THE INTERNATIONAL JOURNAL OF SCIENCE, TECHNOLOGY AND ENGINEERING
Volume 1, Issue 1, January - June 2025

MCDOCELEB - AN MOBILE-BASED EVENT BOOKING APP FOR MCDONALD'S LINGAYEN

Authors:

Kenneth, F Villaruz
Student, Pangasinan State University, Alvear St., Poblacion, Lingayen, 2401 Pangasinan, Philippines
Kennethferminvillaruz@gmail.com

James, T Dalangin
Student, Pangasinan State University, Alvear St., Poblacion, Lingayen, 2401 Pangasinan, Philippines
jaylangit21@gmail.com

Chris Jericho, A Vila
Student, Pangasinan State University, Alvear St., Poblacion, Lingayen, 2401 Pangasinan, Philippines
vilajeff2015@gmail.com

Virgilio, A. Aquino
Faculty Member, Pangasinan State University, Pangasinan State University, Lingayen Pangasinan, Philippines
vaa@psu.edu.ph

Corresponding Author:

Kenneth, F Villaruz
Student, Pangasinan State University, Alvear St., Poblacion, Lingayen, 2401 Pangasinan, Philippines
Kennethferminvillaruz@gmail.com

Date of Submission:	**Date of Acceptance:**	**Date of Publication:**
April 2, 2025	May 10, 2025	June 30, 2025

ABSTRACT

The McDoCeleb project is a mobile-based event booking application developed for McDonald's Lingayen, Pangasinan, to address difficulties in booking events. Key issues identified include the absence of a centralized booking platform, limited customization options, and inefficiencies in manual processes. To resolve these, the app was developed using the Rapid Application Development (RAD) methodology, incorporating features like real-time availability tracking, integrated chat support, and customizable event packages. The system was implemented using React Native for mobile development, Node.js for backend services, and MySQL for database management. Acceptability testing, conducted on a 5-point Likert scale with 50 respondents, yielded a high score of 4.23, reflecting excellent user satisfaction. Customers highlighted the app's intuitive design, seamless functionality, and ability to personalize events as significant improvements over traditional booking methods. The app also facilitated instant booking confirmations, further enhancing the user experience.

Keywords: customer satisfaction, digital innovation. event booking, mobile application,

INTRODUCTION

In today's fast-paced digital landscape, businesses across industries continually explore leveraging technology for enhanced efficiency and improved customer experiences. The fast-food sector is no exception, with establishments like McDonald's recognizing the importance of integrating digital solutions into their operations. McDonald's Lingayen, a notable branch of the global fast-food giant in the Philippines, has long been committed to providing exceptional service to its patrons. As part of this commitment, the management at McDonald's Lingayen has

identified the need to modernize its party reservation processes to better meet its customers' evolving expectations.

According to Amaresan (2023), investing in customer service yields manifold benefits, including increased customer retention, higher sales revenue, and enhanced brand image. The financial advantages of excellent customer service are underscored, with notable reductions in customer acquisition costs and improvements in profitability. Furthermore, the impact of customer service on brand loyalty and customer lifetime value is emphasized, highlighting the role of positive customer experiences in fostering long-term relationships and driving business growth. Herrity (2023) underscores the paramount importance of customer service by highlighting eight compelling reasons why it should be a top priority for every company, including customer retention, employee satisfaction, brand reinforcement, and competitive advantage.

Traditionally, booking a party at McDonald's involved manual methods such as in-person visits or phone calls. However, these methods proved time-consuming and error-prone, often resulting in missed opportunities due to the increasing demand for party bookings. Additionally, the absence of a centralized booking system made it challenging for McDonald's Lingayen to manage reservations and provide timely updates to customers efficiently. The Buyers Edge Platform (2022) discusses how technology is transforming the restaurant industry, emphasizing the role of online and mobile ordering platforms, branded mobile apps, and social media analytics in enhancing customer experiences and operational efficiency. Moore (2024) discusses the many benefits of implementing a restaurant reservation system, particularly emphasizing its capacity to streamline operations, enhance guest experience, and boost financial outcomes.

This study aims to develop and evaluate McDoCeleb, a mobile-based event booking application for McDonald's Lingayen, with the primary objective of streamlining the party reservation process and enhancing customer satisfaction. Specifically, the research seeks to identify the key difficulties customers encounter when booking events at McDonald's Lingayen, develop a comprehensive mobile application that addresses these challenges through features such as real-time availability tracking and customizable event packages, and assess the acceptability level of the developed system among users through systematic evaluation. The study also aims to demonstrate how digital innovation can revolutionize event management in the fast-food industry and provide a model for other establishments seeking to modernize their booking processes.

METHODS

Research Design

The study utilized Descriptive and Developmental Research designs to analyze and develop McDoCeleb: A Mobile-Based Event Booking App for McDonald's Lingayen. Descriptive research design involves systematically collecting data to describe a population or phenomenon's characteristics, behaviors, and attributes, providing detailed insights without manipulating variables (Sirisilla, 2023). This approach was used to identify patterns, trends, and user preferences related to event booking at McDonald's Lingayen. Developmental Research Design focuses on the design, development, and refinement of a system or intervention, involving systematic testing, iteration, and improvement of software applications (Richey & Klein, 2007).

Data Collection

Data collection focused on gathering input from key stakeholders, including McDonald's Lingayen management and customers, using structured instruments such as questionnaires and surveys. The questionnaire contained both closed-ended and open-ended questions to facilitate the collection of both qualitative and quantitative data, providing insights into user requirements and areas for system enhancement. Surveys were conducted among a sample population of 50 randomly selected McDonald's Lingayen customers to assess their attitudes, opinions, and behaviors related to event booking services.

System Development Methodology

The study employed the Rapid Application Development (RAD) methodology to design and develop the McDoCeleb application. RAD was chosen due to its flexibility, speed, and iterative nature, allowing continuous improvements based on user feedback and system testing (LeBlanc, 2020). This methodology prioritizes speed, efficiency, and flexibility, making it ideal for projects that require rapid development and real-time refinements. RAD enables faster development and deployment through rapid prototyping and iterative testing, ensuring that the McDoCeleb app is developed quickly while maintaining quality and functionality.

For data analysis, the study employed weighted mean as a statistical technique to analyze user feedback and evaluate the performance and acceptability of McDoCeleb. The weighted mean assigns varying levels of importance to individual ratings, ranging from five (Excellent/Highly Acceptable) to one (Poor/Not Acceptable), providing a detailed and accurate analysis of the system's effectiveness and user satisfaction. The acceptability was measured using a 5-point Likert scale with the following interpretation: 4.21-5.00 (Excellent/Highly Acceptable), 3.41-4.20 (Very Good/Acceptable), 2.61-3.40 (Good/Moderately Acceptable), 1.81-2.60 (Fairly Good/Slightly Acceptable), and 1.00-1.80 (Poor/Not Acceptable).

Technical Implementation

The McDoCeleb system was developed using modern web and mobile technologies to ensure scalability, performance, and user experience. The mobile application was built using React Native framework, providing cross-platform compatibility for both iOS and Android devices. The backend services were implemented using Node.js with Express.js framework, ensuring efficient API development and real-time data processing. MySQL database management system was utilized for data storage, providing reliable data persistence and efficient query processing. The web-based administrative panel was developed using React.js framework with responsive design principles to ensure accessibility across different devices and screen sizes.

Data Analysis

For data analysis, the study employed weighted mean as a statistical technique to analyze user feedback and evaluate the performance and acceptability of McDoCeleb. The weighted mean assigns varying levels of importance to individual ratings, ranging from five (Excellent/Highly Acceptable) to one (Poor/Not Acceptable), providing a detailed and accurate analysis of the system's effectiveness and user satisfaction. The acceptability was measured using a 5-point Likert scale with the following interpretation: 4.21-5.00 (Excellent/Highly Acceptable), 3.41-4.20 (Very Good/Acceptable), 2.61-3.40 (Good/Moderately Acceptable), 1.81-2.60 (Fairly Good/Slightly Acceptable), and 1.00-1.80 (Poor/Not Acceptable).

Customer Difficulties in Event Booking

The study revealed several key difficulties customers encounter when booking events at McDonald's Lingayen. The primary challenges include the absence of a centralized online booking platform, forcing customers to rely on manual methods such as phone calls or in-person visits, which are time-consuming and inefficient. Limited availability information, particularly during peak periods like weekends and holidays, makes it challenging for customers to secure their preferred event dates and times. The limited customization options for themes, menus, and decorations frustrate customers who wish to personalize events according to specific preferences or dietary needs.

Additional challenges include the inconvenience of requiring in-person arrangements or phone calls when customers prefer online booking systems, service delays during busy times that negatively impact the party experience, and the absence of a real-time booking confirmation system leading to uncertainty and confusion. The current manual booking process also lacks comprehensive information about event packages, pricing, and availability online, making it difficult for customers to make informed decisions about their event planning needs.

RESULTS

System Development and Features

McDoCeleb is a comprehensive mobile-based event booking application developed to address the challenges identified in booking events at McDonald's Lingayen. The system features both web-based administrative components and a mobile application for customers, providing a complete solution for event management.

Administrative Web System Features:

The administrative web system includes Dashboard Management that provides real-time metrics including successful events, valued customers, incoming events, and total revenue, giving administrators an immediate overview of system performance. Reservation Management allows administrators to view and manage current reservations and past events with comprehensive

details including customer information, event specifics, and payment status. Customer Management enables administrators to maintain customer databases with registration details, contact information, and booking history. Theme Management provides tools for managing available party themes, including adding new themes, updating prices, and maintaining theme-specific content. The Reporting System generates detailed reports on customers, event reservations, and revenue with export options in Excel, CSV, and PDF formats.

Mobile Application Features

The mobile application incorporates User Authentication with a secure registration and login system with OTP verification for enhanced security. The Event Booking Interface provides a comprehensive booking form allowing users to select themes, event types, dates, times, and specify visitor numbers. Real-time Availability features a calendar-based system showing available dates and time slots for event booking. Theme Selection offers a visual interface displaying available party themes with pricing information. Booking Management allows users to view event details, booking history, and receive notifications about their reservations. Profile Management enables personal information management with options to update contact details and preferences. The Review System provides an integrated feedback mechanism allowing users to rate and review their event experiences.

The system ensures seamless integration between the administrative web interface and the mobile application, providing real-time updates and maintaining data consistency across all platforms. The application architecture supports concurrent users with average response times of less than 2 seconds for booking operations and real-time synchronization between mobile and web platforms.

System Acceptability Evaluation

The acceptability of the McDoCeleb system was assessed through a survey conducted with 50 randomly selected respondents, including McDonald's customers, staff, and administrators in Lingayen, Pangasinan. Using a 5-point Likert scale, the survey evaluated the system's performance across six key dimensions: functionality, reliability, usability, efficiency, maintainability, and portability.

Table 1
Summary of Level of Acceptability of the Developed System

Indicator	Weighted Mean	Descriptive Equivalent	Descriptive Interpretation
Functionality	4.23	Excellent	Highly Acceptable
Reliability	4.22	Excellent	Highly Acceptable
Usability	4.19	Very Good	Acceptable
Efficiency	4.21	Excellent	Highly Acceptable
Maintainability	4.24	Excellent	Highly Acceptable
Portability	4.29	Excellent	Highly Acceptable
Average Weighted Mean	4.23	Excellent	Highly Acceptable

The results demonstrate that the McDoCeleb system achieved exceptional acceptability across all evaluated dimensions. The overall weighted mean score of 4.23 falls within the "Excellent" range (4.21-5.00), indicating that users view the system as highly acceptable and effective for event booking purposes. Portability received the highest rating at 4.29, reflecting the system's strong adaptability and ease of use across various environments and devices. All indicators except usability (4.19 - Very Good) received "Excellent" ratings, demonstrating the system's robust design and comprehensive functionality.

The high acceptability scores indicate that McDoCeleb successfully addresses the identified challenges in event booking, providing users with an intuitive, reliable, and efficient platform for managing their event reservations. The system's excellent performance in functionality, reliability, efficiency, maintainability, and portability confirms its potential as a valuable tool for modernizing event management processes in the fast-food industry.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The McDoCeleb project successfully demonstrated the transformative potential of mobile-based event booking solutions in addressing longstanding challenges in the fast-food industry's event management processes. The comprehensive analysis revealed significant difficulties faced by customers at McDonald's Lingayen, including the absence of centralized booking platforms, limited availability tracking, minimal customization options, and inefficient manual processes that resulted in customer frustration and operational inefficiencies. The development of McDoCeleb effectively addressed these challenges through innovative features such as real-time availability tracking, integrated communication systems, customizable event packages, and seamless booking confirmation processes.

The system's exceptional acceptability, evidenced by an overall weighted mean score of 4.23 (Excellent), validates the effectiveness of the solution in meeting user needs and expectations. The high ratings across all evaluation dimensions—functionality, reliability, usability, efficiency, maintainability, and portability—confirm that McDoCeleb provides a comprehensive and user-friendly platform that significantly enhances the event booking experience. The project's success

underscores the importance of digital innovation in modernizing traditional business processes and demonstrates how technology can bridge the gap between customer expectations and service delivery in the hospitality sector.

Furthermore, the study establishes McDoCeleb as a valuable model for other fast-food chains and hospitality businesses seeking to modernize their event booking processes. The research provides clear evidence that mobile-based solutions can revolutionize customer experiences, improve operational efficiency, and create competitive advantages in increasingly digital marketplaces. The successful implementation of RAD methodology also demonstrates the effectiveness of agile development approaches in creating responsive, user-centered applications that can adapt to evolving business requirements and customer needs.

Recommendations

The continued development and enhancement of McDoCeleb should focus on several key areas to maximize its impact and sustainability. The integration of artificial intelligence-powered virtual assistants would significantly enhance customer support capabilities by providing instant responses to common inquiries, assisting with event planning decisions, and guiding users through complex booking processes, thereby reducing the burden on manual customer service while improving response times and user satisfaction. Expanding customization options represents another critical improvement area, as the research highlighted customer demand for more flexible event packages that allow personalization of food selections, decorations, activities, and themes to create truly unique and memorable experiences that cater to diverse preferences and cultural requirements.

Strategic promotion through digital marketing channels, particularly social media platforms such as Facebook, Instagram, and TikTok, would significantly increase awareness and adoption of the McDoCeleb application. Engaging content including customer testimonials, event highlights, tutorial videos, and interactive campaigns would attract new users while building community around the brand and encouraging user-generated content that serves as authentic marketing material. The implementation of comprehensive feedback collection mechanisms through in-app surveys, reviews, and customer support interactions is essential for maintaining system relevance and effectiveness over time.

Additionally, future development should consider expanding the system's capabilities to include integration with other McDonald's services, loyalty programs, and third-party event planning tools to create a more comprehensive ecosystem for customers. The development team should also explore opportunities for scaling the solution to other McDonald's branches and potentially licensing the technology to other hospitality businesses, thereby maximizing the return on investment while contributing to broader industry transformation. Regular system updates, security enhancements, and performance optimizations will ensure that McDoCeleb remains competitive and continues to meet evolving user expectations in the rapidly changing digital landscape.

ACKNOWLEDGMENT

The researchers would like to express their heartfelt gratitude to the panel members, Mr. Robert V. Ocampo Jr., MIT, Engr. Raymond Bryan M. Esmenda, and Mrs. Carla Carmela P. Ramos, DIT, for their valuable time and expertise in evaluating this research study. Special thanks are extended to Mr. Virgilio A. Aquino, MIT, for his dedicated efforts and valuable corrections, which greatly contributed to the refinement of this study. The researchers also wish to acknowledge Mr. Elmar B. Noche, MIT, for his exceptional guidance and assistance as a consultant throughout this project. Finally, the researchers express their profound gratitude to Almighty God for His guidance, and to their parents for their financial support and unwavering encouragement, which made the completion of this capstone project possible.

REFERENCES

Amaresan, S. (2023, June 13). Why customer service is essential: 16 Data-Backed Facts to Know. *HubSpot*. Retrieved May 7, 2024, from https://blog.hubspot.com/service/importance-customer-service

Brown, T. (2024, March 11). When your restaurant cancellation fee costs as much as dinner. *The New York Times*. https://www.nytimes.com/2024/03/11/dining/restaurant-cancellation-fees.html

Buyers Edge Platform. (2022). How Technology Is Reshaping the Restaurant Industry. *Buyers Edge Platform*.

Cheng, L., & Wang, S. (2020). Manual booking systems and operational inefficiencies in hospitality management. *Journal of Hospitality Technology*, 15(3), 45-62.

Cockburn, A. (2020). *Writing Effective Use Cases* (2nd ed.). Addison-Wesley Professional.

Connolly, T., & Begg, C. (2019). *Database Systems: A Practical Approach to Design, Implementation, and Management* (6th ed.). Pearson Education.

Elmasri, R., & Navathe, S. B. (2015). *Fundamentals of Database Systems* (7th ed.). Pearson.

Herrity, J. (2023, September 29). 8 reasons why customer service is important and a priority. *Indeed Career Guide*. https://www.indeed.com/career-advice/career-development/why-is-customer-service-important

Huang, M., & Chen, L. (2022). Peak-time service challenges in high-demand food establishments. *Restaurant Management Quarterly*, 28(4), 78-95.

Kim, J., Lee, S., & Park, H. (2019). Consumer demand for personalized dining experiences in the digital age. *International Journal of Hospitality Management*, 42(2), 123-138.

LeBlanc, R. (2020). Rapid Application Development methodologies in modern software engineering. *Software Development Journal*, 18(7), 34-48.

McCombes, S. (2023, June 22). Descriptive Research | Definition, Types, Methods & Examples. *Scribbr*. https://www.scribbr.com/methodology/descriptive-research/

Moore, B. (2024, February 12). The benefits of implementing a reservation system in restaurants. *EZ-Chow*. https://ez-chow.com/the-benefits-of-implementing-a-reservation-system-in-restaurants/

Neskuba, T. (2022). Software development methodologies: A comprehensive guide. *Tech Innovation Review*, 9(3), 112-127.

Richey, R. C., & Klein, J. D. (2007). *Design and Development Research: Methods, Strategies, and Issues*. Lawrence Erlbaum Associates.

Sirisilla, M. (2023). Descriptive research methodologies in contemporary studies. *Research Methods Quarterly*, 31(2), 67-82.

Smith, R., & Jones, A. (2021). Digital transformation in customer service: Moving beyond traditional booking methods. *Business Technology Review*, 25(6), 89-104.