Case Study: AI-Powered EPC Proposal Automation System

The 2-Day *Engineering Bottleneck*

The "Senior Engineer" Trap

Highly skilled engineers were spending 16+ hours per week on non-billable tasks: formatting documents, sizing tanks manually, and copy-pasting specs. This created a massive bottleneck, sales had to wait for engineering availability to send a simple quote.

The Cost of Manual Work

Internal analysis revealed the cost per technical proposal was approximately $150 - $200 (₹12,000+) in engineering time alone. With a win rate of 20%, the firm was burning massive cash on failed bids.

Scalability Ceiling

The team physically could not produce more than 5 complex proposals a week. When lead volume increased, they had to turn down opportunities or send "generic" brochures that didn't convert.

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The *Old Way*

24 - 48 hours process

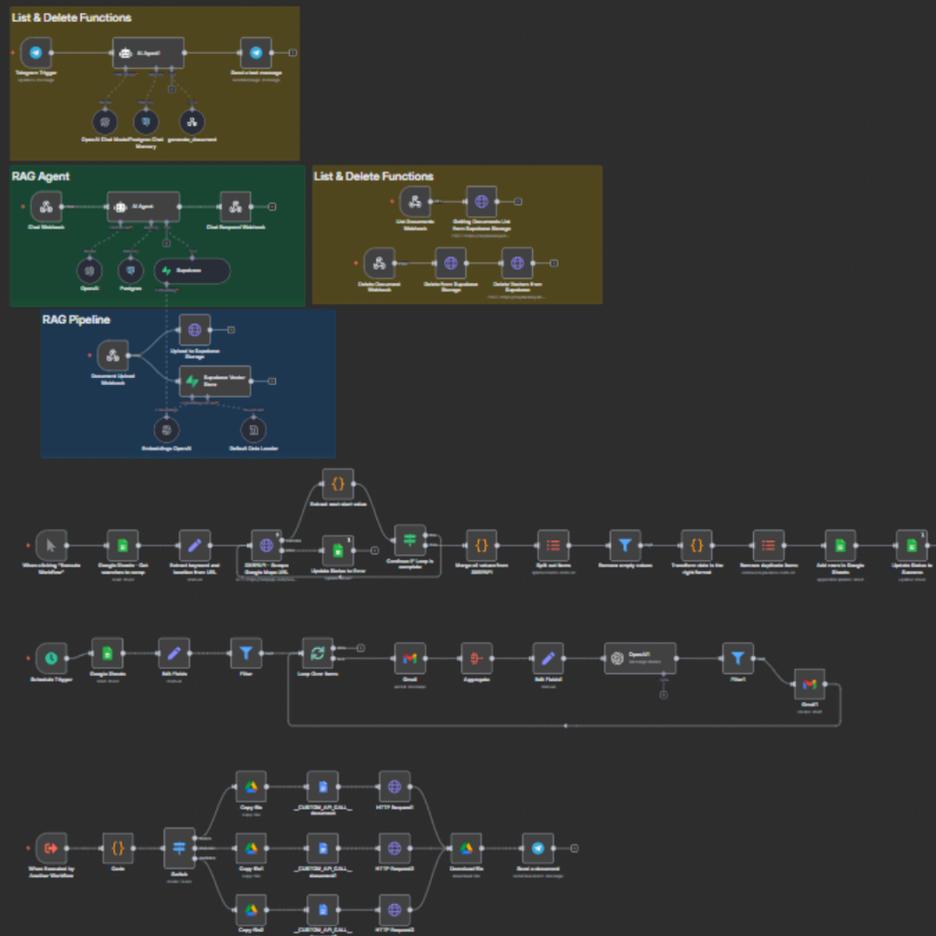Lead → Tech → Costing → Format → Send

The Private *AI Architecture*

We didn't use ChatGPT. We built a secure, self-hosted RAG (Retrieval-Augmented Generation) engine inside the client's infrastructure.

RAG for Past Proposals

Brain for Calculations

Enterprise Privacy

Approval and Send to Client

The Private *AI Architecture*

Historical Intelligence (The Brain)

We ingested 100+ historical successful proposals into a private Vector Database. The AI references only approved engineering logic, ensuring 100% technical accuracy and zero hallucinations.

Orchestration Layer (n8n)

The workflow triggers automatically from the CRM.
It sequentially handles:

- Technology Selection: Matches raw water quality to the right treatment process.
- Sizing & BOQ: Calculates tank sizes and equipment lists instantly.
- Drafting: Generates a 20-page formatted Word Doc.

Enterprise Privacy

Zero data leaves the client's VPS. The entire architecture is self-hosted, ensuring complete intellectual property protection.

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Operational *Impact*

	Manual Process (Old)	AltoStudio Automation (New)
Drafting Time	2 Days (16 Hours)	45 Minutes
Cost Per Proposal	~$150 (Salary)	<$2 (Compute Cost)
Weekly Capacity	5 Proposals	Unlimited

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What our *Client says*

" This system didn't just save time; it allowed our sales team to bid on 10x more projects without hiring a single new people for proposal generation. It fundamentally changed our unit economics. "

— EPC Director

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