Final Project Report - SSW564

Project: BOOK YOUR ARTIST

Team Members:
1. Nikhil Kumar G
2. Raj Palival
3. Femi Fagbewesa
4. Michael Moreno
5. Darshan Bhanushali

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BOOK YOUR ARTIST

1. Mission Statement:

Our mission is to create a secure, user-friendly, and cost-efficient ticketing platform that enables artists and their fans to connect, interact, and transact directly. We strive to provide a decentralized ticketing solution that eliminates middlemen, reduces costs, and ultimately allows artists to capture more value from their live performances. We believe that this platform will help create a more equitable and vibrant ecosystem that encourages and empowers artists, while providing fans with a better and more secure experience.

2. Key Stakeholders:

Book Your Artist has 4 major stakeholders: **Artists**, **Fans**, **Developers**, and **Decentralized Networks**. The artists are the primary users of the application as they will be responsible for posting, and managing their events, as well as promoting them. Fans are the secondary users of the application since they will be purchasing and supporting the artists' events. Developers are the ones responsible for not only building but maintaining the application to make sure everything goes smoothly. Decentralized Networks are where the application will be run. There are a multitude of blockchains available, the most popular being Ethereum.

3. Key Drivers:

Book Your Artist was made to empower artists to have full control over their ticketing process and to maintain full 100% transparency with their fans. Our decentralized application would offer these main benefits:

1. **Allowing artists to be more profitable for event bookings**
2. **Maintaining complete transparency with their fans**
3. **No duplicate/fake tickets, data privacy**
4. **Preventing resellers and scalpers from bulk buying**

By utilizing a decentralized solution, the ticket application can ensure that each ticket is unique and traceable, and tickets cannot be duplicated or counterfeited. This would ensure that tickets are legitimate and that buyers are not overpaying for them. It would also prevent scalpers from bulk buying tickets and reselling them at higher prices. Additionally, the blockchain ledger would provide a transparent, publicly visible record of all transactions, ensuring that artists and fans have an accurate view of the tickets available and that they can see how much money was generated from all sales. The increased transparency and security provided by blockchain would also increase data privacy for both the artists and fans. For the artists, the tickets could be sold directly from the blockchain ledger, eliminating the need for third-party ticketing companies that take a large commission for each sale. This would help artists to keep more of their profits. For fans, our application would provide a more secure method for buying tickets, as their personal and payment information would be protected.

Overall, our decentralized application can provide a secure, transparent, and private way for both artists and fans to transact tickets. It can ensure that tickets are legitimate and not duplicated, preventing scalpers from bulk buying and price gouging. It can also provide a transparent record of transactions, giving artists and fans an accurate view of the tickets available. Finally, it can increase data privacy for

both artists and fans, as their personal and payment information will be secure. All of these benefits would help to create a more fair and secure ticketing system.

4. Key Constraints:

While Book Your Artist aims to benefit artists and their supporters, there are key constraints that can potentially hinder the expansion of our services. These key constraints include:

1**. Lack of domain knowledge**

2**. Platform can potentially be cumbersome to maintain**

3**. Transactions can potentially be slow**

4**. Creating quality user experience**

We believe the most important one is domain knowledge. Blockchain and cryptocurrency are emerging technologies, and they would require experts in the field which are not only expensive but hard to come by. In addition, many users may not have a good understanding of how blockchain technology works, which could lead to them being reluctant to use the application. This could be solved by providing educational resources on the application itself or by partnering with established organizations that are already knowledgeable in the industry. The rest of the key constraints mostly have to deal with the barrier to entry.

Wallet Activations: If users are unable to set up their wallets and access the application, they may be deterred from using it and instead opt for a more familiar platform. This could be mitigated by providing guidance on how to set up wallets and providing support for users that may be struggling.

Slower Transactions: If the transactions are too slow, users may not be able to purchase tickets in time and may opt for an alternative. This could be improved by using zkRollups which would not only reduce the gas fees for all purchases made on the Ethereum network but increase the rate of speed of how many transactions can be done.

5. Key Requirements:

1. User Requirements:

1. No markup fees or intermediary charges involved; the price of the ticket is all that the customer must pay to attend an event.

2. The artist receives the whole price of the ticket that the customers are paying.

3. International customers don't have to pay a currency conversion rate when booking; In fact, there won't be any currency conversion taking place.

4. During checkout, there will be an option open to limited customers to sign up for a meet and greet with the artist after the show. This option will be based on bidding. So, the highest 25 bids will earn the spot to meet their artists in – person. The artists can take advantage of this feature.

5. The tickets can freely be transferred to another person once purchased if the customer feels the need to do so.

2. Business Requirements:

1. All transactions on this website are carried out by using our own cryptocurrency.

2. Creating our own non-fungible tokens (NFTs) for each venue which the vendors can buy and use to represent and sell their venues for each concert.

3. The customers will be rewarded with one free concert to redeem at any given time if they successfully manage to sign up for at least 50 events in a year.

4. The customers will have an option to purchase from a variety of 'Book Your Artist' digital bracelets which will expedite the check-in process for any concert and can be customized for participating artists.

5. Meet and greet proceeds will be split 60/40 with the artist to generate revenue.

3. System Requirements:

1. Any device with sufficient hardware and reliable internet connectivity for checkout process.

2. Smartphone with internet connectivity or Digital bracelet for event check-in.

3. A network of blockchain developers who will work as validators to approve the transactions for our website.

4. A pooling functionality such as "Staking Pool" for anyone who is unable to stake a total of 32ETH to become the validator on the blockchain network and approve our crypto transactions.

5. High energy that is consumed by the computers around the world for the "proof of stake" process and mining new blocks.

4. Security Requirements:

1. The use of blockchain technology shall provide a secure platform for all the transactions carried out on the website by adhering to The Blockchain Originated Certificate of Authenticity (BOCA) like SSL.

2. The website shall have a robust vulnerability management process by deploying new patches every single day to fix security bugs and unload unnecessary data from the system.

3. The website shall avoid hosting any kind of third-party content on its webpage and the ones which are required shall be always maintained in their stable available version.

4. The website shall encrypt all user information using TLS and abide by GDPR and CCPA regulatory bodies.

5. The website shall never store any user's full name and phone number but instead hash it using SHA-256 encryption and store it as a form of User ID which will be encoded in the ticket and the digital bracelet purchased. The website shall have a missing bracelet option to report the loss of the bracelet and immediately block the bracelet from further use.

5. Quality Requirements:

1. The end website shall arrange the images and other non-text elements appropriately, to prevent distractions and display a short timelapse glimpse of the concert video of less than 3 seconds.

2. The website shall allow users to print or download their ticket such that the printed ticket or downloaded ticket has the key information of the event along with unique ticket ID fixed in place and properly aligned to fit the page and easily scannable at the event location.

3. The website shall announce and alert the latest updates of a booked event in real-time such as change of venue, show cancellation, and provide an updated ticket to download within 5 minutes of such announcement.

4. The website shall load and present the live events around the user's locality results in less than or equal to 1 second.

5. The website shall provide fast-track booking in which the user can book the artist event in 2 clicks, first click – find the artist and second click – book the latest event/concert of the artist.

6. Requirement Elicitation Process:

List of Elicitation Process Implemented:

1. **Survey**: A survey was conducted on users who often go to concerts and seeking feedback from them on the things they would like to change about the whole purchasing ticket experience.

2. **Brainstorming**: Rapid ideation methodology of brainstorming was used to come up with multiple business ideas.

3. **Domain Analysis**: Blockchain based applications were studied and analyzed to understand the current market of decentralized apps, the benefits, and the limitations it imposes on the system.

4. **Goal Based Approach**: Our goal was to get rid of the middleman in the ticket booking process and their associated fees, which led us to use blockchain technology and which in-turn satisfied our security requirements as well.

5. **Introspection**: When the team introspected as to what would we need if we were the users who are booking the tickets for concerts and came to realization that the process of booking the tickets should be very minimalistic and as fast as possible without any other 3rd party distractions on the website and get a confirmation of the tickets purchased.

During our requirements elicitation phase, we wanted to make sure that we incorporated a variety of methods to gain experience with them and make sure we were not tunnel visioned while developing our requirements. We implemented elicitation methods ranging from brainstorming to domain analysis and goal-based approach as a few examples. Experimenting with different methods for requirements elicitation gave us valuable insights and forced us to constantly shift our way of thinking, not allowing our thought process to stagnate.

7. Requirements Validation & Analysis:

To make sure that we correctly divert resources into the key requirements we have elicited, we opted to invite domain experts and gather their feedback and suggestions as a form of requirements inspection. We invited domain experts of various backgrounds to collect their feedback as a user and their professional opinion as domain experts. We took the feedback that was received and after a few tweaks, we arrived at our final list of requirements that we believe is complete**.**
We conducted a quick survey among a group of users which includes students and friends, where we asked few questions, and we got few responses. Below are screenshots which shows some facts based on the response we received.

How frequently do you book tickets through online
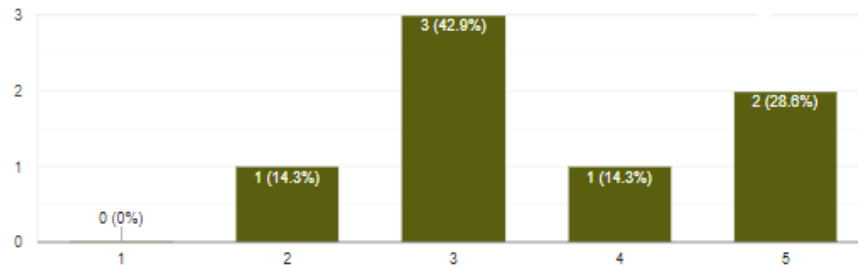
In the above chart you can see that at least 43% of users prefer to book tickets online as   compared to on-site booking.

8. User Feedback:

1. **Nayanika (Data Science student)**:" Nice to hear that artists don't have to deal or negotiate with multiple middle parties."
2. **Mainak (UI/UX developer)**: "Glad to hear about the elimination of intermediary charges! Make sure that the UI has a minimalistic design"
3. **Sandra (Business Analyst)**: "Great idea that makes concerts for the fans again!"
4. **Kevin (Software Developer)**: "Good idea with great technology, hope you will expand Web 3.0."
5. **Ankit (Cloud Security Manager)**: "You have chosen good & secured technology, make sure to explore more about it."