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Development of Events Management System

Mark Joseph Q. Mayan-ao, Rochille M. Nabong, John Carlo C. Malon, Aljay C. Labucana, Jecris B. Sabo, Mark B. Barce, Ma Geleen O. Eduave
Department of Information Technology
Tagoloan Community College, (TCC)
Tagoloan, Philippines

Abstract **- This study focuses on developing an Events Management System designed to make planning and managing events easier, faster, and more accurate. Traditional methods such as spreadsheets, phone calls, and emails often lead to delays, miscommunication, and errors. To address these problems, the researchers created a web-based system that integrates event planning, client management, vendor coordination, and financial tracking into one platform. The system enables users to calculate total packages and add-ons, generate automated reminders, schedule activities, track budgets, and record payment transactions. It also includes vendor communication features and reportingtools that summarize tasks, and event progress. The system's efficiency and usability were evaluated through functional testing and the System Usability Scale (SUS), which resulted in an acceptable usability rating. Results show that the system is effective inreducing errors, improving communication, and supporting administrators in managing essential event-related tasks. However, findings also indicate areas for enhancement, particularly in system notifications and mobile responsiveness. Overall, the Events Management System provides a practical and helpful tool for improving event organization and decision-making.**

Keywords : event management system, vendor coordination, scheduling, payment processing, usability evaluation, system development

1. INTRODUCTION

In today's digital era, Information Technology (IT) plays a crucial role in enhancing event planning and management. The event industry, which includes various occasions such as corporate events, educational activities, and community gatherings, demands a high level of coordination, organization, and productivity to ensure smooth execution.

According to Florence et al. (2021), planning and managing events for individuals, groups, or organizations requires a timeline of activities and a structured approach to achieve successful outcomes in terms of cost, schedule, and quality. This emphasizes the need for systems that can help optimize complex event processes. Moreover, Allen et al. (2022) stated that festival and special events management has become increasingly essential as the event industry continues to face significant challenges.

The development of an Events Management System (EMS) aims to serve as a centralized platform that integrates all aspects of event organization, such as venue selection, task assignment, vendor coordination, and budget monitoring. The primary goal of the system is to enhance productivity and improve the management of different types of events by providing a digital solution that reduces errors, minimizes miscommunication, and replaces time-consuming manual work.

II. PROBLEM STATEMENT

Currently, Michael Ho Event Styling & Coordination uses a manual booking process. Generally, it leads to disorganization and time-consuming activity. Such activity requires maintaining different private folders for events and dates, which are not automated and increase the chances of file misplacement and collaboration problems. This is the usual problem that is the same in working with Google Drive and may delay everything.

In addition, Michael Ho Event Styling & Coordination still uses conventional tools like spreadsheets, emails, and phone calls to organize and coordinate events. Such a separated approach leads to breaks in communication, mismanaged schedules, delays, or loss of information. As a result, these challenges unnecessarily stress both the organizer and the client of the event, possibly impacting overall event results.

III. OBJECTIVES OF THE STUDY

This project aims to design and develop an EventManagement System for MichaelHo to improve the efficiency, accuracy, and smooth process of booking an events in MichaelHo Event Styling and Coordination in Malaybalay City, Bukidnon

A. *Specific Objectives*

Specifically, the study aims to:

1. To calculate the total packages and add-ons based on category selections and provide payment details and transaction records for invoice reports.
2. To automate reminders, enable scheduling for important event dates, and provide real-time tracking of progress and budgets.
3. To integrate a vendor coordination system that facilitates communication, scheduling, and payment management between event planners and vendors.
4. To generate task, vendors progress and monthly event summary reports

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5. Test and evaluate the system by verifying its functionality and user experience through unit testing, scenario-based testing, and System Usability Scale (SUS) assessment.

IV. REVIEW OF RELATED WORK

Recent studies indicate that web-based and mobile event management systems greatly improve efficiency, organization, and accessibility compared to traditional manual processes. Most systems were designed to automate event scheduling, reservations, budgeting, vendor coordination, and communication. By digitizing these tasks, the systems reduced scheduling conflicts, minimized human error, and improved coordination among organizers, clients, and service providers. These studies show that centralized platforms are essential for managing large volumes of event-related data and ensuring timely updates and notifications.

Previous research employed various system development methodologies such as Waterfall, Agile, Iterative Model, Rapid Application Development (RAD), Dynamic Systems Development Method (DSDM), and Object-Oriented System Analysis and Design (OOSAD). Despite methodological differences, most studies used similar technologies, particularly PHP, HTML, CSS, JavaScript, Laravel, and MySQL, while some incorporated mobile development tools, cloud computing, Node.js, or MongoDB. While these systems demonstrated acceptable functionality and performance, several limitations were identified, including limited customization options, weak third-party integration, scalability concerns, and inconsistent user interface design.

Studies focusing on specific domains such as wedding planning, venue booking, school events, and institutional reservations highlighted the importance of real-time access, reliable databases, and user-friendly interfaces. Systems that included features like SMS notifications, online reservations, vendor verification, and asset management improved user satisfaction and operational efficiency. However, many systems addressed only selected components of event planning and lacked comprehensive integration of budgeting, third-party coordination, feedback mechanisms, and post-event management, reducing their overall effectiveness.

Overall, the reviewed literature reveals a clear need for a more integrated, flexible, and user-centered event management system. Existing solutions improved certain aspects of event organization but often failed to provide an all-in-one platform that addresses the full complexity of event planning. These gaps guided the development of the proposed Event Management System, which aims to combine proven technologies and iterative development approaches to deliver a centralized, customizable, and accessible solution that enhances coordination, usability, and efficiency for event planners and clients, particularly in budget-conscious environments such as the Philippines.

V. METHODOLOGY

The study used the Agile software development methodology, which follows an iterative and incremental process consisting of planning, design, development, testing, deployment, review, and launch. This approach was selected because system requirements were expected to evolve based on continuous user feedback and real-world event management needs. Requirements were identified through face-to-face interviews with the secretary, focusing on current workflows, challenges, and desired system features such as event booking, scheduling, client communication, and third-party coordination. The Agile approach supported frequent collaboration, regular testing, and flexible adjustments to ensure that the system aligned with user expectations. During the design phase, system functionality and data structure were defined using use-case diagrams and entity-relationship diagrams to illustrate user interactions, processes, and database relationships. User interface prototypes were created to ensure usability, accessibility, and responsiveness for clients, staff, and administrators.

The system was implemented as a web-based application using Laravel as the backend framework to handle business logic, authentication, database manipulation, and security features. The user interface was developed using HTML, CSS, Tailwind, and JavaScript to ensure a responsive and interactive design across multiple devices. MySQL served as the primary database for centralized data storage and management. A three-tier architecture was applied, separating the presentation, application, and database layers to improve scalability and maintainability. Additional integrations such as calendar services, SMS notifications, and email services were included to enhance scheduling, communication, and user experience. Development and testing were conducted iteratively, with usability evaluation confirming that the system was stable, user-friendly, and suitable for deployment in real-world event management scenarios.

VI. RESULTS AND DISCUSSION

This section presents the evaluation, analysis, and discussion of the developed Event Management System. The results focus on system performance, usability, and functional effectiveness compared with traditional manual event management processes. Evidence gathered from system testing, usability evaluation, and functional comparison demonstrates the effectiveness of the developed web-based application in improving event planning, coordination, and communication among clients, staff, and administrators.

A. *System Performance Evaluation*

This section presents the evaluation, analysis, and discussion of the developed Event Management System. The results focus on system performance, usability, and functional effectiveness compared with traditional manual event management processes. Evidence gathered from system testing, usability evaluation, and functional comparison demonstrates the effectiveness of the developed web-based application in improving event planning, coordination, and communication among clients, staff, and administrator.

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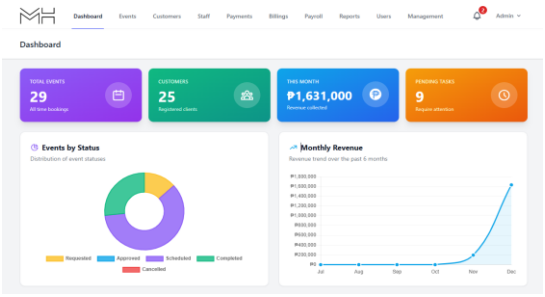

Figure 1. Event Dashboard Page

Figure 1 presents the Event Dashboard Page, which provides an overview of upcoming events, active bookings, and system statistics. This page allows users to monitor event progress and key details at a glance.Barangay Nutrition Scholars.

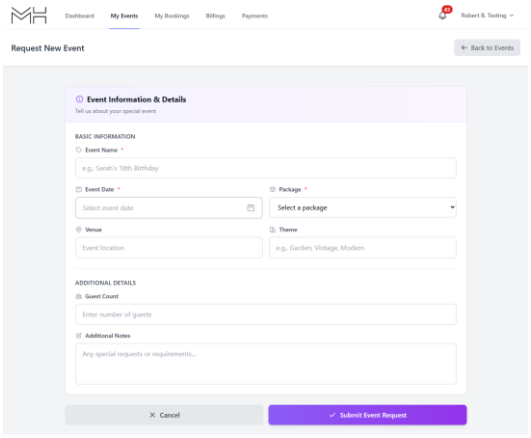

Figure 2. Event Booking Page

Figure 2 presents the Event Booking Page, which enables clients to create and manage event reservations. The page supports service selection, scheduling, and confirmation, ensuring accurate and organized booking records.

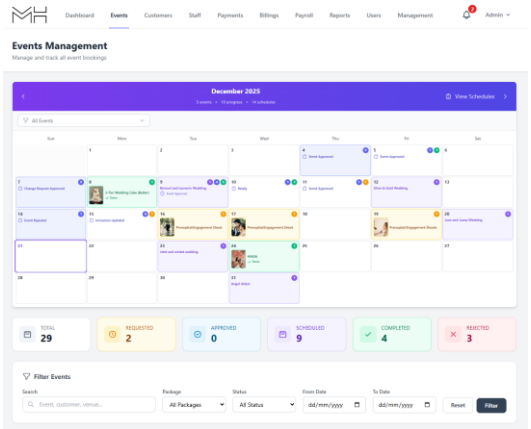

Figure 3. Calendar and Schedule View

Figure 3 presents the Calendar View, which displays scheduled events in an organized timeline. This feature helps users track event dates, avoid scheduling conflicts, and manage multiple events efficiently.

B. Usability Results And Analysis

System usability was evaluated using the System Usability Scale (SUS). The results indicate that users found the system easy to use, well-structured, and efficient for completing tasks such as booking events, selecting services, updating schedules, and generating reports. The interface design supported users with minimal technical background, reducing the need for extensive training and improving overall user satisfaction.

TABLE I. System Usability Scale (SUS) Result

Table 1 presents the final SUS score of the Event Management System. The obtained SUS score falls under the "Good" usability category, indicating that the system meets essential usability standards while remaining intuitive and accessible to its intended users. Minor enhancements may further improve user experience and system interaction.

System Usability Scale (SUS)		Participants					
Item		P1	P2	P3	P4	P5	P6
1	I think that I would like to use this System Frequently.	3	2	3	4	3	3
2	I found the system unnecessarily complex.	2	1	3	3	3	2
3	I thought the system was easy to use.	4	2	3	4	2	4
4	I think that I would need assistance to be able to use this system.	2	1	3	2	3	3
5	I found the various functions in this system were well integrated.	3	1	3	4	4	3
6	I thought there was too much inconsistency in this system.	2	3	2	3	3	2
7	I would imagine that most people would learn to use this system very quickly.	3	3	2	3	2	3
8	I found the system very cumbersome or awkward to use.	3	4	2	3	3	3
9	I felt very confident using the System.	0	3	3	3	3	3
10	I need to learn a lot of things before I could get going with the system.	0	0	1	0	0	0
	Total	22	20	25	29	26	26
	Multiply to 2.5	55	50	62.5	72.5	65	65
	Total Score	370					
	Average Score	61.66666667					

C. System-Based Functional Comparison

This section compares the traditional manual event management process with the developed Event Management System in terms of data handling, system features, and workflow efficiency.

The functional differences between the manual process and the developed system. Manual methods rely on handwritten records, spreadsheets, and verbal coordination, which are prone to errors, data duplication, and delays. In contrast, the developed system supports digital data entry, centralized data storage, automated scheduling, third-party management, real-time notifications, and report generation. These features improve data consistency, reduce processing time, and enhance coordination among all stakeholders.

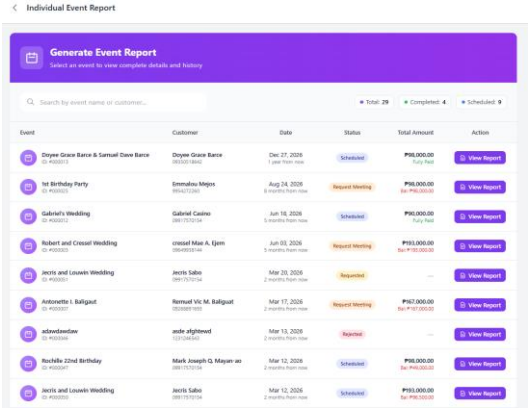

Fig. 4. Individual Event Report Page

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Figure 4 presents the Individual Event Report Page, which displays a detailed list of all events recorded in the system. The page allows users to search events by event name or customer, view event dates, statuses, total payment amounts, and payment conditions such as fully paid or with remaining balance. It also summarizes the total number of events, completed events, and scheduled events. The "View Report" action enables administrators and staff to generate and review complete event details and history, supporting efficient monitoring, reporting, and decision-making.

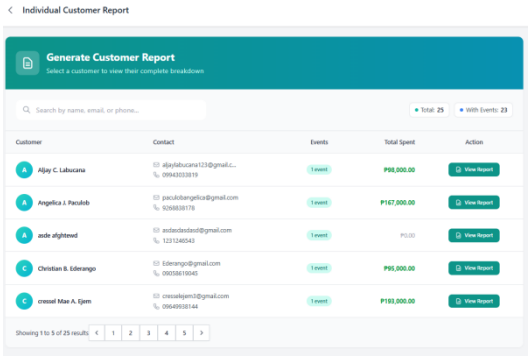

Fig. 5. Individual Customer Report Page

Figure 5 presents the Individual Customer Report Page, which displays a list of registered customers along with their contact information, number of events handled, and total amount spent. The page includes a search function that allows users to quickly locate customers by name, email, or phone number. It also summarizes the total number of customers and those with recorded events. The "View Report" action enables administrators and staff to access a detailed breakdown of each customer's event history and transactions, supporting effective customer profiling, financial monitoring, and informed decision-making.

Fig. 6. Short Message Service (SMS)

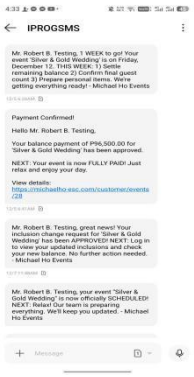

Figure 6 presents the SMS Notification feature, which automatically sends reminders and updates regarding event schedules and important announcements. This feature improves communication efficiency between organizers, clients, and third-party providers.

VII. CONCLUSION AND FUTURE WORK

The developed Event Management System successfully addressed the limitations of traditional manual event planning processes by providing a centralized, web-based solution for managing events, customers, services, schedules, and third-party coordination. The system improved data organization, scheduling accuracy, communication efficiency, and report generation through automated workflows, real-time updates, and centralized database management. Results from system testing and usability evaluation indicate that the system is stable, functional, and easy to use for clients, staff, and administrators. The System Usability Scale (SUS) results showed a good level of usability, confirming that the interface supports efficient navigation, faster task completion, and reduced dependency on manual coordination, even for users with limited technical background.

Despite the positive results, minor limitations were identified, such as dependency on stable internet connectivity and varying performance across different devices. These limitations, however, did not affect the system's core functionalities, including event booking, scheduling, customer profiling, notification delivery, and report generation. Overall, the system demonstrated its effectiveness in improving event planning workflows, minimizing scheduling conflicts, enhancing communication with clients and third-party providers, and supporting informed decision-making through accurate and timely reports.

Future work may focus on enhancing system performance on low-end devices and optimizing responsiveness under limited internet conditions. Additional features such as offline data handling, mobile application support, advanced analytics for event trends, and financial forecasting may further improve system usability and scalability. Integration with third-party payment gateways, expanded notification channels, and more customizable event templates may also strengthen the system's applicability for a wider range of event types. Continuous system refinement following Agile principles and user feedback is recommended to ensure long-term sustainability, adaptability, and effectiveness of the Event Management System in real-world event planning environments.

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