completion rate | > 95% | Leads processed without error / Total leads |
| Token efficiency | < 1000 per lead | Average tokens used per complete cycle |
| Email deliverability | > 95% | Delivered emails / Sent emails |
| Response detection accuracy | > 98% | Correctly matched responses / Total responses |
| Processing time | < 5 min per lead | Time from search to email sent |
| System uptime | > 99% | Operational hours / Total hours |

8. Additional Notes

- All API keys and credentials must be stored in environment variables, never in code
- Implement comprehensive logging for debugging and audit purposes
- Pipeline should be deployable as a scheduled job or triggered manually
- Consider using a workflow orchestration tool (n8n, Make, or custom scheduler)
- Ensure compliance with GDPR and regional data protection requirements
- Plan for scalability: architecture should support 500+ leads per week