

# Automated Client Communication System Using WhatsApp Business API and MERN Stack Integration

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**Abstract:** *In today's fast-paced digital era, businesses require seamless, scalable, and efficient communication channels to engage with their clients. This paper presents the design and implementation of an automated client communication system that integrates the WhatsApp Business API with a MERN (MongoDB, Express.js, React.js, Node.js) stack. The proposed system addresses a critical challenge faced during an industrial internship, where the manual process of sending messages to thousands of clients daily was inefficient and time-consuming. By leveraging WhatsApp's messaging infrastructure, the system enables sending personalized, template-based messages to large contact groups with a single click. Key features include real-time webhook configuration for message status updates, template management, group-wise contact uploads via Excel files, and a scheduling mechanism for future message delivery. This integration not only streamlines communication but also significantly reduces manual effort and operational time, thereby enhancing business outreach and productivity. The paper discusses the overall architecture, technical components, and implementation strategies, demonstrating the practicality and scalability of the solution in real-world business environments.*

**Keywords:** WhatsApp Business API, MERN Stack, Automated Messaging, Client Communication System, Message Scheduling, Contact Group Management, Real-Time Webhooks, Business Automation, Template Messaging, Node.js, React.js, MongoDB, Express.js, Digital Communication, CRM Integration

