 Marwadi University	Marwadi University Faculty of Technology Department of Information and Communication Technology	
Subject: Capstone Project (01CT1718)	Ideation and stakeholder	
InfoMate	Date: 22-09-2025	Enrolment No: 92200133003, 92420133001

Ideation and Stakeholder

1. Stakeholder Identification

The proposed project, called Infomate, will address a variety of stakeholders connected to the ICT Department:

1. Current Students (ICT Undergraduates & Diploma Students)

They need quick access to information about faculty contact information, lab schedules, achievements within the department, placements, curriculum subjects, and student club activities.

They are often unable to find the information they seek when faced with long PDF options or when department announcements are made indiscriminately.

2. New Admissions / Prospective Students

They need accurate and complete information about the ICT program structure, electives, facilities, placements and department achievements prior to admission.

They will sometimes depend on in-person or emailing a faculty for information or rely on an outdated brochure.

3. Parents / Guests / Visitors


They simply want to know about the department's vision, mission, curriculum, international experience and placement outcomes.

They need a straightforward, conversational interface that doesn't require clicking through a static web site or reading a long PDF.

4. Faculty and Administrative Staff

They are often inundated with repetitive and basic questions regarding where to find labs, subject specifics or placement details.

They would benefit from an automated assistant to alleviate some of the demands posed by those repetitive questions, and reduce the burden, allowing them more time for teaching, mentoring, and research.

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2. Needs Analysis

Based on the ICT Department Information PDF and supporting academic/industry studies:


- **Centralized Knowledge Access**
The department offers 10 specialized labs, 70+ IPRs, strong placement records, and an updated semester-wise curriculum. However, this information is stored in lengthy documents. Students and visitors require a query-based system for quick access.
- **Automation of FAQs**
McKinsey Digital (2022) reports that chatbot adoption in education can reduce repetitive administrative queries by up to 30%, improving efficiency. This is directly relevant to faculty members answering recurring questions about labs, subjects, and placements.
- **Student Engagement during Admissions**
EDUCAUSE Review (2023) highlights that AI-driven assistants improve new student engagement by providing instant answers to admission-related queries, improving decision-making for prospective students
- **Ease of Curriculum Navigation**
The B.Tech ICT curriculum includes 8 semesters with 40+ core courses and 20+ electives. Students struggle to locate specific subjects (e.g., "Which electives cover AI/ML?"). An interactive chatbot can simplify access to subject-level details.
- **Transparency & Accessibility**
IEEE education reports emphasize that AI-powered platforms help institutions maintain transparency and 24/7 accessibility of departmental data, improving trust among parents and stakeholders.

3. Problem Statement

"Despite having comprehensive ICT Department documentation (faculty details, labs, curriculum, achievements, placements), students, new admissions, and visitors face challenges in quickly retrieving relevant information. Faculty and staff are burdened with repetitive queries, reducing efficiency. There is a need for an AI-powered, document-driven chatbot that provides seamless, accurate, and interactive access to ICT departmental knowledge."

4. Solution Ideation

To address the problem, the following solutions are proposed:

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Infomate – Web-Based ICT Chatbot (Proposed Project)

- A React (frontend) and Node.js (backend) chatbot integrated with Gemini API for document parsing.
- Responds to natural language queries by extracting information directly from the ICT Department PDF (curriculum, faculties, placements, labs, achievements).
- Example Queries:
 - “Who are the IoT faculty members?”
 - “What subjects are in Semester V?”
 - “What are the latest placement packages in ICT?”
- Impact: Improves accessibility, saves staff time, and enhances student/visitor experience.

5. Relevance to ICT Domain

The project aligns with current ICT trends and technological practices:

- **Artificial Intelligence (AI & NLP):** Uses Gemini API for natural language understanding and document retrieval.
- **Cloud Computing:** Deployment on platforms like Vercel/Render ensures scalability and high availability.
- **Web Development:** React and Node.js represent modern ICT software engineering practices.
- **Digital Education Transformation:** Reflects the global shift towards AI-powered student services, consistent with initiatives in smart campuses.

Potential Impact on ICT Field:

- Enhances student satisfaction and academic transparency.
- Reduces manual workload on faculty/staff.
- Serves as a model for other academic departments to implement AI-driven assistants.
- Encourages ICT adoption in higher education, aligning with national digital education goals.