AI-based Multi Agent for RFP Response Automation

Executive Summary

This challenge focuses on optimizing the B2B RFP response process for a leading industrial manufacturer using Agentic AI. Participants must design a multi-agent system that automates RFP identification, product matching, and pricing estimation to improve response speed and accuracy.

About the Business

A large Industrial products manufacturing firm (client) with a business across Fast moving electrical goods (FMEG), Wires and Cables has seen considerable growth over the last 5 years. The growth has been driven by large Business to business (B2B) Request for proposals (RFPs) and tenders from infrastructure build out in India. The client wishes to further develop the B2B business by increasing the number of RFP qualifications and responses.

Context on B2B RFPs

Typically, large projects – e.g., government projects are launched by government departments or public sector undertakings (PSUs). These projects are executed by lumpsum turnkey (LSTK) project executors (PSUs or private enterprises). The LSTK project executors in raise RFPs for material supplies – e.g., wires, cables, other materials as RFPs to be supplied by Original Equipment Manufacturers (OEM) vendors.

A typical RFP consists of technical scope of supply (quantity of wires / cables), technical specification (for wires and cables), test requirements and acceptance tests to be conducted before accepting the delivery of wires and cables (refer sample RFP). OEM vendors bid for these tenders and lowest priced tender is awarded the contract. The client is one of the large wires and cables OEM in India, who regularly bid for such RFPs.

B2B RFP response process

• Once the RFP is received to the client Sales Team, they qualify the RFP based on the date for submission, past experience and product coverage.
• Qualified RFPs are passed on to the Product Technical Team to match the client product SKUs to RFP product requirements. Refer sample of product specs.
• The Product Technical Team finalizes the client product SKUs, which are the closest matches.
• This is then worked on by the Pricing Team, which estimates the price of the products and additional costs required to meet the testing and acceptance test requirements at project site.
• The Sales Team consolidates the inputs from Product Technical Team and Pricing Team to submit the RFP response to the LSTK project executor.
• In case the client product SKUs has a low match for RFP product requirement, an internal request for new made to order SKUs is prepared to meet the RFP product requirements.

Bottlenecks in the B2B RFP Response

• The entire RFP response process is manually driven – with manual handoff between each team.
• In many cases the Sales Team may not be aware of the release of RFPs by LSTK project executors on time. These are typically released on LSTK project executor's website, received on emails. Delay in initiating response to RFPs would certainly mean lower chances of winning.
• The technical matching of RFP requirements to Product SKUs is manually done. This requires knowledge of technical standards, specifications, and product knowledge.
• While standards, specifications and product details are well documented, the technical team is often concurrently managing multiple RFPs and takes a lot of lead time to turn around their response. The Pricing Team can work on the price only after technical team's responses.

The Problem Statement

Business Problem:

The goal is to scale RFP responses using AI.
The client wants to further drive of the B2B business channel. Given that their past growth has been on B2B RFPs, they have now significant credentials and see their team having the "right to win" in

this segment. Given the rapid growth in the past few years, they are now facing bottlenecks in RFP response process which are impacting their ability to respond to RFPs on time.

Upon analyzing the past wins and losses on large RFPs, the client has identified the following.
- 90% of the wins correlated to RFPs which were received and actioned on time.
- 60% of the wins correlated to RFPs where adequate time was provided for the technical team to match product requirements with RFPs.
- Technical product SKU matching RFP requirements takes the most time in the process.
- Delays in RFP submission significantly reduced the chances of winning.

The client wants to improve the number of RFPs responses (per year) and the timely response by using an Agentic AI approach. The solution must simulate the B2B RFP response process through a Sales agent and Technical Agent which automates the process of identifying an RFP on time and maps the right SKUs with the RFP.

Goal:

Teams must design an Agentic AI solution where the Sales Agent:
1. Scans a set of predefined URLs to identify the RFPs which are due to be submitted in the
2. next 3 months.
Summarizes the requirement of the RFP in terms of products to be shared with Technical Agent
3. Summarizes the testing and acceptance requirement to be shared with the Pricing Agent

Key Deliverable:

A) showcasing the end-to-end journey from RFP identification to collating the RFP response from technical and pricing agents.

Agentic AI Roles:

1. Main Agent (Main Orchestrator)

• Prepares a summary of an identified RFP to be shared with Technical and Pricing Agent
• Summary shared with technical and pricing agent needs to be contextual to their role.
• Receives the response from the Technical and pricing agent to consolidate the overall response of the RFP.• The overall response of the RFP needs to contain the OEM product SKUs suggested, their price and the costs for tests required in the RFP.
• Starts and ends the conversation.

2. Worker Agents:

○ Sales Agent:

▪ Identifies the RFPs which are due for submission in the next 3 months.
▪ Scans identified web URLs to summarize RFPs with their due dates.
▪ Identifies 1 RFP to be selected for response and sends this to the Main agent.

○ Technical Agent:

▪ Receives the summary of RFP and RFP document from the main agent.
▪ Summarizes the products in Scope of supply.
▪ Recommends top 3 OEM products which match each of the product in Scope of supply, show a “Spec match” metric (in %) for each of OEM product recommendations.
▪ Recommendation of top 3 OEM products come from a repository of product datasheets. Refer sample of product specs.
▪ The spec match metric should reflect the closeness with which the recommended OEM product matches the RFP product specs considering that all the required specs have an equal weightage.
▪ Prepares a comparison table of RFP spec parameters requirements, spec values for Top 1,2 and 3 OEM product recommendations for each RFP product.
▪ Select the top OEM product which closely matches the RFP products for all items in scope of supply based on the spec match metric.
▪ Final table of products in Scope of Supply and recommended OEM product SKUs

▪ Send this table to main agent and the pricing agent.

○ Pricing Agent:
▪ Receives the summary of the tests and acceptance tests to be done for the product from the main agent.
▪ Receives the product recommendation table from the technical agent.
▪ Pricing agent assigns a unit price for each product based out of a dummy pricing table and price for each test based out of a dummy services price table.
▪ Consolidates the total material price and services price for every product in scope of supply.
▪ Send the consolidated price table to Main agent.

Data & System Assumptions

• RFP Data – Teams can download the RFPs from internet. 2 sample RFPs have been provided as a reference.
• OEM product data sheets – Teams can download the cables datasheets for any of the leading cable manufacturer websites – a few sample URLs have been provided as a reference.
• Product and Tests pricing data:
Teams must create synthetic data for price of products, type of tests and the price of each of the tests.
• Scanning RFP from websites – The teams can stand up sample web pages which show the RFPs for the sales agent to scan and summarize.