ShopLINK

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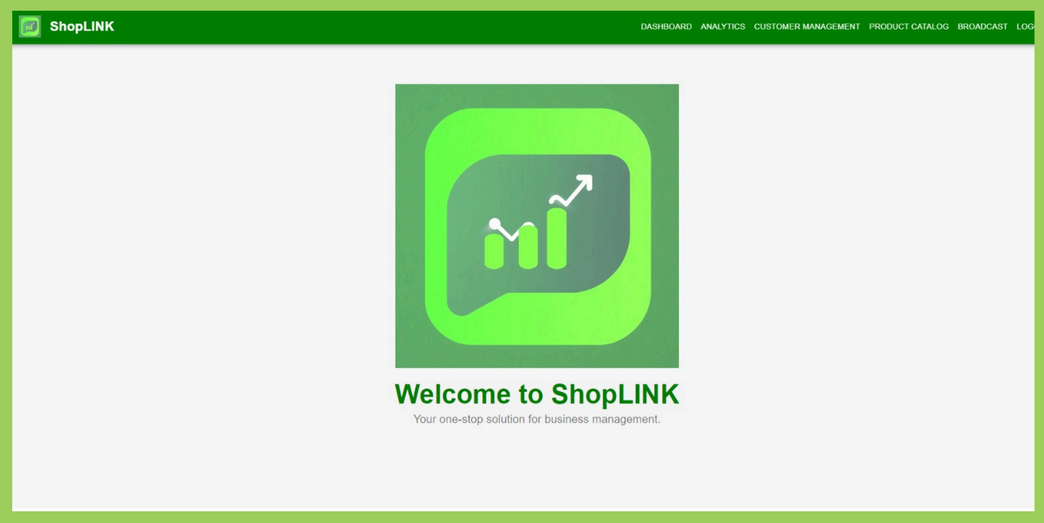
Introduction

With the rise of online shopping, businesses rely on platforms like WhatsApp for customer interactions, but face challenges in managing high message volumes and delivering personalized marketing. Our solution analyze interests through natural conversations. Using NLP , the system clusters customers into interest-based groups, enabling targeted advertisements and faster response times. This approach enhances customer satisfaction, improves marketing precision, and streamlines business operations, benefiting both businesses and their customers.

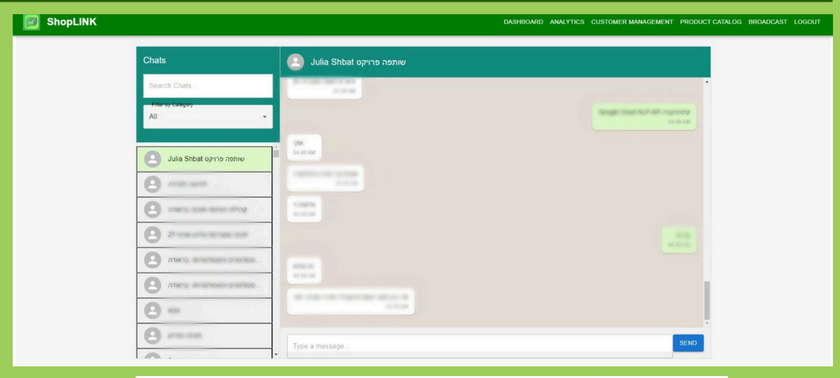


Objective

The goal of ShopLINK is to provide businesses with an intelligent tool to manage customer communication efficiently. The system enables customer segmentation, and product catalog management, ensuring a seamless and personalized customer experience. Ensures data consistency by verifying message presence before categorization. All messages are categorized and added to the data for improved analysis and automation.

Results

- Implemented an advanced segmentation algorithm that groups customers based on interests.
- Designed an intuitive dashboard for managing customer interactions, analytics, and marketing.
- Integrated real-time sales insights to assist business owners.
- The app includes the option to analyze and display the current situation, providing businesses with insights for better decision-making.

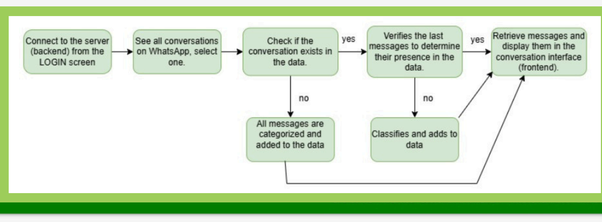


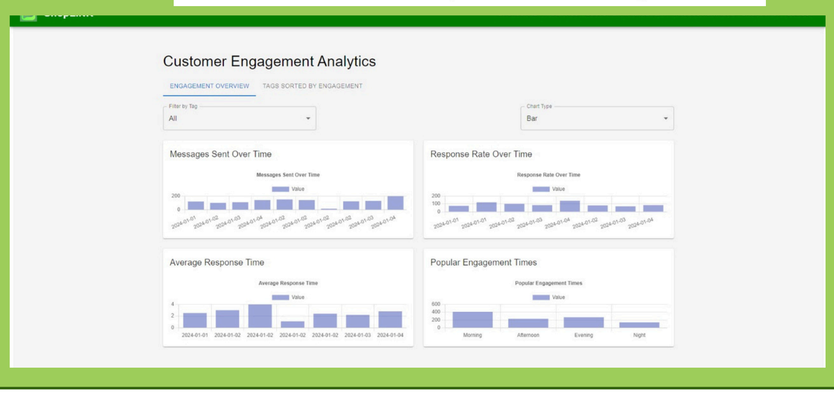
Methodology

To develop ShopLINK, our team adopted an Agile methodology, enabling iterative development and continuous feedback. The research was conducted through:

- Market Analysis: Evaluating existing WhatsApp-based customer management tools.
- Technology Selection: Choosing the MERN stack for full-stack development.
- Data Collection & Processing: Utilizing Google Cloud NLP API for text classification and clustering.
- Real-Time Communication: Implementing Axios for API communication between client and server and Socket.IO for real-time interaction between users and the backend.
- Testing & Refinement: Conducting usability testing and performance evaluations to optimize system functionality.

Special technologies applied include Natural Language Processing (NLP) for automated customer segmentation and AI-driven data categorization to improve marketing strategies and enhance business operations.





Implemented real-time graph updates: every time classification is updated, the graphs dynamically adjust to reflect the latest data.

Conclusion

Our team has made significant advancements in system capabilities by improving customer segmentation, real-time messaging, and data-driven insights.

- Expanding training datasets will enhance the accuracy of customer classification and engagement.
- Implementing automated response functionality will further streamline customer communication and support.

Related Literature

- Advantages & Disadvantages of Node.js : Why to Use Node.js?, https://www.simform.com/blog/nodejs-advantages-disadvantages/
- AI https://chatgpt.com/
- Express https://expressjs.com/
- Introduction to NodeJS https://nodejs.dev/en/learn/
- React https://react.dev/
- What is MERN Stack? “https://kenzie.snhu.edu/blog/what-is-mern-stack/”
- What Is MongoDB? https://www.mongodb.com/company/what-is-mongodb
- Why did we build Visual Studio Code? https://code.visualstudio.com/docs/editor/whyvscode