IPA Tech Scope Automation System

1. Project Overview

Project Summary

Develop an AI-powered automation system for generating technical scoping documents for IPA projects. The solution captures client discovery information from various sources (transcripts, emails, threads), leverages AI to generate structured scope documents, and implements human-in-the-loop validation to ensure accuracy. The workflow reduces turnaround time from the current 1 week to a matter of hours while maintaining quality through expert review and iterative refinement.

Date Created

October 15, 2025

2. Stakeholders

MyZone AI Team:

- Justin Adamski - Solutions Strategist & Developer
- Marcos Beliera - AI Automation Support

3. Current Situation

Process Mapping

Currently, technical scope documents are manually created by technical experts after discovery calls and client communications. The process involves:

- Reviewing discovery call notes and transcripts
- Gathering additional context through email threads and follow-up conversations
- Manually drafting scope documents using templates
- Multiple revision cycles with stakeholders
- Time to delivery: approximately 1 week per scope

Time, Effort, and Cost Currently Involved

- Technical expert time: 2 hours per scope document

- Back-and-forth communication cycles: 2-3 days
- Review and approval process: 1-2 days
- Total turnaround time: 5-7 business days

Pain Points

- Manual document creation is time-consuming and repetitive
- Inconsistent scope quality and formatting across different team members
- Difficulty tracking multiple scopes in progress simultaneously
- Client information scattered across multiple sources (calls, emails, Slack)
- Delayed project kickoffs due to slow scope turnaround
- Risk of missing critical details during manual transcription

Existing Tools & Systems

- Google Workspace (Docs, Drive) for document creation and storage
- Email and Slack for client communications
- Manual note-taking during discovery calls
- Standard scope template (current document format)

4. Proposed Solution

Automation Scope

Primary Automation Target: Automated generation of technical scoping documents for IPA project proposals, transforming unstructured client discovery data into structured, budget-ready proposals through AI-powered document generation and human-in-the-loop validation.

Core Workflow:

1. **Automated Scope Generation**: AI agent processes input data (transcripts, email threads, or combined sources) using templatized document structure and JSON schema output to generate initial scope drafts
2. **Human-in-the-Loop Validation**: Technical experts review generated scopes with approve/remake options; remake allows resubmission with modification instructions. Either manual or automatically send follow up questions to client.
3. **RAG System Integration**: Knowledge base of historical scopes and best practices enhances generation accuracy and consistency
4. **Intelligent Clarification**: System identifies gaps and generates follow-up questions for PMs or clients to refine scope accuracy before finalization

Tech Stack

- **Workflow Orchestration**: N8N for automation workflow management
- **AI Processing**: Flexible AI API integration (Claude, GPT, Gemini) for document generation, summarization, and context extraction
- **Vector Database**: Supabase (free tier) for RAG system implementation and storing current scopes in pipeline
- **Knowledge Base**: Historical IPA project database and best practices library stored in vector format
- **Document Generation**: Google Docs API for template-based document creation
- **Storage**: Google Drive API for document management and sharing
- **Database**: Supabase for storing document metadata, template variables, and workflow state
- **Authentication**: Google Account credentials for API access

Data Sources

Primary Inputs:

- Discovery call transcripts or notes (or direct connection in v2)
- Email threads with client communications (or direct connection in v2)
- Slack conversation exports (or direct connection in v2)
- Asana communication exports (or direct connection in v2)
- Any combination of the above sources
- Modification instructions from human reviewers

Secondary Data:

- Historical IPA project scopes (vectorized in Supabase)
- Best practices library and technical knowledge base
- Internal benchmarks for labor/timeline estimation
- Pricing databases for tools and services

Automation Outputs

- Professional scope documents in Google Docs format following standard template
- JSON-structured scope data for database storage
- Budget breakdowns (labor hours, subscription costs, total project cost)
- Project timelines and milestone schedules
- ROI analysis with cost-benefit calculations
- Follow-up question sets for scope clarification (when needed)

Integration Points

- **Google Workspace**: Docs API for document generation, Drive API for storage and sharing
- **N8N**: Workflow orchestration and trigger management
- **Supabase**: Vector database for RAG, document metadata storage, workflow state management
- **AI APIs**: Claude/GPT/Gemini for natural language processing and generation
- **Email/Slack APIs**: For capturing client communications and delivering outputs

Security Considerations

- Google OAuth 2.0 authentication for API access
- Supabase row-level security for document access control
- API keys stored securely in N8N environment variables
- Client data handled in compliance with privacy requirements
- Document access restricted to authorized team members only

Scalability

- Supports multiple simultaneous scope generation processes
- Vector database scales with historical scope additions
- Modular AI provider integration allows switching based on performance/cost
- Template system enables easy addition of new scope types
- Database structure accommodates growing project pipeline

Risks

- **AI Accuracy**: Risk of misinterpreting client requirements or generating incomplete scopes (mitigated by human-in-the-loop review and RAG system)
- **Input Quality**: Poor quality transcripts or incomplete email threads may result in suboptimal initial drafts
- **API Dependencies**: Google API rate limits or service interruptions could delay workflow
- **Adoption**: Team members need training on review/remake process and providing effective modification instructions
- **Context Loss**: Complex technical requirements may not be fully captured in initial generation (mitigated by clarification mechanism)

Assumptions & Requirements

- Client discovery information will be provided in readable format (transcripts, email text)
- Technical experts are available for review within 24 hours of scope generation
- Google Workspace access is available for all team members
- Supabase free tier limits are sufficient for initial implementation
- Historical scope documents can be digitized and vectorized for RAG system

5. Project Plan

Timeline & Milestones

Phase 1: Foundation & Setup (0.5 week)

- Google API access and authentication setup (Drive, Docs)
- Supabase account creation and database schema design
- N8N environment configuration and credential storage
- Historical scope collection and preparation for vectorization
- Template structure analysis and JSON schema definition

Phase 2: Core Automation Development (1 weeks)

- AI agent development for parsing input sources (transcripts/emails)
- JSON schema extraction and validation logic
- Google Docs API integration for template-based document generation
- Basic workflow in N8N from input to initial scope generation
- Testing with sample discovery data

Phase 3: Human-in-the-Loop Implementation (0.5 week)

- Database implementation in Supabase for document tracking and template variables
- Approve/remake interface development
- Remake logic: resubmission with modification instructions
- Document versioning and state management
- Client delivery mechanism via Google Drive sharing

Phase 4: RAG System Integration (1.5 weeks)

- Vectorization of historical scopes and best practices
- Supabase vector store configuration
- RAG retrieval logic integration into scope generation
- Testing accuracy improvements with historical context
- Fine-tuning retrieval parameters

Phase 5: Clarification Mechanism (0.5 week)

- Gap analysis logic to identify missing information
- Question generation system for PMs/clients
- Follow-up question routing and response integration
- Reprocessing workflow with additional context
- Testing end-to-end clarification cycle

Phase 6: Testing & Refinement (0.5 week)

- End-to-end workflow testing with real project data
- User acceptance testing with technical team
- Performance optimization and error handling
- Documentation creation for team processes

Phase 7: Training & Deployment (0.5 weeks)

- Training sessions for technical team on review/remake process
- PM training on providing effective modification instructions
- System monitoring setup for workflow tracking
- Go-live support and initial feedback collection

Total Timeline: ~5 weeks

Deliverable Checkpoints

- Week 1: API integrations functional, N8N environment ready
- Week 2.5: Basic scope generation working with test inputs
- Week 3.5: Human-in-the-loop workflow operational
- Week 5: RAG system integrated and improving accuracy
- Week 6: Clarification mechanism functional
- Week 7: System tested and ready for production
- Week 7.5: Team trained and system deployed

NOTE: *This timeline does not include any periods waiting on client confirmations, data access, or availability of team members for testing and training.*

6. Budgets

Setup Costs

- **Development hours**: 20-40 hours @ $80/hour = $1,600 - $3,200
- **User training/Communication:** 0 hours
- **Project Management:** 0 hours

Subscription & Licensing Costs

- **N8N**: ~$20/month
- **AI API** (Claude/GPT/Gemini): ~$50/month (usage-dependent)
- **Supabase**: $0/month (free tier)
- **Google Workspace**: Existing (no additional cost)

Total Project Cost

- **Total setup cost**: $1,600 - $3,200
- **Monthly operating cost**: ~$70

7. ROI Analysis

Current Process Cost

- Technical expert time: 2 hours/scope × $80/hour = $160/scope
- Average scopes per month: 8
- Annual scope creation cost: $15,360
- Delay costs (slower project starts): ~$10,000/year
- **Total annual cost**: ~$25,200

NOTE: *These metrics are based on initial estimates and assumptions and may be refined as implementation progresses.*

Approval workflow

Written confirmation via email suffices for approval of this plan.

8. Appendices

Technical Documentation References

- **N8N Documentation**: https://docs.n8n.io/
- **Google Docs API**: https://developers.google.com/docs/api
- **Google Drive API**: https://developers.google.com/drive/api
- **Supabase Documentation**: https://supabase.com/docs
- **Supabase Vector/pgvector**: https://supabase.com/docs/guides/ai/vector-columns
- **Claude API**: https://docs.anthropic.com/
- **OpenAI API**: https://platform.openai.com/docs/
- **Google Gemini API**: https://ai.google.dev/docs

Historical Scope Templates

- Current IPA template structure (reference document)
- Sample completed scopes for RAG training