
 Marwadi University Marwadi Chandarana Group	NAAC 	Marwadi University Faculty of Engineering and Technology Department of Information and Communication Technology	
Subject: Capstone Project (01CT0715)	Ideation and stakeholder need analysis - Intermediate Review		
Ideation and stakeholder	Date: 25/09/2025	Enrolment No: 92200133013 & 92200133017	

Stakeholder Identification



For the “Chatbot for Import–Export” project, the main stakeholders are:

- **External customers / buyers**
People in other countries who contact Harivarsh Import & Export Pvt. Ltd. to ask about products, prices, shipping, certificates and regulations.
- **Internal staff**
Sales and support employees who currently answer these questions manually by email or phone.
- **Company management**
Managers who want better data on customer queries to plan products and markets.
- **Technology team / developers**
They build and maintain the chatbot and web platform and need a system that is scalable, secure and easy to update.

Needs Analysis

Each of the stakeholders identified above has specific needs and challenges that our system should address:

- **External customers / buyers**
They often come from different countries and languages. They need quick, accurate answers about products, prices, shipping rules, and required documents without waiting for email replies or phone calls. They also want to ask questions in their own language or by voice.
- **Internal staff**
Staff spend a lot of time answering repeated questions. They need a tool that can handle common queries automatically so they can focus on complex or high-value tasks.
- **Company management**
Managers want to see what customers are asking, which products are most in demand, and which countries generate the most enquiries. They need a system that records and categorises questions to help with planning.

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- **Technology team / developers**



They need a system built with open, modern ICT tools so it is secure, scalable, multilingual and easy to maintain or improve.

Problem Statement

Harivarsh Import & Export currently handles customer and partner queries mainly through phone calls, emails, and manual responses. This approach creates several issues:

- **Delay in Responses:** International buyers often wait hours or days for answers about products, certificates, and shipping.
- **Language Barriers:** Many customers speak different languages, but the company's team mainly responds in English or Hindi.
- **Repetitive Questions:** Staff spend time answering the same questions repeatedly instead of focusing on strategic tasks.
- **Lack of Data Insights:** Management cannot easily track what information is most requested or which countries show the highest demand.
- **Limited Availability:** Support is mostly available only during office hours, which is not ideal for global trade.

These problems reduce customer satisfaction, increase staff workload, and slow down business growth. Therefore, a system is needed that can automatically answer common import/export and company-related queries, support multiple languages and voice input, and give management useful insights from the questions asked.

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Objectives

The main objectives of the proposed ICT solution are:

- **Automate Responses:**

Develop a chatbot that can instantly answer common questions from buyers, suppliers, and partners about products, certification, pricing, and shipping.

- **24×7 Global Support:**

Provide round-the-clock assistance to international customers, eliminating delays caused by time zone differences.

- **Multi-Language & Voice Support:**

Enable text and voice interaction in multiple languages to overcome communication barriers with overseas stakeholders.

- **Reduce Staff Workload:**



Free company staff from repetitive queries so they can focus on higher-value activities such as new client acquisition and compliance.

- **Insight Generation:**

Collect and analyse data from user interactions to identify frequent requests, emerging markets, and product demand trends.

- **Integration with Existing Systems:**

Seamlessly integrate the chatbot with Harivarsh's website and internal databases for accurate, up-to-date information.

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Solution Ideation / Proposed Solutions

The proposed capstone project, **“Chatbot for Import–Export,”** combines a modern web interface with two intelligent conversational agents to meet the information needs of customers, partners, and internal staff. The following three solution components are proposed:

1. Interactive Website for Harivarsh Import & Export

A responsive web platform developed using React.js with TypeScript, styled for professional presentation and deployed on Vercel.

Purpose: Acts as the digital front door for Harivarsh Import & Export, displaying products, services, and compliance credentials. It also provides an entry point to the chatbots.

2. AI-Driven Import–Export Chatbot



A multilingual chatbot built with Node.js, Express, React.js and MongoDB Atlas. Deployed on Vercel (frontend) and Render (backend), it delivers real-time answers on export/import procedures, regulations, certifications, and trade lanes.

Purpose: Helps external stakeholders (buyers, suppliers, agents) quickly access reliable import–export information without manual staff intervention.

3. Python-Based Company Information Chatbot

A separate conversational agent developed in Python specifically for Harivarsh company data. It answers queries like “Which countries receive your grains?”, “Do you export farm equipment to Europe?”, “When was the company founded?” etc.

Purpose: Gives transparent, up-to-date company information to clients, regulators, and new partners.

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ICT Relevance & Impact

This project sits squarely in the **Information and Communication Technology (ICT)** domain because it fuses several core ICT areas—**web engineering, cloud deployment, and artificial intelligence / natural-language processing**. By building a responsive React + TypeScript website and hosting it on Vercel with a Node.js/Express backend on Render, the project applies modern cloud-native practices. The integration with **MongoDB Atlas** demonstrates the use of scalable, globally distributed databases—another key ICT competency.

The two chatbots show how **AI and NLP** can transform user interaction. The import–export chatbot uses multilingual and voice support to remove language barriers for customers worldwide. The Python-based company chatbot demonstrates how enterprise knowledge bases can be converted into conversational interfaces, reducing repetitive queries to staff and increasing transparency.

From a stakeholder perspective, these ICT features improve **communication, accessibility, and efficiency** for import–export clients, suppliers, and internal staff. Instead of relying on email or manual calls, stakeholders can get instant, accurate information on products, certifications, shipping, and company background.

Finally, the project highlights the **impact of ICT on traditional industries**. By introducing AI-driven self-service into an import–export company, it shows how digital transformation can streamline operations, strengthen customer relationships, and set a precedent for other SMEs in the sector to adopt similar ICT solutions.