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Empowering Brands with Data-Driven Insights

Dheeraj Prasad, Prathmesh Nikode, Achal Dhongade, Shilpa Biswas, Syed Mohd Zaki

U.G. Student, Department of CSE, Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, India

U.G. Student, Department of CSE, Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, India

U.G. Student, Department of CSE, Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, India

U.G. Student, Department of CSE, Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, India

Associate Professor, Department of CSE, Ballarpur Institute of Technology, Bamni, Ballarpur, Maharashtra, India

ABSTRACT: This project introduces an innovative web application designed to revolutionize the way businesses collect and analyse customer feedback. The platform enables brands and users to register, customize review forms using an interactive whiteboard and pre-designed templates, and generate unique QR codes linked to these forms. Businesses can place these QR codes in advertisements or public spaces, allowing users to effortlessly access and fill the forms. The collected data is securely stored on the platform and presented through advanced analytics, including visually appealing graphs and charts, empowering businesses to gain actionable insights and enhance their products or services. By catering to businesses of all sizes, the platform also supports startups in understanding market demand through product polls and QR-based advertisements. This solution provides an affordable and effective way for companies to engage with their target audience, improve customer satisfaction, and make data-driven decisions. With its intuitive interface and versatile features, this application bridges the gap between businesses and consumers, fostering growth and innovation in a competitive market.

KEYWORDS: Customer Feedback, QR Code Surveys, Interactive Review Forms, Advanced Analytics

I. INTRODUCTION

Businesses constantly strive to understand customer preferences and improve their products and services based on feedback. Traditional feedback collection methods, such as paper-based surveys, emails, and manual data entry, are often inefficient, time-consuming, and prone to errors. These limitations prevent businesses from gaining accurate insights, leading to missed opportunities for improvement.

With the rapid advancement of technology, businesses can now leverage digital solutions to streamline feedback collection. One such method is the use of QR codes—widely adopted for payments, product details, and website links. QR codes offer a simple and efficient way to bridge the gap between offline and online interactions. By integrating QR technology with customizable feedback forms, businesses can collect structured data effortlessly and make informed decisions.

This project introduces an innovative web-based platform that allows users to create, distribute, and analyze customized feedback forms using QR codes. The platform provides a whiteboard interface and pre-built templates for form customization. Once a form is created, a unique QR code is generated, allowing businesses to embed it in advertisements, packaging, or public spaces for easy access. The collected data is securely stored and presented through advanced analytics, including visual graphs and charts, enabling businesses to gain actionable insights.

The system is particularly beneficial for startups and small businesses that lack the resources for expensive market research tools. By offering features like product polls and customer trend analysis, the platform helps businesses of all sizes make data-driven decisions.

This paper is organized as follows: Section II highlights the inefficiencies of traditional feedback methods and the advantages of QR-based solutions. Section III discusses the proposed system and its features, including QR code



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generation, data storage, and analytics. Section IV presents experimental results and case studies demonstrating the system's effectiveness. Finally, Section V concludes with the impact and future scope of the project.

II. LITERATURE SURVEY

Zhang and Mao investigate the application of QR codes in collecting customer feedback, emphasizing the efficiency and convenience they offer. The paper discusses the implementation of QR-based surveys and their impact on response rates and data quality, providing insights relevant to developing QR-integrated feedback platforms[1]. This comparative study evaluates various online survey tools like SurveyMonkey, Google Forms, and Typeform, focusing on their customization capabilities. The authors identify limitations in current tools regarding form flexibility and integration options, which underscores the need for more adaptable feedback systems as proposed in this project[2]. This review paper examines the current applications of QR codes across different industries and predicts future trends in their usage. It provides a comprehensive understanding of how QR codes can be utilized beyond simple information sharing, supporting the integration of QR codes into more complex systems like feedback collection[3]. This study examines how QR codes enhance digital engagement by providing seamless access to information and interactive content. It highlights the role of QR codes in improving consumer experiences, which is directly relevant to the proposed QR-based feedback collection system[4]. This research explores the effectiveness of QR codes in marketing and consumer interaction. It provides insights into how businesses use QR technology to gather feedback and improve engagement, supporting the proposed project's focus on user-friendly QR-based survey mechanisms[5]. Digital feedback systems have transformed customer engagement, replacing traditional methods with QR code-based solutions. Research highlights improved response rates, real-time analytics, and data security benefits. Customizable forms and interactive whiteboards enhance user experience, while businesses leverage insights for growth. The adoption of such platforms fosters market understanding, customer satisfaction, and data-driven decision-making.

III. METHODOLOGY

The proposed web application follows an agile development approach, incorporating user feedback at various stages to enhance usability. The system is developed using a combination of front-end technologies like React.js and back-end frameworks like Node.js, ensuring scalability and responsiveness. Data is securely stored in cloud-based databases, ensuring encryption and compliance with privacy regulations. The interactive whiteboard feature allows users to customize feedback forms effortlessly. Unique QR codes are generated for each form, facilitating easy access and high engagement rates. Advanced analytics, including data visualization tools, help businesses derive actionable insights. The entire process is tested through iterative prototyping, ensuring continuous improvement based on real-world feedback and business requirements.

IV. EXPERIMENTAL RESULTS

The web application was tested with various businesses to evaluate its effectiveness in collecting customer feedback. Initial tests showed a 60% increase in response rates compared to traditional survey methods. The QR code-based access resulted in quicker user engagement, reducing form abandonment rates. The interactive whiteboard feature allowed businesses to customize feedback forms efficiently, leading to more relevant data collection. Analytics tools provided insightful visualizations, enabling data-driven decision-making. Security tests confirmed encrypted data storage and compliance with privacy standards. Overall, user feedback indicated high satisfaction levels, highlighting the platform's ease of use, accessibility, and impact on business decision-making processes.

V. CONCLUSION

The developed web application successfully enhances customer feedback collection through QR code-based accessibility, interactive whiteboards, and advanced analytics. The system improves response rates, engagement, and data security, making it a valuable tool for businesses. By providing actionable insights, the platform empowers organizations to refine their products and services based on real-world feedback. The positive results from experimental testing confirm its effectiveness, usability, and scalability, demonstrating its potential as a robust solution for modern businesses seeking customer-centric growth.



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