International Journal of Computing Sciences Research (ISSN print: 2546-0552; ISSN online: 2546-115X)
Vol. 8, pp. 2677-2694
doi: 10.25147/ijcsr.2017.001.1.180
https://stepacademic.net

Short Paper

Revitalizing Hospitality Services: The Transformation of Mary Alston Hotel's Reservation System of Trinity University of Asia

Jade Anne L. Caritos
College of Engineering and Information Sciences, Trinity University Asia, Philippines
jadeannelcaritos@tua.edu.ph

Mark Angelo M. Ignacio
College of Engineering and Information Sciences, Trinity University Asia, Philippines
markangelomigancio@tua.edu.ph

Melanny Krystyn B. Maglipon
College of Engineering and Information Sciences, Trinity University Asia, Philippines
melannykrystynbmaglipon@tua.edu.ph

Ellan Justin C. Patron
College of Engineering and Information Sciences, Trinity University Asia, Philippines
elianjustincpatron@tua.edu.ph

EIvan Denzel C. Utanes
College of Engineering and Information Sciences, Trinity University Asia, Philippines
ivandenzelcutanes_softeng@tua.edu.ph

Ma. Fe R. Llevado
College of Engineering and Information Sciences, Trinity University Asia, Philippines
mrllevado@tua.edu.ph

Emilyn A. Donor
STI College Bacoor, Philippines
emilyn.donor@bacoor.sti.edu

Ferdinand R. Bunag
College of Engineering and Information Sciences, Trinity University Asia, Philippines
frbunag@tua.edu.ph
(corresponding author)

Date received: July 7, 2023
Date received in revised form: November 24, 2023
Date accepted: January 2, 2024

Recommended citation:

Caritos, J. A. L., Ignacio, M. A. M., Maglipon, M. K. B., Patron, E. J. C., Utanes, E. D. C., Llevado, M. F. R., Donor, E. A., & Bunag, F. R. (2024). Revitalizing hospitality services: The transformation of Mary Alston Hotel's Reservation System of Trinity University of Asia. *International Journal of Computing Sciences Research*, *8*, 2677-2694. https://doi.org/10.25147/ijcsr.2017.001.1.180

Abstract

Purpose – Online hotel reservation systems provide guests with the convenience of making bookings at any time, thereby greatly enhancing the registration process. This abstract provided a concise summary of the system's design, development, and evaluation. The objective of this project was to create a customized web-based booking system for Mary Alston Hotel at Trinity University of Asia, with a primary focus on integrating different components smoothly and automating transaction processing.

Method – The project utilized the Agile technique to break it down into manageable steps, fostering active involvement and debate from stakeholders. Technology Utilization: The CSS attribute background image was employed to integrate images into links and other elements, hence boosting the system's visual attractiveness.

Conclusion – The system underwent assessment using the ISO-25010:2010 instrument, with a specific focus on its effectiveness, reliability, ease of use, compatibility, and maintainability. The majority of users indicated a strong level of agreement on the system's compliance with evaluation requirements. Additionally, they also strengthen administrative capabilities. The use of Agile development approaches, CSS implementation, and thorough review processes improved the functionality and acceptance of this technology in the hospitality industry.

Recommendation – The developer of the Hotel Reservation System suggested that Trinity University of Asia's Mary Alston Hotel should implement the system to improve operational efficiency, given the demonstrated favorable outcomes.

Practical Implication – The practical significance of this project lies in the fact that implementing online reservation systems, along with Agile development methodologies and user-friendly design, can result in enhanced efficiency, improved customer experiences, and a competitive edge in the hospitality industry. Therefore, similar businesses must contemplate the adoption of these innovations.

Keywords – online reservations system, hotel website, user-friendly system, agile methodology

INTRODUCTION

The Mary Alston Hotel is a completely operational budget hotel. Students of the College of Hotel and Tourism Management (CHTM) of Trinity University of Asia (TUA) can utilize the building's laboratories, facilities, and equipment for their classes. In addition to these, the building can accommodate visitors from both within and outside of TUA in the available rooms. The Mary Alston Hotel only operates when visitors are checking in, and the hotel rooms are typically open between 7:30 AM and 10:00 PM. Nonetheless, if there is a campus tour or event, the hotel will be open to accommodate clients and/or visitors. The hotel is also accessible during the holidays so that more people can relax there. Before their stay, guests will be required to complete a form in which they designate their preferred check-in and check-out dates and times. In contrast, the hotel does not take walk-ins because it is not yet open to the public; only referrals are accepted. Due to the rarity of cancellations, the hotel does not have a cancellation policy. When a visitor cancels an appointment, hotel management discusses the situation with them. An administrator assigns and is responsible for managing the hotel. There are five guest suites at the Mary Alston Hotel.

Regarding the Mary Alston Hotel's current reservation procedure, there is also a pen-and-paper, form-based manual procedure in place. The guest must arrive at the hotel before their stay to complete a form that includes their name, contact number, check-in and check-out dates and times, the number of nights they will be staying, and their payment method (cash or credit card). The hotel manager will manually verify the availability of the requested room and block it off on the calendar. After completing the form and receiving confirmation from the HIC, the guest will proceed to the finance office to pay the complete amount. Regarding the hotel's monthly and annual reservation reports, the manager painstakingly types and prints the data into the computer. In addition, the hotel lacks any form of advertising, which may result in budgetary issues, low consumer volume, and a decline in the company's growth.

The proponent aims to develop a module for online reservations that will increase the number of inquiries and reservations made. A contemporary hotel reservation system with seamless integration capabilities enables hotels to maximize appointments via multiple online channels in addition to the hotel's website (Golla, 2021). With the use of a customer reservation system, an increase in hotel bookings is guaranteed, as consumers will have access to the necessary reservation information. It will also contain an automated

billing statement for the hotel's guests It also has a module that eliminates scheduling conflicts for hotel rooms. With a hotel room monitoring module, a guest can readily view the available rooms on the hotel's website when making a reservation. In addition, the hotel receptionist can view the rooms that are currently available when a walk-in visitor wishes to check-in. This module will enable users to accurately monitor available rooms to prevent scheduling conflicts with other guests, as well as manage the reservation process. Part of the system is a module that provides on-demand reports to assist in monitoring the hotel's performance. A system evaluation will verify and validate if the developed system meets the objectives if any errors need to be corrected, and if it meets all of the client's requirements.

This study will benefit the College of Hospitality and Tourism Management, as the proponents' systems will introduce them to a new technological trend that will increase their earnings and clientele. Implementing modern building technology has numerous advantages for hotels. In addition to increasing efficiency and reducing operational costs, these systems also benefit the environment (Sharma, 2022). This would aid the college in sustaining hotel operations while also enhancing its staff's abilities. Additionally, the proposed system could aid them in publicizing the courses they offer. This study will unquestionably benefit Trinity University of Asia, as it will aid in the promotion of the hotel. This could generate additional revenue, particularly once the hotel is open to the general public as well as guests and clients.

This research will be of great benefit to the Mary Alston Hotel Administrators because it will enable them to manage and attend to their guests' online reservations. Due to the system's convenience, they will be able to reach a greater number of visitors, thereby increasing their revenue. Guests/Clients of the hotel will be able to schedule and reserve accommodations with less time and effort. They will be able to make their reservations at the hotel through the website with just a few keystrokes. In addition to providing a more secure and reliable payment transaction, the system will save them time and effort by automating the process. It would direct students and teachers toward a more comprehensive understanding of the study. This study can serve as a guide and reference for those conducting comparable research. This study will benefit the proponents the most. This will benefit them by equipping them with additional knowledge and skills that will help them complete this study. It provides participants with experience and training that can be applied to future professions.

In this regard, the specific problem was how to develop an online hotel reservation and billing system for the CHTM of TUA and determine the system's effectiveness and acceptability to its users using the ISO 25010 standard criteria.

LITERATURE REVIEW

Importance of Customer Satisfaction

The satisfaction of customers has a crucial role in the profitability and longevity of a business, making it a fundamental aspect of hotel sustainability (Kim & Kim, 2022). When patrons express contentment with their encounter, there is an increased likelihood of their subsequent visits, leading to recurring transactions and cultivating a sense of allegiance. This mitigates the necessity of consistently procuring new clientele. Word-of-mouth advertising and favorable web evaluations are highly economical methods of marketing. Satisfied customers are more inclined to share their great experiences with others. In addition to the monetary benefits, contented customers play a role in enhancing operational efficiency by diminishing the volume of complaints received, hence reducing the allocation of time and resources towards dispute resolution. Furthermore, the pleasure of customers is often closely linked to the implementation of environmentally friendly business practices. These activities encompass the encouragement of conscientious consumption, the mitigation of waste generation, and the preference for ecologically sustainable alternatives. These choices not only contribute to the improvement of a hotel's reputation, but they also align with the changing tastes of environmentally conscious guests, thereby driving the hospitality industry towards a more sustainable future.

Automated/Online Booking

The advent of automated online booking systems has brought about a comprehensive transformation in the hotel industry. These technologies have significantly enhanced operational efficiency, streamlined processes, and exerted a large impact on financial performance. Customers derive significant advantages from the remarkable level of convenience offered by these technologies, as they empower individuals to effortlessly reserve accommodations, customize their preferences, and complete financial transactions at their preferred time and convenience. The accessibility of making reservations at any time of day or night, irrespective of the visitor's time zone, enables hotels to enhance their bookings and financial performance. Moreover, the implementation of automation in hotel operations serves to reduce the occurrence of errors, enhance the process of room allocation, and synchronize reservations with other systems inside the hotel. These collective benefits ultimately result in a more efficient and harmonized experience for hotel visitors. Automated online booking is often regarded as a fundamental element of contemporary hotel management. In an era characterized by growing digitalization, the adoption of certain practices can contribute to the promotion of growth, efficiency, and a heightened emphasis on meeting the demands of guests (Wynn & Jones, 2022).

Accommodation providers, regardless of the type of establishment they own (e.g., 5-star hotel, bed & breakfast, holiday home), experience a decline in bookings when they do not have an internet presence. In the contemporary digital landscape, the majority of individuals engaged in both professional and recreational travel are actively connected to the Internet. In the contemporary period, businesses must ensure their discoverability, as modern consumers increasingly prioritize expediency and the ability to make prompt selections while on the move. Nevertheless, engaging in online activities merely marks the initial stage. The implementation of a comprehensive hotel reservation system that enhances guest experience and increases visibility is a significant innovation. Hotel reservation systems let clients make hotel bookings round the clock, independent of human intervention, hence enhancing efficiency and accessibility. Reservation systems enable guests to make direct bookings through your website, resulting in cost savings for them and maximizing revenue for your establishment. The implementation of a real-time hotel reservation system effectively mitigates the occurrence of overbooking and ensures the synchronization of all relevant information. Additionally, the provision of customization options for visitors enhances the overall tourist experience. The utilization of a reservation system provides valuable and easily available knowledge about guest behavior, which plays a pivotal role in achieving success. The utilization of online booking systems effectively mitigates the use of paper and waste, hence fostering sustainable practices. The Earth and the financial expenses associated with operations experience positive outcomes. The contemporary hospitality industry heavily depends on hotel reservation systems. Implementing an appropriate reservation system has the potential to enhance the competitiveness, responsiveness, and alignment with guests' preferences of boutique bed and breakfast establishments as well as global hotel chains (Colcol, 2023).

Sarmiento (2020) created an online hotel reservation system to supplant the manual method of room reservation, record keeping, and report generation. The hotel employs a manual booking system at present. This manual booking process has numerous faults, so a database-driven system is the best solution. The newly devised system addressed the majority, if not all, of the end-users issues. Not only do the information-based solutions address the problems, but they also provide the company's administrator/management with a competitive advantage. Because of these database systems, their records will be more organized, secure, and reliable.

The utilization of a mobile application to make hotel reservations has a multitude of advantages, with certain benefits being advantageous to the hotels and others to the clients (Elphick, 2019). Clients place a high level of attention on the convenience and simplicity of operation. Visitors are provided with the opportunity to access and observe the availability of accommodations and proceed with booking in real time by utilizing a mobile application that incorporates intuitive interfaces and secure payment channels. One notable benefit is the capacity for consumers to customize their experience through the establishment of preferences, the reception of personalized recommendations, and the

option to choose their preferred lodgings. Push notifications serve as a means to inform users about exclusive discounts, check-in schedules, and local activities, thereby augmenting their overall experience and fostering a preference for direct reservations. Push notifications can also serve to deliver alerts.

The hotel provides a dedicated mobile application on its premises, which serves as a crucial and direct means of connection with its customers. This facilitates the opportunity to effectively promote and offer supplementary services, such as enhanced accommodations or different dining options, seamlessly, hence resulting in a boost in revenue. Furthermore, hotels can utilize the data acquired from app usage to tailor their marketing strategies, individualize their interactions with customers, and enhance the caliber of their services. Hotels have the potential to enhance their profitability and reduce commission charges by reducing their dependence on third-party booking platforms. This will enable hotels to generate additional revenue. In a broader context, the implementation of a meticulously crafted hotel reservation application has the potential to significantly enhance the overall satisfaction experienced by guests, while concurrently bolstering the operational efficacy and financial performance of the hotel establishment (Bespoke Revenue Management, n.d.).

Real-time Booking Monitoring

When it comes to reserving hotel rooms, adopting an online booking and tracking system offers several benefits that cannot be beaten by traditional methods. The capacity to examine the status of room reservations, cancellations, and availability at a hotel quickly is made possible by the implementation of real-time monitoring. Because of this visibility, they can make well-informed judgments, make the most of the usage of the available rooms, and avoid overbooking and double-booking scenarios, both of which can lead to dissatisfied clients. In addition, it enhances operational efficiency because the staff at the hotel can correctly allocate resources and staff based on the influx of reservations. This results in a more pleasant experience for both the employees and the clients, which is a win-win situation for everyone involved.

In addition, conducting data-driven analysis and gaining insights from those analyses is now possible thanks to online monitoring. The management of hotels can analyze booking patterns, which can include peak booking hours, popular room types, and geographical trends (Hotel Property Management Systems: Products and Features, 2020). This information is necessary for the development of marketing plans, pricing models, and promotional endeavors that will attract a greater number of guests during off-peak times of the year. In addition, knowing the preferences of consumers makes it possible to give personalized services. These services have the potential to significantly raise the degree of satisfaction that guests experience and to foster loyalty. Monitoring guests' internet use can, in general, make hotel operations more efficient, improve customer service, and contribute to the development of a hotel management strategy that is more effective and

more profitable. Once the software framework has been implemented, it is imperative to provide comprehensive training to the hotel personnel to effectively utilize and navigate the system.

The subsequent phase involves the development of well-defined protocols and systematic processes to effectively manage and monitor room reservations. The establishment of clear roles and responsibilities within a team is crucial for effective functioning (Cmo, 2023). It is imperative to ensure that all staff members are well-informed about their specific duties, particularly concerning managing cancellations, monitoring room bookings, and promptly updating room availability. Regularly reviewing booking data, occupancy rates, and booking patterns is essential for making informed judgments. Utilize the gathered information to enhance pricing strategies, promotional campaigns, and marketing initiatives to attract a larger clientele. The establishment of a reliable online monitoring system is a continuous endeavor that necessitates periodic training, evaluation, and adjustment to accommodate the constantly evolving dynamics of the industry and the specific preferences of clients. In brief, achieving a successful implementation necessitates allocating resources toward suitable technology, providing training for the team, building well-defined processes, and using obtained data to make informed business decisions that enhance operational efficiency and customer satisfaction.

Before implementing live booking functionality on your website, it is imperative to consider the prerequisite of possessing reservation management software capable of effectively handling an increase in direct reservations. To ensure the efficacy and financial sustainability of your hotel, it is imperative to verify the functionality of all relevant components before initiating any strategies aimed at promoting real-time reservations. Now, let us delve into a more detailed examination of several grounds that advocate for the utilization of online booking procedures. The utilization of real-time reservations not only offers enhanced convenience but also contributes to the optimization of operational efficiency. This booking approach also contributes to cost reduction in human resources by eliminating the necessity of employing a dedicated staff member to respond to availability inquiries. Alternatively, the aforementioned information is regularly updated upon accommodation reservations, hence obviating the necessity for designated personnel. The availability of online reservation services allows visitors to independently manage their bookings at any given time. Consequently, the necessity for round-the-clock front desk management is reduced when a website offers the option to be accessed in many languages. This mitigates the necessity for employing specialized personnel proficient in many languages to address inquiries. Moreover, by providing the option for your website to be presented in multiple languages, you can significantly reduce the need for personnel. To enhance the overall profitability of a firm, it is imperative to reduce expenses related to human resources (Lacalle, 2023).

Conceptual Model of the Study

As shown in Figure 1, the conceptual framework illustrates the processes and prerequisites necessary to develop a hotel reservation system. In the first compartment of the diagram, the required customer requirements are specified. There are two chapters: Reservations and Information on Guests. To reserve a hotel room, you must have the guest's information. The reservation information includes room categories, check-in, and check-out dates, as well as the number of nights. The processes that proponents engage in when developing a system using an agile methodology are referred to as the process framework. Also included are the software and programming language used to process the system. The "Effective and User-Friendly Online Hotel Reservation System" is the concluding element of the output frame, which manages customer reservations at the Mary Alston Hotel successfully.

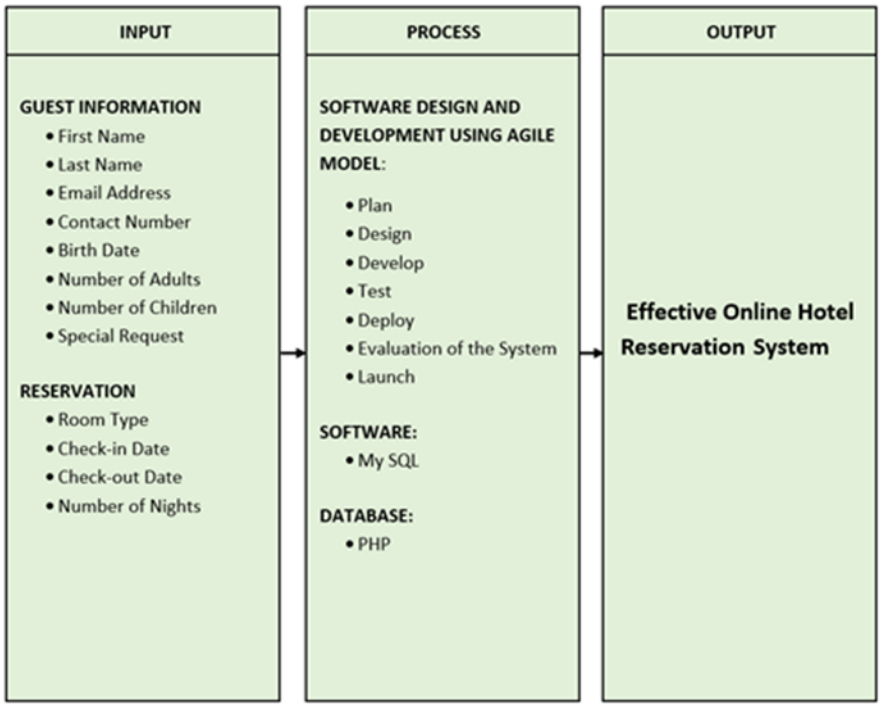

Figure 1. I.P.O Diagram of the Study

METHODOLOGY

This part covered the methodology used in the study and other technological specifications. It also includes the design, development, operating procedure, testing procedure, and evaluation procedure that will be needed to develop an online hotel reservation system.

Design

In the design of the system, the proponent used Agile methodology (as shown in Figure 1) is essential for system software development for several reasons. First, it

encourages adaptability and flexibility by emphasizing iterative development and continuous refinement. This enables developers to rapidly adapt to changing requirements and make adjustments throughout the development process. Second, Agile promotes collaboration and communication among team members, resulting in improved coordination and shared comprehension. Thirdly, it facilitates frequent user participation and feedback, ensuring that the system program satisfies their requirements and expectations. Through regular testing and quality assurance activities, the Agile methodology facilitates the early detection and resolution of problems. Lastly, it helps effectively manage project risks by dividing development into smaller, more manageable chunks, thereby reducing the likelihood of large-scale failures, and minimizing overall project risks.

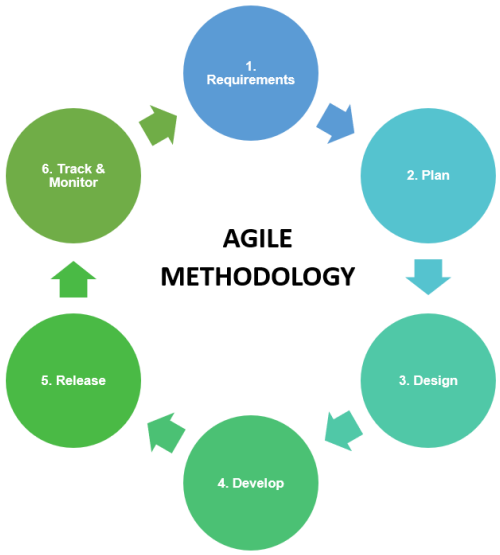

Figure 2. Agile Development Methodology

Development

In the development of the system, CSS and Java programming were used. CSS separates the presentation and layout of a website from its content. This separation allowed web designers and developers to control the visual appearance of a website independently of the underlying HTML structure. It also provided a consistent and efficient way to apply styles and formatting to multiple web pages. By defining styles in a separate CSS file, changes were made globally, affecting all pages that reference that CSS file. CSS enabled a responsive design, allowing websites to adapt and adjust their layout and appearance based on the device or screen size. This ensures a seamless user experience across various devices, from desktop computers to smartphones. Using CSS a wide range of styling options and effects, including colors, fonts, spacing, positioning, and animations were available. These capabilities gave web developers the flexibility and creativity to design visually appealing and engaging websites. Lastly, CSS reduced the amount of code duplication by providing the ability to define reusable styles and classes. This leads to

cleaner and more maintainable code, making the site easier to update and modify. Java programming was used in website development primarily for its robustness, scalability, and platform independence. It provided a secure and reliable environment for building complex web applications that can run on different operating systems and devices, ensuring widespread compatibility and flexibility.

A Ryzen 5 processor with a 3200 MHz processing speed was used in this system. The motherboard is an ATX motherboard. The hard drive has a 1TB capacity, while the RAM is 16GB in size. It also included an 800-watt power supply. Since this system is a website, it may be used on any computer or device.

Testing

In the testing phase of the online hotel reservation system design, the CASE Testing Method helped ensure thorough review and validation. Multiple steps are used in this method. After studying and designing requirements, test cases are created. Initially, a detailed analysis of system requirements was performed to identify potential issues. This step was critical for understanding system behavior, expected repercussions, and user interactions. Next, a complete collection of test cases was created, covering booking options, payment methods, reservation revisions, and problem solutions. We created a comprehensive test suite using the CASE Testing Method to test all system functions. The system's usability, functionality, performance, and security were tested extensively during test case implementation. Data integrity, responsiveness, user interface, and backend testing were part of the review process.

Evaluation

The integrity of the system or software was crucial, and it had an impact on the level of end-user satisfaction. When it comes to ensuring that the software is of high quality, it is impossible to overstate the significance of detailed specification and evaluation. A method for evaluating the quality of software consisted of defining an acceptable quality model and its attributes. This procedure utilized a software quality model based on the ISO 25010 standard for evaluation. This model featured functionality, dependability, usability, efficiency, and portability. Purposeful sampling was used in the selection procedure to select a sample group from the survey's category (Nikolopoulou, 2023). If respondents were selected based on their relevance to the questionnaire's criterion, it was possible to generate an unbiased estimate of the population totals; however, weighting sampled units based on their selected respondents could result in more precise statistical estimates. It is acknowledged that respondents were selected according to their relevance to the questionnaire's criterion. The sample size for the study was determined by using a margin of error of five percent (5%) and selecting 242 participants from a population of 547 users to participate in the survey. This number exceeds the minimum sample size requirement of two hundred thirty-one (231). The Slovin formula (2023; Equation 1) is as follows :

$$SS = \frac{N}{1 + Ne^2}$$ *Equation 1*

Where:

SS = sample size
N = Total population
E = Margin of errors (0.05)

The use of descriptive data and five-point rating scales will play a significant role in the formulation of the descriptive study's measuring instruments. The online system was evaluated based on Section Ill of the questionnaire, using a five-point scale (Excellent-5, Very Satisfactory-4, Satisfactory-3, Unsatisfactory-2, and Poor-1). The users' responses served as the premise for determining the potential of the online system. The queries posed constitute the central focus of every research study. To obtain the necessary information, the categories of questions were meticulously determined based on the research objectives. After the survey instrument was created, it was evaluated by a subset of the users. The data-gathering process was approved by the ethics committee of Trinity University of Asia.

Statistical Treatment of Data

The most challenging aspect of the research lies in selecting the most important data and information and drawing balanced conclusions. The treatment of data is another important aspect of the research. Weighted Mean for the Grouped Data were utilized by the researcher.

$$X = \frac{\sum fx}{\sum f} = \frac{\sum fx}{N}$$ *Equation 2*

Where:

X	=	mean	F	=	frequency
$\bar{X}$	=	individual score of measure	$\sum$	=	sum of frequencies
N	=	number of cases or respondents			
$\sum fx$	=	sum of frequencies times the measures			

RESULTS

As shown in Table 1, it is essential for the success of a system to receive a classification of "very satisfactory" based on ISO 25010 criteria. The Functionality (3.91) of the system is crucial because users expect it to meet their specific requirements and execute tasks accurately. A high rating for functionality indicates that the system meets the needs of its users, resulting in increased consumer satisfaction and engagement. Users depend on the system's accessibility and dependability, so Reliability (4.02) is also vital. A satisfactory rating for dependability ensures that users can consistently access the system

without experiencing errors or interruptions, fostering confidence, and encouraging repeat visits. Usability (4.01) is crucial for attracting and keeping consumers. A rating of very satisfactory in usability indicates that the system is user-friendly, intuitive, and provides a positive user experience. This increases user engagement, promotes extended visit durations, and increases user loyalty. Efficiency (4.05) is essential for enhancing the user experience. A system with a high-efficiency rating demonstrates rapid response times, quick loading times, and efficient resource utilization. Users appreciate systems that promptly deliver content and services, resulting in greater user contentment and retention. With the proliferation of different platforms and devices, Portability (3.97) is becoming increasingly important. A system with a very satisfactory rating in portability is adaptable across multiple environments and can be accessed seamlessly on multiple devices, allowing for a greater user base and enhancing user convenience.

Table 1: Respondents' Evaluation of the Mary Alston Hotel's Reservation System of Trinity University of Asia

Software Criteria	Rating	Interpretation
Functionality ● The capability of software to offer functions that fulfill users' stated and implied demands within the stipulated conditions of usage is referred to as functionality.	3.91	Very Satisfactory
Usability ● Software product's capacity to be understood, learned, utilized, and appealing to the user under predefined conditions.	4.01	Very Satisfactory
Reliability ● The capacity of a software product to sustain a certain level of performance when operated under specific conditions is referred to as reliability.	4.02	Very Satisfactory
Efficiency ● The capacity of a software product to offer suitable performance relative to the number of resources required under specified conditions is defined as efficiency.	4.05	Very Satisfactory
Portability ● The ability of a software product to be transferred from one environment to another is referred to as portability. Organizational, physical, and software factors all have a role in the environment.	3.97	Very Satisfactory
Over-all Weighted Mean	4.00	Very Satisfactory

DISCUSSION

The study aimed to design components for a hotel reservation system. The initial module effectively resolved disputes in room scheduling by enabling visitors to access real-time room availability information online. This improved the administration of reservations and prevented any scheduling conflicts. The second module effectively calculated billing statements, minimizing potential inaccuracies and enhancing client pleasure, while equipping the hotel with a more comprehensive financial comprehension. The third module enhanced inquiries and bookings by implementing an efficient reservation procedure, while the fourth module facilitated real-time reports for monitoring hotel performance, hence supporting data-driven decision-making. Finally, the study incorporated an assessment procedure to guarantee that the system fulfilled its goals and met the criteria of the client.

CONCLUSIONS AND RECOMMENDATIONS

This thesis provides a concise summary of findings derived from the development and evaluation of the system. The research focuses on evaluating key aspects of the system based on ISO standard criteria and yielding valuable insights for improving system performance and enhancing user experience. The satisfaction of customers can yield a range of advantages, such as fostering growth and enhancing competitiveness. Ensuring a great customer experience is crucial for fostering and sustaining relationships with current clientele, as well as for recruiting prospective consumers. Dissatisfied customers provide a potential risk to the sustainability of their patronage since their departure can impact the overall trajectory of the customer experience (Peterson, 2023).

The Online Reservation System was developed and carefully designed to incorporate all the necessary functions required to cater to the needs of its users. Following its implementation, the system underwent evaluation by its users, who assessed its performance and functionality. The evaluation results were overwhelmingly positive, as the system received a "very satisfactory" rating, confirming its success in meeting user expectations and delivering a high-quality experience. The development of the system provided valuable insights and a framework for future development. The proposed model presented a framework for enhancing user experience, optimizing resource allocation, and streamlining operations in systems that have similarities with the established system.

Based on the study's findings and the results of the conducted survey, the following are suggested:

1. It was determined that the Mary Alston Hotel's Reservation System of the Trinity University of Asia was functional and beneficial and that all system users would benefit from the system. Therefore, the aforementioned system shall be created and utilized as the official Mary Alston Hotel's Reservation System of the Trinity University of Asia.

2. For proper file maintenance and record management, it is recommended that the electronic database be backed up regularly; The use of a Content Management System (CMS) to help organize, control, and publish large bodies of documents and multi-media content, and an Access Control Level (ACL) should be observed to maintain data accessibility, data integrity, and data security.
3. It is suggested that future studies investigating the Mary Alston Hotel's Reservation System of the Trinity University of Asia should consider doing user experience analysis, assessing scalability, and researching the integration of developing technologies. These measures can help improve efficiency and address the changing needs of customers.

IMPLICATIONS

The practical implications of this project are significant for the hospitality industry and beyond. The implementation of an online reservation system not only offers guests the convenience of 24/7 reservations but also greatly enhances the efficiency of the registration process, demonstrating the importance of embracing technology to improve customer service. Moreover, the adoption of Agile methodology and CSS implementation in project development showcases the benefits of breaking complex projects into manageable stages and enhancing the visual appeal of online systems. The positive evaluation results and the developer's recommendation underscore the potential for technology-driven solutions to enhance operational efficiency and customer satisfaction, encouraging other businesses to consider similar implementations to stay competitive and meet evolving customer expectations.

ACKNOWLEDGEMENT

This research study owes a lot of gratitude to several individuals who selflessly contributed their ideas and time to bring this research study to its birth and fruition. The Proponents acknowledge with deep gratitude and appreciation the contributions of the following, without them this research study could not have been possible. To Dr. Fernando V. Trinidad, Dean of the College of Hospitality and Tourism Management, who helped guide the development of our research with his suggestions, incisive criticisms, and patient encouragement. To the Panelists, for giving valuable comments, suggestions, and their immense knowledge and advice to make this research meaningful. To our family and loved ones who served as our inspiration, motivator, and provider for our financial expenses. And to the University Research and Development Center for their assistance in the publication of this research.

FUNDING

No organization provided funding for the study.

DECLARATIONS

Conflict of Interest

All authors declared that they have no conflict of interest.

Informed Consent

The study sought approval from the Trinity University of Asia - High School, including the faculty, parents, and students, to participate in the research. It can assist them in conducting research on effective management strategies and developing a well-designed and user-friendly system.

Ethics Approval

The conducted research underwent review by the Institutional Ethics Review Committee of the Trinity University of Asia with the protocol code 2023-2nd-CEIS-Caritos-V1.

REFERENCES

Bemile, R., Achampong, A. K., & Danquah, E. (2014). *Online Hotel Reservation System. ResearchGate*. https://www.researchgate.net/publication/274079295_Online_Hotel_Reservation_System

Bespoke Revenue Management. (n.d.). *Bespoke Revenue Management*. https://www.bespokerm. com/blog-category/articles-by-bespoke-revenue-management/

Cmo, J. B. (2023). *What are the stages of business process management? HighGear*. https://www.highgear.com/blog/what-are-the-stages-of-business-process-management/

Colcol, S. (2023). *Hotel Reservation System: Everything You Need to Know.* SiteMinder. https://www.siteminder.com/r/hotel-reservation-system/

Elphick, D. (2019). *8 reasons why a mobile app is a good idea for your hotel. SiteMinder.* https://www.siteminder.com/r/technology/hotel-mobile-technology/8-reasons-hotel-mobile-app-good-idea-hotel/#:~:text=Hotel%20apps%20offer%20a%20more,guest%20a%20more%20positive%20experience.

Golla, F. (2021). *Hotel reservation system: 6 reasons why your hotel needs One. Stayntouch.* https://www.stayntouch.com/blog/hotel-reservation-systems-6-reasons-why-your-hotel-needs-one/

Hotel Property Management Systems: Products and Features. (2020). AltexSoft. https://www.altexsoft.com/blog/travel/hotel-property-management-systems-products-and-features/

Kim, Y. J., & Kim, H. S. (2022). *The Impact of Hotel Customer Experience on Customer Satisfaction through Online Reviews. Sustainability; Multidisciplinary Digital Publishing Institute*. https://doi.org/10.3390/su14020848

Lacalle, E. (2023). *Benefits of managing real-time reservations in your hotel.* https://www.mews.com/en/blog/real-time-bookings

Nikolopoulou, K. (2023). *What Is Purposive Sampling?* | Definition & Examples. Scribbr. https://www.scribbr.com/methodology/purposive-sampling/

Peterson, K. (2023). *Customer satisfaction: tips to utilize the benefits of It. QuestionPro.* https://www.questionpro.com/blog/importance-and-benefits-of-customer-satisfaction/

Sarmiento, P. (2020). *System Modules of Online Hotel Reservation System. iNetTutor*. Retrieved from https://www.inettutor.com/ source-code/system-modules-of-onlinehotelhttps://www.inettutor.com/source-code/system-modules-of-online-hotelreservation-system/ reservation-system/

Sharma, M. (2022). *How technology can help incorporate sustainability into the hotel business* - Hotelogix. Hotelogix. https://www.hotelogix.com/blog/ technology-sustainability-hotel-business/

Wynn, M. G., & Jones, P. (2022). *IT Strategy in the Hotel Industry in the Digital Era. Sustainability; Multidisciplinary Digital Publishing Institute*. https://doi.org/10.3390/su141710705

Zach. (2023). *What is Slovin’s Formula?* (Definition & Example). Statology. https://www.statology.org/slovins-formula/

Author's Biography

Jade Anne L. Caritos was from the College of Engineering and Information Sciences of the Trinity University of Asia. She graduated with a degree of Bachelor Science in Information Technology in 2022. Her field of specialization is in Software Engineering.

Mark Angelo M. Ignacio was a graduate of Trinity University of Asia's College of Engineering and Information Sciences. In 2022, He completed his Bachelor of Science degree in Information Technology. Software engineering is his area of expertise.

Melanny Krystyn B. Maglipon completed her studies at Trinity University of Asia's College of Engineering and Information Sciences and graduated with honors. In the year 2022, she was able to successfully fulfill the requirements for her Bachelor of Science degree in Information Technology. She is an expert in software engineering, which is her field of competence.

Ellan Justin C. Patron after completing his studies at Trinity University of Asia's College of Engineering and Information Sciences, Michael received his degree. In the year 2022, he was able to successfully fulfill the requirements for his Bachelor of Science degree in Information Technology. For him, the area of knowledge that he possesses is software engineering.

EIvan Denzel C. Utanes, following the completion of his studies at Trinity University of Asia's College of Engineering and Information Sciences, Michael was awarded his degree. In the year 2022, he was able to complete all of the requirements necessary to earn his Bachelor of Science degree in Information Technology. Software engineering is the domain of expertise that he holds due to his own experience.

Ma. Fe R. Llevado is employed by the College of Engineering and Information Sciences at Trinity University of Asia as a faculty member. Her area of expertise is software engineering, and she holds a Bachelor of Science degree in Computer Science.

Emilyn A. Donor holds a Master's degree in Information Technology and is presently employed as an IT instructor. Her area of expertise lies in system analysis, design, and software engineering.

Ferdinand R. Bunag is a member of the faculty at Trinity University of Asia's College of Engineering and Information Sciences. Software engineering and system design and development constitute his areas of expertise.