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C2C Startup Model of Balinese Ceremony Ticketing System in Ubud Bali

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Abstract

Ubud is one of the tourist destinations in Bali. Ubud combines natural attractions, culture, and spiritual life harmoniously. One of the elements of cultural attraction in Ubud is the implementation of traditional and religious ceremonies that uphold ancestral customs. With this potential, Ubud can be a tourist destination supporting Balinese cultural tourism's progress. Currently, information regarding the implementation of traditional and religious ceremonies in Ubud is limited to tourists. Tourists can witness the traditional and religious ceremonies held through information from tour guides, who are ceremony organizers. The availability of a ceremony ticketing system that connects tourists with traditional village/banjar communities can directly address the problem of access to information and services for the implementation of traditional and religious ceremonies in Ubud. This study aims to develop a C2C e-commerce model that involves klian adat and tourists directly selling tickets for traditional and religious ceremonies in Singakerta Village, Ubud District. Given the limited time for system development, the RAD software development method was selected as the system development method. The user experience test's Likert scale results showed that the system's quality reached 84.13% for tourist satisfaction and 84.19% for klian adat satisfaction. This indicates that the system is at an excellent level based on the user.

Keywords: *C2C, Balinese Ceremony, Ticketing System, Ubud, RAD*

1. Introduction

Bali has great potential for generating foreign exchange from the tourism sector. One of the areas in Bali that is popular among tourists is Ubud. Ubud is an area that combines natural attractions, culture, and spiritual life in a harmonious whole. Tourists generally visit Ubud because they are interested in Balinese culture and want a spiritual experience through meditation and yoga activities. Community life in Ubud, which is still thick with implementing Balinese religious and cultural activities, is a unique characteristic of this area, making it a special attraction for tourists. With this potential, Ubud can become a tourist area in Bali that can support the progress of Balinese cultural tourism.

Ubud's center is in Ubud Village, where the community enjoys a more significant portion of tourism revenue through residents' provision of tourism accommodation. Singakerta Village, as part of Ubud District, has a smaller opportunity to enjoy tourism benefits because of its location, but Singakerta Village has the advantage of quieter traffic. Singakerta Village has five traditional villages and 14 Banjar[1]. Like other areas in Ubud, implementing traditional and religious ceremonies in Singakerta Village still strongly adheres to Balinese cultural traditions. This sector has not yet been properly developed as a supporting element for cultural tourism. Figure 1 shows a photo of a Ngaben ceremony in Singakerta Village in 2023. Based on the limitations of the scope of the research and the potential of Singakerta Village, the implementation of the research object was represented by Singakerta Village, Ubud.

Banjar is an administrative division of land in Bali under a sub-district or village at the same level as the Rukun Warga (RW). It is a unit that specifically carries out its function of taking care of

matters related to customary activities. Banjar is a local community that applies traditional law. Banjar and community forum members elect the leader (Klian Adat).

Figure 1. Ngaben Ceremony in Singakerta Village in 2023

Information on the implementation of traditional and religious ceremonies in Ubud for tourists is still very limited, and it is only through word of mouth among tour guides. The main problem this study aims to answer is the lack of information and facilities for tourists to witness traditional and religious ceremonies, especially in Singakerta Village, Ubud. It is hoped that with a platform for tourists, the support of Singakerta Village in increasing the attractiveness and popularity of Ubud as a tourist village in Balinese cultural tourism will become even stronger.

The availability of a Balinese ceremony ticketing platform that connects tourists and traditional villages/banjar directly is expected to address the problems mentioned earlier. Tourists will have the opportunity and facilities to witness traditional and religious ceremonies in Singakerta Village directly, and Banjar will receive economic benefits from these tourist activities. It is hoped that with the Balinese ceremony ticketing system, the implementation of traditional and religious ceremonies by the Ubud community will become a new and sustainable Balinese cultural tourism product.

Tourists interested in directly witnessing traditional and religious ceremonies in Singakerta Village can choose the ceremony they want, along with their schedule, using the website-based e-ticketing system. Meanwhile, the klian adat plays a role in registering the traditional and religious ceremonies that will be held in their banjar on the website. Because it connects tourists and Klian Adat directly, this system is included in the customer-to-customer (C2C) e-commerce system. The Rapid Application Development (RAD) software development approach can overcome the short system development time.

Several studies have been conducted on the development of e-ticketing systems. We categorized these studies as reservations for events, transportation, tours, and travel. Research by [2] created an e-ticketing system for ticket reservations at art performances using the System Development Life Cycle (SDLC) Waterfall approach. Meanwhile, a prototype system development method approach for e-ticketing systems for music concerts was conducted by research[3]. Research on the development of e-ticketing systems has also been conducted for cinema tickets[4], tickets to watch sports matches[5][6][7], hotel events[8], and campus events[9][10].

In the field of transportation, [11] proposed an e-ticketing system using the SDLC SCRUM approach for bus ticket sales, and [12] raised LRT ticket sales using the SDLC system development method. Research by [13] built an e-ticketing system with a QR code based on the Internet of Things (IoT) for purchasing ferry tickets. Research has also developed an e-ticketing system with QR-Code [14]. Using QR-Code can provide security from ticket fraud practices and ticket scalping activities, which often results in high costs and trust issues for consumers who buy

tickets, especially in the secondary ticket market[15][16]. Other studies use blockchain and RFID security methods[17][18] for the e-ticketing sales.

The B2B e-ticketing system for tours and travel was researched in the field of tour and travel [19] using the SDLC method approach. Only one study [20] In the tourism domain, this research developed an e-ticketing system for Mount Budheg Tulungagung climbing tours using the SDLC Waterfall model approach.

The e-ticketing system is not new, but previous researchers have never studied its application to traditional and religious ceremonies in Bali. The characteristics of religious ceremonies are unique compared to those of other events, which are generally B2C. This is the main novelty of this study, in which e-ticketing was developed using the C2C model. Another novelty is the approach to software development using the RAD method. Previous studies have used SDLC and prototype methods to develop e-ticketing software.

The contribution and purpose of this study is to develop a conceptual model of the Minimum Viable Product (MVP) of the Balinese Ceremony Ticketing System with a trial location in Ubud Bali. Innovation and critical problem-solving lie in the system design in this case, including database design, especially business process design, and system interface design, which can address the problems in this research. While the current research objective does not encompass the development of specialized algorithms, such as those utilizing Artificial Intelligence (AI), this avenue presents a promising direction for future research. This study, however, contributes significantly to the foundational design of the Minimum Viable Product (MVP) for a Balinese ceremony ticketing system. This foundational design is a crucial step towards technical optimization by streamlining business processes.

2. Research Methods

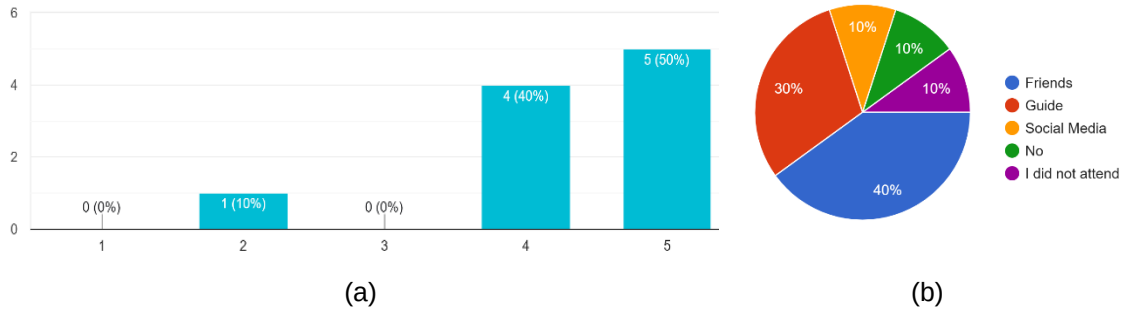
Building a startup involves stages that take an idea from the initial concept to a fully functioning and sustainable business. These stages include Ideation and Idea Validation, Planning and Preparation, Product Development, Launch, Growth, Monetization and Optimization, and Scale-Up and Sustainability. This research aims to develop an MVP (Minimum Viable Product): Build a basic version of the product with core features to solve the main user problems, meaning the startup is only in the product development phase. Further time, effort, and research are needed to contribute to the next stage of startup development.

2.1. Ideation and Idea Validation

This study identified the problem of many tourists who want to witness traditional and religious ceremonies in Bali. Still, very few can witness them directly for several reasons, such as lack of information on the time and place of the ceremony and lack of information on the rules for visiting temples so that even though tourists know that the ceremony is being held, they cannot witness the religious ceremony directly. The opportunity for this tourism activity exists because we witnessed several tourists escorted by local tour guides to religious ceremonies. The ceremony happened in the village from which the tour guide came. We define the development of our idea as follows: Can tourists who want to witness traditional and religious ceremonies in Bali have a place to obtain information widely and be able to watch traditional and religious ceremonies in Bali in an orderly and measurable manner? Therefore, an application or system that can address these issues is required. A competitor analysis of searches on Google for the e-ticketing system for traditional and religious ceremonies in Bali has not been found, so it is concluded that there are no competitors in this area.

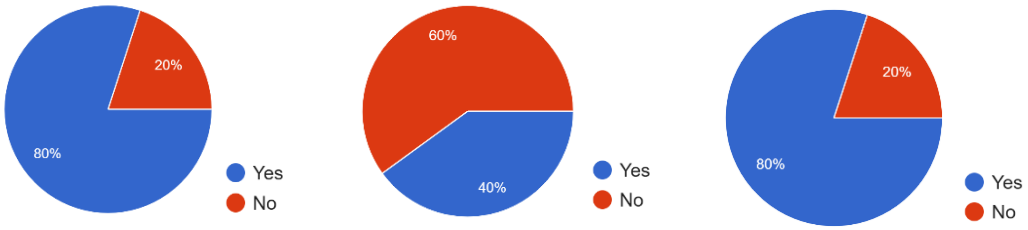
For idea validation, we surveyed foreign tourists around Ubud. We asked several questions that made many tourists interested in religious ceremonies in Bali and supporting the Balinese ceremony ticket system platform. The survey results are shown in Figures 2 and 3. Figure 2a shows the distance of tourists' interest in Balinese culture, 1 for not interested and 5 for very interested. Figure 2b shows how information about ceremonies in Bali was obtained. Figure 3a shows the percentage of tourists' interest in attending traditional Balinese ceremonies. Figure 3b shows whether tourists had information about the time and place of the Balinese ceremony. Figure 3c shows tourists' interest in buying ceremony tickets when a Balinese ceremony ticket system platform exists. Survey findings indicate a substantial market opportunity for a Balinese

ceremony ticketing system. The high tourist interest demonstrated in the survey included a strong interest in Balinese culture, a desire to witness traditional ceremonies, and a willingness to use a ticketing system platform to purchase tickets. This opportunity is also supported by the fact that most tourists lacked information about the ceremony's schedule and details, with information primarily coming from limited sources.



(a) (b)

Figure 2. (a) Balinese Cultural Interest, (b) Information Source about the Ceremony



(a) (b) (c)

Figure 3. (a) Interested in Attending the Ceremony, (b) Available Information about the Place and Time of the Ceremony, (c) Willing to Buy Tickets From the Balinese Ceremony Ticketing System

2.2. Planning and Preparation

Our Balinese ceremony ticketing system business model is described in a business model canvas, as shown in Figure 4. The figure clearly illustrates the business model, which consists of Key Partners, Key Activities, Value Proposition, Customer Segments, Channels, Customer Relationships, Key Resources, Cost Structure, and Revenue Stream. Figure 4 lists the initial planning that will be refined again with iterative design thinking in the future.

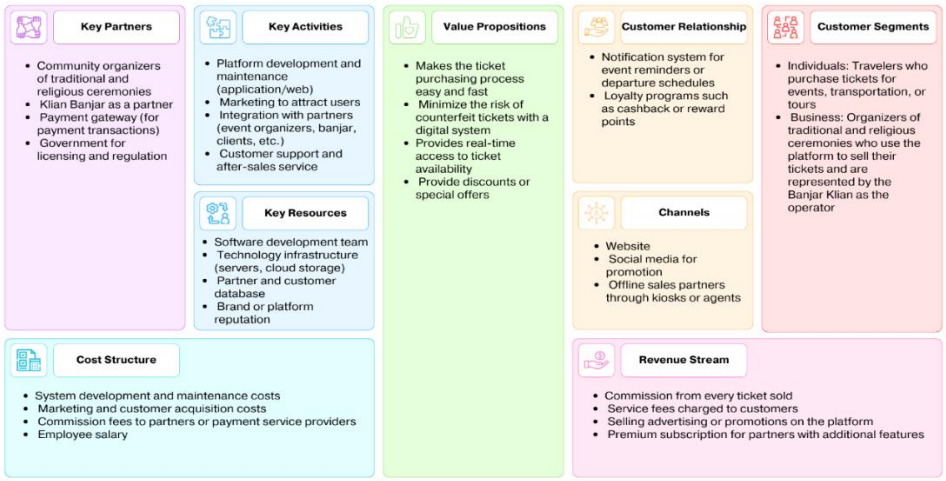


Figure 4. Business Model Canvas

2.3. Product Development

The Balinese ceremony ticketing system is a simple ticket sales system involving three groups of users. The first group of users are tourists who intend to witness live traditional and religious ceremonies in Singakerta Village. Tourists log into the system, choose the ceremony they want to attend according to the available schedule, and then make payments. The second group of users is klian adat, where klian adat registers the ceremony to be held in their banjar and limits how many visitors are expected. Klian Adat can also obtain information about the list of tourists who buy tickets. The third user is the admin of the Balinese ceremony ticketing system, where the user is tasked with verifying ticket purchases and disbursing ticketing funds to the Banjar. A complete description of this system is shown in Figure 5.

The developed system was a C2C model-based system. C2C is a form of e-commerce transaction in which customers offer their products or services directly to other customers [21]There are two C2C models: classified and marketplace models. With the classified model, the freedom to make transactions is handed over between the seller and buyer, while the marketplace model requires a container for the transaction process. The C2C model in the developed system is included in a marketplace where the platform accommodates the transaction process.

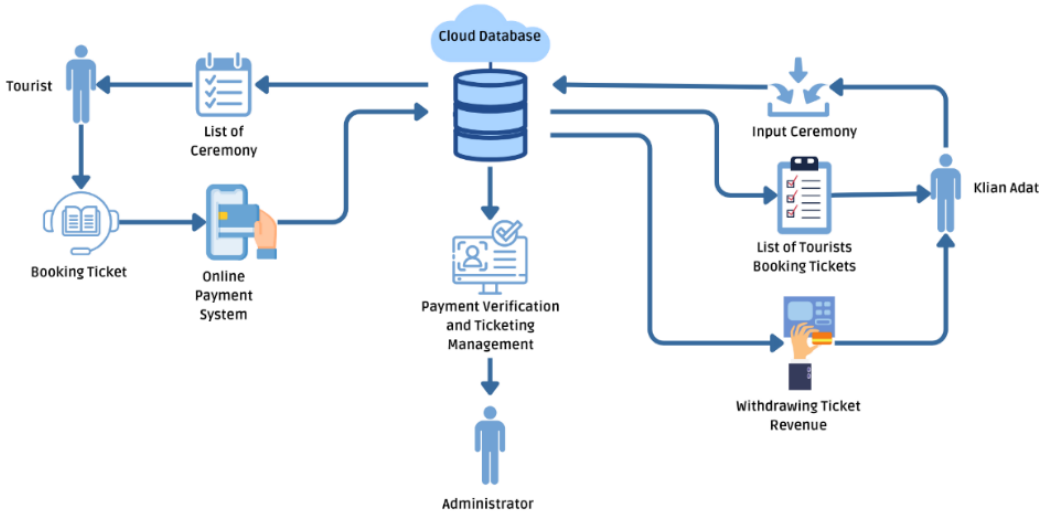


Figure 5. Balinese Ceremony Ticketing System Overview

The system was developed using the RAD method. RAD is a software development process model that emphasizes a short development cycle of generally 90 days. RAD has four main stages: requirement planning, user design, construction, and implementation[22]. RAD emphasizes a fast and high-quality development cycle compared with several other methods, such as waterfall, agile, and scrum[23]. In addition, RAD can improve user communication and participation because this method involves both clients and users in the development process so that developers can better understand user needs[24]. RAD is a method in which the system being developed is divided into several modules developed in parallel. In this system, the process of creating the system software construction runs in parallel with developing three modules simultaneously: a ticket sales module, a ceremony registration module, and a ceremony management and ticket management module.

To test the developed Balinese ceremony ticketing system, black box testing and user experience questionnaires were used from the perspective of Klian adat and tourist experience. The use of user experience questionnaires to test software is in line with research by [25][26], Questionnaire analysis was carried out using a Likert scale for 15 questions, as shown in Table 1, and five answer choices: Strongly Agree (score 5), Agree (score 4), Undecided (score 3), Disagree (score 2), and Strongly Disagree (score 1).

Table 1. Questionnaire List

Question Code	Questions for Tourists and Klian Adat
Q1	Do you agree that the Balinese ceremony ticketing system interface is easy to understand?
Q2	Do you agree that the information displayed on the Balinese ceremony ticketing system system is clear?
Q3	Do you agree that the color scheme and fonts of the Balinese ceremony ticketing system are visually comfortable?
Q4	Do you agree that the menu layout is organized and structured?
Q5	Do you agree that navigation between pages is straightforward to use?
Q6	Do the menus in the Balinese ceremony ticketing system system function properly?
Q7	Do you agree that the Balinese ceremony ticketing system is fast in accessing various features?
Q8	Do you agree that the way the Balinese ceremony ticketing system system works is easy to learn?
Q9	Do you agree that the ticket booking process is easy to complete?
Q10	Do you agree that the Balinese ceremony ticketing system does not display errors or issues during use?
Q11	Do you agree that the Balinese ceremony ticketing system is effective and efficient?
Q12	Do you agree that the Balinese ceremony ticketing system is functional?
Q13	Do you agree that the Balinese ceremony ticketing system has innovations not found in other systems?
Q14	Do you feel secure using this system?
Q15	Do you agree that you would recommend the Balinese ceremony ticketing system to others?

The results of the Likert scale are calculated based on the formula.

$$\text{Total score} = T \times Pn \quad (1)$$

T is the total number of respondents, and Pn is the choice of Likert score numbers (5, 4, 3, 2, 1). The percentage of the final Likert scale results is calculated using the formula:

$$\text{Score result \%} = \text{Total score} / Y * 100 \quad (2)$$

With Y calculated using the formula:

$$Y = \text{highest Likert score} * \text{number of respondents} \quad (3)$$

The score results in percentages calculated using a Likert scale were divided into several categories that describe the system's quality, as shown in Table 2.

Table 2. System Quality Result Category

Interval	System Criteria
0% 19.99%	Very Bad
20% - 39.99%	Bad
40% - 59.99%	Fair
60% - 79.99%	Good
80% - 100%	Very Good

3. Result and Discussion

The RAD stage was completed within 90 days. In the first stage, namely requirement planning, a needs analysis was conducted for three users, as listed in Table 3. In addition, the payment process uses the Midtrans payment gateway to maintain transaction security.

Table 3. System Requirements Analysis

User	Task
Admin	Manage Klian Adat data
	Manage Banjar data
	Verify ceremonies
	Verify fund withdrawals
	Log in
Klian Adat	Manage ceremony data
	Withdraw funds
	View ticket data
	Log in
Tourist	Order tickets
	Make ticket payments
	Log in
	Register

The second stage is user design, built based on system requirements analysis of 3 users. The third stage, namely construction, includes the construction of the system shown through several dialog interfaces, as seen in Figure 6-11. This system was developed using Laravel, JavaScript, and MySQL databases. The tools used include XAMPP, a web browser, and Visual Studio Code. The ticket payment page is shown in Figure 6, which displays a detailed page or payment invoice before tourists make payments through various payment methods. The ticket ordering dialog for tourists, shown in Figure 7, displays a form for filling in the identity of each tourist who orders a ticket for the ceremony.

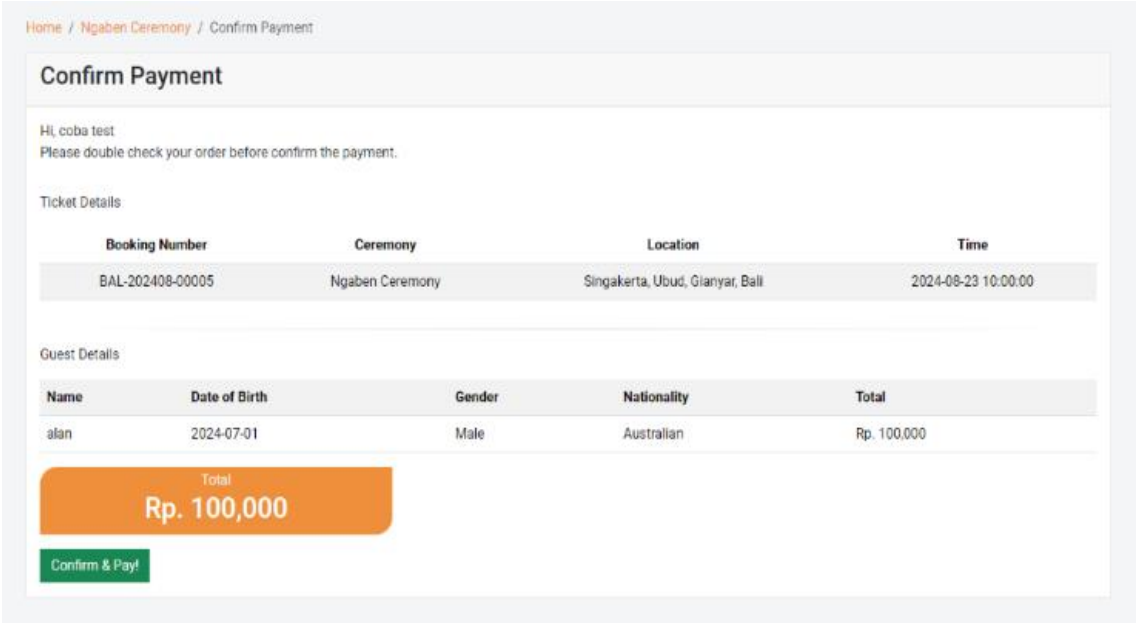


Figure 6. Ticket Payment Page

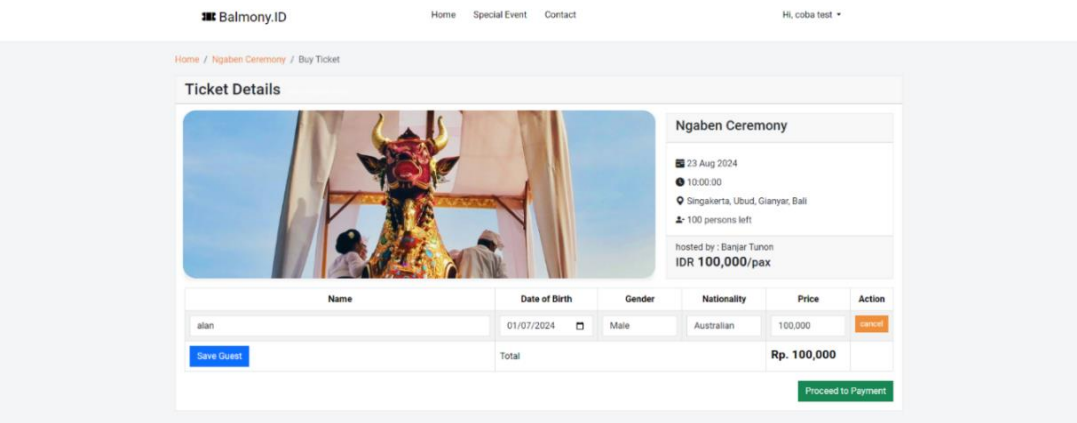


Figure 6. Ticket Booking Page

On the Klian Adat side, there is a ceremony registration dialog, as shown in Figure 8. Klian Adat enters the detailed information of the ceremony to be held. The admin verifies the submitted ceremony, as shown in Figure 9.

There is also a dialogue when you want to withdraw funds from ticket sales, which is done on the withdraw ticket revenue page shown in Figure 10. The admin first verifies the application on the withdrawal verification shown in Figure 11.

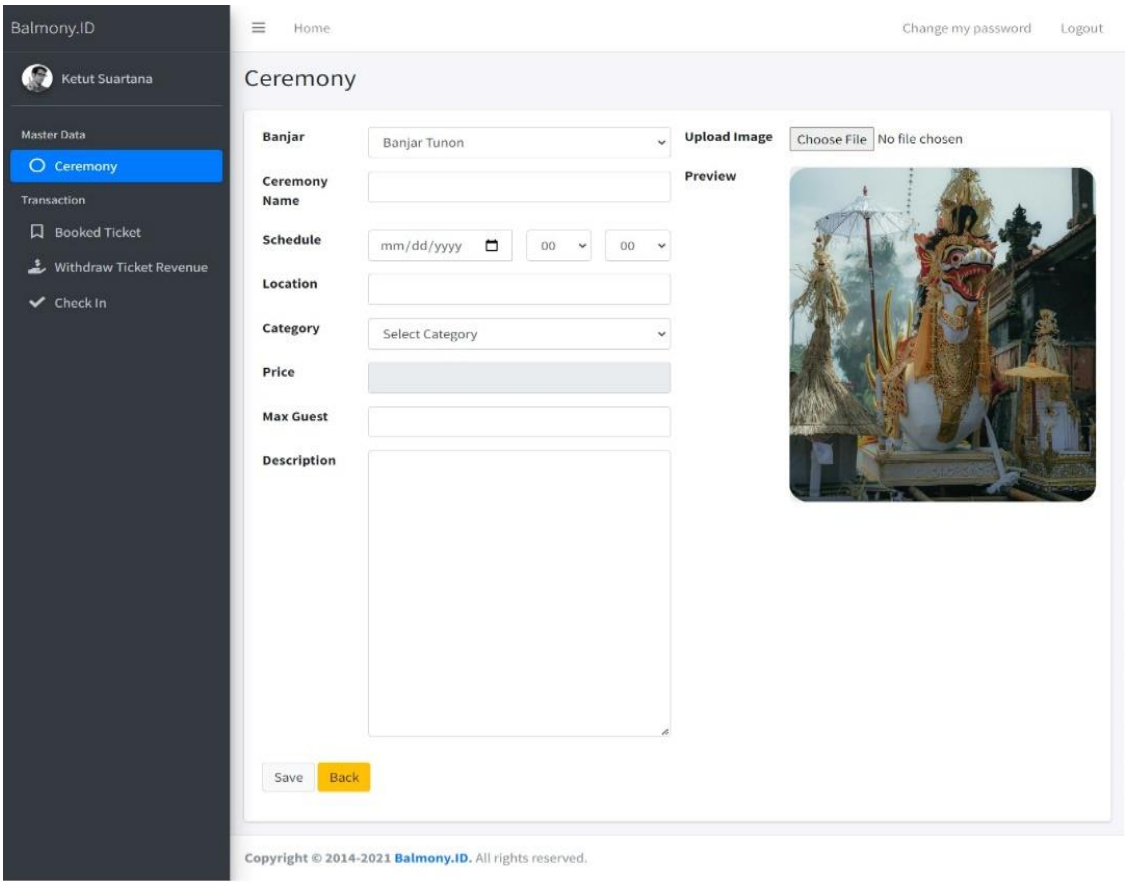


Figure 7. Klian Adat Add Ceremony Page.

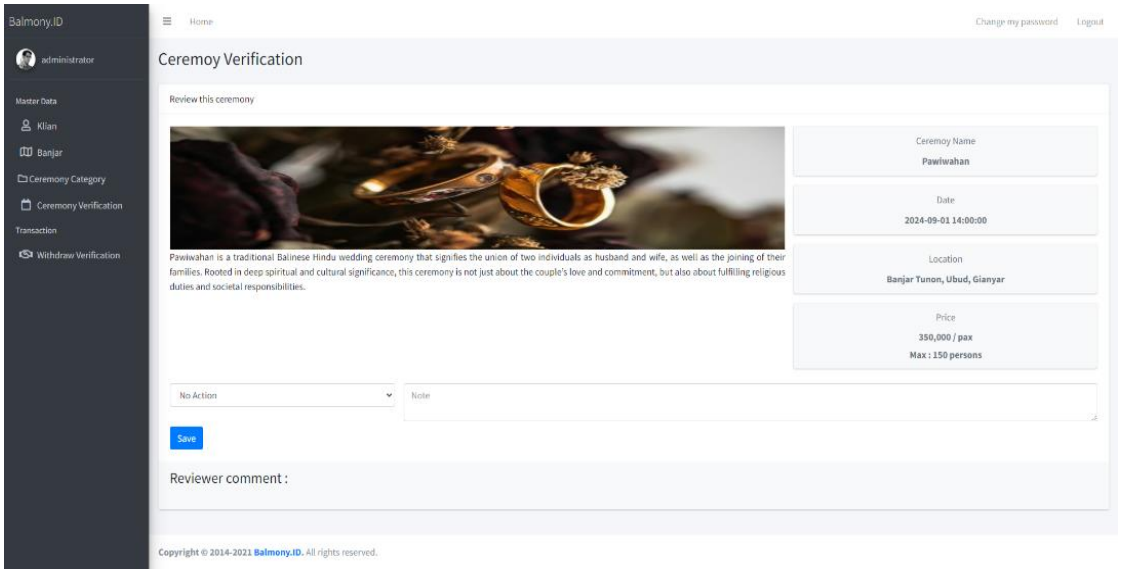


Figure 8. Admin Verifying Ceremony Page.

The final stage in RAD is implementation, where testing is carried out. As mentioned, this study used a questionnaire to determine the quality of a ticketing system built using 15 questions for Klian and tourists. Respondents who filled out the questionnaire included 14 from the Klian Adat and 31 from tourists. The questionnaire results and the Likert scale calculation are shown in Table 4 for tourists and Table 5 for the Klian Adat.

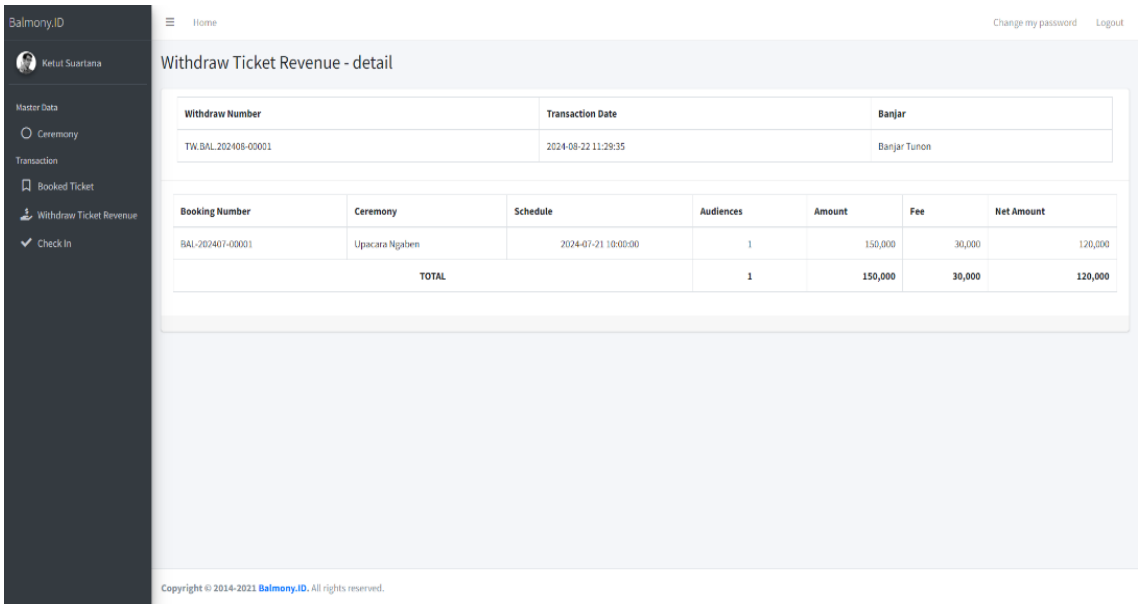


Figure 9. Submission of Ticket Sales Collection by Klian Adat

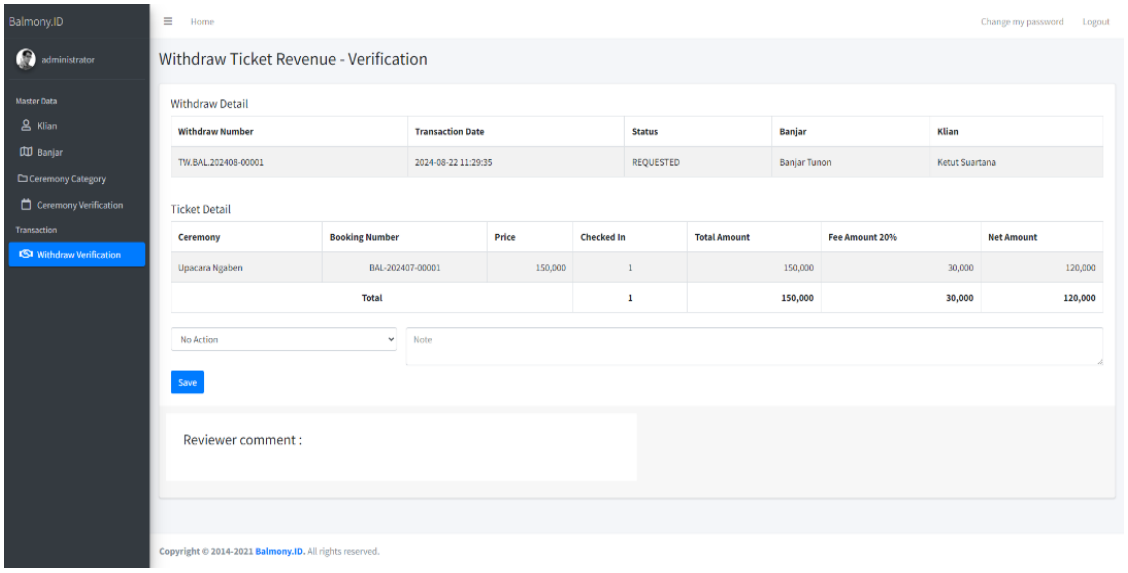


Figure 10. Verification of Ticket Sales Withdrawal Submission by Admin

Table 4. Tourist Respondents Likert Scale

Question	Answer Options					Number
	Strongly Agree	Agree	Undefined	Disagree	Strongly Disagree	
x	5	4	3	2	1	
Q1	15	12	4	0	0	31
Q2	9	18	3	1	0	31
Q3	13	12	5	1	0	31
Q4	11	13	6	1	0	31
Q5	12	16	3	0	0	31
Q6	16	10	5	0	0	31
Q7	15	11	4	1	0	31
Q8	15	14	1	1	0	31
Q9	15	12	2	2	0	31
Q10	17	8	4	1	1	31
Q11	16	9	6	0	0	31
Q12	15	10	6	0	0	31
Q13	9	11	9	1	1	31
Q14	11	8	9	1	2	31
Q15	13	12	5	1	0	31
F {x}	1010	704	216	22	4	1956
			Total score			1956/5
			The total number of respondents who answer			465
			% = Total score/465*100			84,13

Table 5. Klian Adat Respondents Likert Scale

Question	Answer Options					Number
	Strongly Agree	Agree	Undefined	Strongly Agree	Agree	
x	5	4	3	2	1	
Q1	7	5	0	1	1	14
Q2	5	5	3	0	1	14
Q3	4	8	0	1	1	14
Q4	5	5	2	0	2	14
Q5	6	6	0	1	1	14
Q6	7	6	0	1	0	14
Q7	7	4	2	1	0	14
Q8	9	4	1	0	0	14

Q9	8	4	2	0	0	14
Q10	6	6	1	1	0	14
Q11	8	5	0	0	1	14
Q12	9	4	1	0	0	14
Q13	7	3	3	1	0	14
Q14	6	5	2	1	0	14
Q15	7	5	1	1	0	14
F {x}	505	300	54	18	7	884
			Total score			884/5
			The total number of respondents who answer			210
			% = Total score/210*100			84,19

The Likert scale results show that the system's quality reached 84.13% and 84.19%, respectively. This indicates that the system is at an excellent level based on the user experience. Respondents stated that the system is effective and reliable regarding the system interface and clear, easy-to-understand, and easy-to-use system information. In addition, it has been running well according to its function in terms of system performance, business flow, and system security. Several things need to be maximized, based on the number of answers, disagree and strongly disagree, even though the respondent's answers are more positive, including P1, P3, P4, and P5, regarding the selection of colors and fonts and the ease of use of the system represented by menu instructions and menu layout. Thus, by maximizing the system, it can run better according to user needs.

The system was also tested using black-box testing, and based on the test results, it was shown that the function of each feature in the system runs well. The details of the black-box testing are listed in Table 6.

Table 6. Blackbox Testing

Test Class	Scenario	Expected Results	Conclusion
Admin, Client, and Traveler login is correct	Enter the correct email and password	Enter the system, login successfully	suitable
Admin, Client, and Traveler login is wrong	Enter the incorrect email and password	Unable to enter the system, login failed	suitable
Logout	Clicking the logout button	Return to a landing page, exit the system	suitable
Create Account	Enter personal data and click register	Successfully created account	suitable
Ticket Booking	Click the buy ticket button, enter the tourist's data	Successfully booked tickets	suitable
Ticket Payment	Click confirm and pay	Displaying virtual accounts and payment methods	suitable
Adding ceremonies by Klian	Filling out the ceremony data form	Successfully added ceremony data	suitable
Filing a Withdrawal of Sale	Click the checklist, click the process button, and click yes on the pop-up "Are you sure?"	Successfully submitted	suitable

4. Conclusion

The trajectory of startup development typically encompasses three key phases: ideation and validation, planning and preparation, and product development. The platform meets the criteria of the C2C model because it directly connects partners (customary clients) and consumers (tourists)

in ticket sales to watch traditional and religious ceremonies in Singakerta Village. Black-box testing and user experience questionnaires were used from the client's and tourist experience's perspectives to test this system. The Likert user experience scale results showed that the system quality reached 84.13% for tourist satisfaction and 84.19% for customary client satisfaction. This indicates that the system is at an excellent level based on user experience. Improvements are needed regarding the selection of colors and fonts and the system's ease of use, as represented by menu instructions and layout. Blackbox testing for system functionality showed that each feature in the system worked well.

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References
[1] K. D. Singakerta, “Data Demografi Desa Singakerta.” 2023.
[2] U. Salamah and E. Maulana, “Development Of Art Performance Tickets Information System At Public High School,” *IJISCS (International Journal of Information System and Computer Science)*, vol. 4, no. 1, pp. 29–39, 2020, doi: https://doi.org/10.56327/ijiscs.v4i1.
[3] Wahyudi, “Pengembangan Aplikasi Sistem E-Ticketing Konser Musik Dengan Seating Number,” *JIKA (Jurnal Informatika)*, vol. 4, no. 1, p. 22, 2020, doi: 10.31000/jika.v4i1.2361.
[4] A. A. G. S. Utama, P. P. D. Astuti, E. E. Hikmawati, and Y. Setyowati, “Design E-Ticketing System to Increase Ticket Sales in Banyuwangi Branch New Star Cineplex,” *Proceedings of the International Conference on Management, Business, and Technology (ICOMBEST 2021))*, vol. 194, no. December, 2022, doi: 10.2991/aebmr.k.211117.017.
[5] S. Bittner, K. Kim, Y. Zeng, and Q. A. Abed, “Study of Method to Booking e-tickets for Iraqi Stadiums using the Smartphone,” *Journal of Physics: Conference Series*, vol. 1897, no. 1, p. 012069, May 2021, doi: 10.1088/1742-6596/1897/1/012069.
[6] E. S. Soegoto and I. F. Siddiq, “Development of online ticket system at a football club in Bandung, Indonesia,” *IOP Conference Series: Materials Science and Engineering*, vol. 407, no. 1, pp. 0–6, 2018, doi: 10.1088/1757-899X/407/1/012049.
[7] N. Fatumah and N. Moses, “Online Events Ticketing Management System A Case Study Of Namboole Stadium,” *Metropolitan Journal of Science and Technology*, vol. 2, no. 8, 2023.
[8] C. Gigool, L. Gonsalves, and C. Correia, “Online Event Booking and Management System,” *International Research Journal of Engineering and Technology (IRJET)*, vol. 8, no. 8, pp. 4008–4011, 2021, [Online]. Available: https://www.irjet.net/archives/V8/i8/IRJET-V8I8464.pdf
[9] L. Varthi, “Analysis and Implementation of E-ticketing with Live Chat,” *Culminating Projects in Information Assurance*, 2018.
[10] Y. Herlambang, “Sistem Marketplace Event dan Pemesanan E-Ticket (Studi Kasus : Universitas Islam Indonesia),” Universitas Islam Indonesia, 2021.
[11] J. Sentosa, M. Maharina, and C. Zonyfar, “E-Ticketing System and Integration with Third Parties Scrum-Based,” *Buana Information Technology and Computer Sciences (BIT and CS)*, vol. 2, no. 2, pp. 38–43, Jul. 2021, doi: 10.36805/BIT-CS.V2I2.1868.
[12] Taufik and M. Ariandi, “Sistem Informasi E-Ticketing Lrt Kota Palembang,” *Bina Darma Conference on Computer Science*, pp. 621–627, 2022.
[13] O. Yee Lin, N. Abdullah, and F. Sains Komputer dan Teknologi Maklumat, “Design and Development of Ferry E-Ticketing System with QR Code based on IoT Technology,” *Applied Information Technology And Computer Science*, vol. 4, no. 1, pp. 308–326, Jul. 2023, doi: 10.30880/aitcs.2023.04.01.019.
[14] Erianto, “Rancang Bangun Sistem Informasi E-Ticketing Berbasis Web Menggunakan Teknologi Qrcode,” Universitas Islam Negeri Syarif Hidayatullah, 2022.
[15] S. Feulner, J. Sedlmeir, V. Schlatt, and N. Urbach, “Exploring the use of self-sovereign identity for event ticketing systems,” *Electronic Markets*, vol. 32, no. 3, pp. 1759–1777, 2022, doi: 10.1007/s12525-022-00573-9.
[16] S. Rafati Niya, S. Bachmann, C. Brasser, M. Bucher, N. Spielmann, and B. Stiller, *DeTi: A Decentralized Ticketing Management Platform*, vol. 30, no. 4. Springer US, 2022. doi: 10.1007/s10922-022-09675-3.

[17] A. Nugraha, D. R. Daniel, and A. A. G. S. Utama, "Improving multi-sport event ticketing accounting information system design through implementing RFID and blockchain technologies within COVID-19 health protocols," *Heliyon*, vol. 7, no. 10, p. e08167, 2021, doi: 10.1016/j.heliyon.2021.e08167.

[18] A. Aldweesh, "BlockTicket: A framework for electronic tickets based on smart contract," *PLoS One*, vol. 18, no. 4 April, pp. 1–20, 2023, doi: 10.1371/journal.pone.0284166.

[19] S. Kusuma, "Analysis and Design Integrated e-Ticketing Applications for Business to Business (B2B) System with System Development Life Cycle (SDLC) Approach (Case Study: PT Haryono Tour)," 2017.

[20] M. Christi, W. H. N. Putra, and B. T. Hanggara, "Rancang Bangun Sistem Informasi dan Pelayanan E-Ticket (Booking Online) pada Wisata Pendakian Gunung Budheg Tulungagung menggunakan Website dengan Framework Laravel," *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, vol. 7, no. 1, pp. 83–91, 2023, [Online]. Available: https://j-ptiik.ub.ac.id/index.php/j-ptiik/article/view/12105

[21] N. W. S. Saraswati and I. G. A. A. D. Indradewi, "Empowering Bali's Economy During the Covid-19 Pandemic: Developing MSME C2C E-commerce," Feb. 2022, doi: 10.4108/EAI.27-11-2021.2315529.

[22] N. W. S. Saraswati, N. W. Wardani, K. L. Maswari, and I. D. M. K. Muku, "Rapid Application Development untuk Sistem Informasi Payroll berbasis Web," *MATRIK : Jurnal Manajemen, Teknik Informatika dan Rekayasa Komputer*, vol. 20, no. 2, pp. 213–224, May 2021, doi: 10.30812/MATRIK.V20I2.950.

[23] J. Guo, C. Zeitlin, and R. F. Wimmer-Schweingruber, "Rapid Application Development (RAD) model method for creating an agricultural irrigation system based on Internet of things," *IOP Conference Series: Materials Science and Engineering*, vol. 1098, no. 2, p. 022103, Mar. 2021, doi: 10.1088/1757-899X/1098/2/022103.

[24] M. A. Fauzi, H. Tribiakto, A. Moniva, F. Amir, I. K. Ilyas, and E. Utami, "Systematic Literature Reviews on Rapid Application Development Information System," *Bulletin of Computer Science and Electrical Engineering*, vol. 4, no. 1, pp. 57–64, Jun. 2023, doi: 10.25008/BCSEE.V4I1.1181.

[25] A. Pratama, A. Faroqi, and E. P. Mandyartha, "Evaluation of User Experience in Integrated Learning Information Systems Using User Experience Questionnaire (UEQ)," *Journal of Information Systems and Informatics*, vol. 4, no. 4, pp. 1019–1029, 2022, doi: 10.51519/journalisi.v4i4.394.

[26] B. M. H. Kilis, J. Mamonto, H. Legesan, and Z. Sagai, "Usability Evaluation of The Android Operating System Using Use Questionnaire," *International Journal of Information Technology and Education*, vol. 1, no. 2, pp. 16–23, 2022, doi: 10.62711/ijite.v1i2.34.