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Cryptravel

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Abstract - *The use of technology in tourism has revolutionized this industry. But, in traditional E-tourism, as the use of online payments has increased, it has become easier for fraudsters and hackers to perform malicious activities like stealing credit card information, wallet hacking. Moreover, unscalable centralized servers are prone to failure during traffic spikes, DoS attacks. To deal with the above mentioned challenges, we put forward a framework to use the distributed, decentralized, transparent technology of blockchain in the tourism industry called Cryptravel. Elimination of third parties also eliminates any hidden charges. To make traveling safe, it has become necessary to track down a tourist in case of emergency. The whereabouts of the tourist will be kept confidential taking into consideration the privacy concerns. From booking till the completion of the trip, Cryptravel promises to provide a delightful and hassle-free experience. The use of technology in tourism has revolutionized this industry. But, in traditional E-tourism, as the use of online payments has increased, it has become easier for fraudsters and hackers to perform malicious activities like stealing credit card information, wallet hacking. Moreover, unscalable centralized servers are prone to failure during traffic spikes, DoS attacks. To deal with the above mentioned challenges, we put forward a framework to use the distributed, decentralized, transparent technology of blockchain in the tourism industry called Cryptravel. Elimination of third parties also eliminates any hidden charges. To make traveling safe, it has become necessary to track down a tourist in case of emergency. The whereabouts of the tourist will be kept confidential taking into consideration the privacy concerns. From booking till the completion of the trip, Cryptravel promises to provide a delightful and hassle-free experience.*

***Key Words*: Blockchain, cryptocurrency, e-tourism, tourism, tracking.**

1.INTRODUCTION

Technology in tourism has helped in making the industry customer centric. From planning the trip to booking hotels, booking tickets, everything has become very convenient due to technology. Tourism is the backbone for economies of many countries, a generator of full time jobs for locals. Globally, there were 1.5 billion international tourist arrivals in 2019. The World Travel and Tourism Council calculated that ₹16.91 lakh crore (US$240 billion) or 9.2% of India's GDP in 2018 was generated by tourism and supported 42.673 million jobs, 8.1% of its total employment. By 2028, it is predicted that the sector would grow to ₹32.05 lakh crore (US$450 billion) and contribute to 9.9% of GDP. Moreover, the pandemic has done no good to all the travel enthusiasts and it has affected the economies to great extent, negatively. So cashless travelling is not a choice anymore, it has become a necessity. Since customer satisfaction and security are at the core of this industry, there's a dire need to make the E-tourism industry transparent and secure. Blockchain is an emerging technology and it has a lot to offer in the E-commerce industry. Against the limited scalability and low security of the centralized systems used in traditional E commerce, blockchain has a strong stand with its decentralized, distributed and immutable nature. Smart contracts, which act as computer programs capable of automating certain tasks based on pre-set rules implemented in the blockchain, to ensure the pre-set rules in the contract are not violated by any party. Elimination of third parties due to blockchain can also eliminate the problems like fake agencies and hidden or extra charges.

So, in this paper, we propose a solution to design an E tourism web application integrated with blockchain, which uses a common digital currency to perform all the payments and store the financial data. In this application users can explore a plethora of options for packages, book them, and exchange their native currency with the cryptocurrency. And while on a trip, can scan the QR codes provided to them to know their location and to see the places to be visited next, which will also help us to track down the user in case of any emergency, also contact tracing will become easier, which is necessary during these times of pandemic.

1.1 How Blockchain is helping us to solve the stated problem

1.1.1 No need for Currency Exchange.

Cryptocurrency can be used to eliminate the problem of currency exchange and left over currency. The digital coins that will be used will make it pretty simple for the tourist to go about the entire trip with the necessary amount in the digital wallet and not worry about carrying the hard cash around. If a user has leftover crypto currency, then he/she has the provision for getting the equivalent native currency back at the end of the trip.

1.1.2 Tracking Location of Users

In case of any emergency, E-Tourism can be proved effective by tracking the location of the user. It can be used to keep track of the whereabouts of the user. Users can also see the upcoming places to be visited using this feature of Cryptravel.

1.1.3 Private and Secured

In the case of travel booking tickets and hotels for a user, it has to send the information to the different firms. With the help of Blockchain operation can be made more secure and transpicuous since the responsibility spreads information in such a way throughout the whole network.

1.1.4 Transparency

Blockchain provides the necessary encryption and control mechanisms, it brings transparency by storing information in such a way that each change transaction is being recorded.

1.1.5 Decentralized System

The decentralized nature means information cannot be manipulated or lost through accidental deletion, ensuring transactions are always traceable because in the travel industry many companies rely on the information being passed.

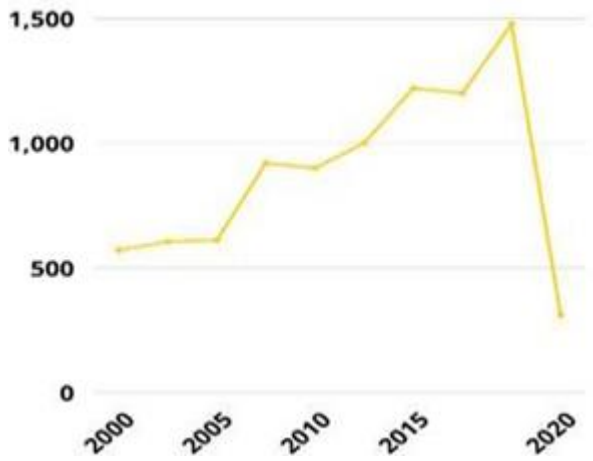

Fig -1 Effect of Covid-19 on Global Tourism Industry

2. LITERATURE SURVEY

Tourism isn't a new concept. There are a number of ways to explore or book a tour. But these systems cannot cope up with the customer's needs. Listed below are some of the traditional ways and some modern solutions proposed to solve the problems in the existing system

Manual booking system has as many disadvantages as advantages. Advantage of this system is that, when you book every single part of the trip on your own, you directly get to deal with the stakeholders, there is no third party. But since everything is manual, there is a lot of scope for human errors like data inconsistency. Moreover, if a traveler wishes to travel to some other state or country, for advanced reservations, they have to deal with unknown business associations, which cannot be trusted easily.

In paper [1], the authors Irem Onder, Horst Treiblmaier stated that there are many flaws in the existing E tourism industry like fake reviews, lack of trust, lack of transparency and states that blockchain and cryptocurrencies will certainly be able to solve aforementioned problems.

The blockchain will benefit the tourism industry in four aspects by enhancing tourist experience, making cross border remittances hassle free, overcoming physical banking limitations and lowering the operational costs by eliminating the commission fees. The possible challenges faced if blockchain is introduced, lack of awareness about blockchain and thus reluctance to adapt to it, also since blockchain is immutable, the transactions are irreversible, which means little mistakes may lead to huge problems. These are the ideas discussed in papers [7], [11].

A framework where users can register through a single unified cryptocurrency enabled application, known as BloHosT (Blockchain Enabled Smart Tourism and Hospitality Management) is proposed in [3]. Then, a smart contract layer is proposed, which executes various smart contracts to allow communication between the tourism stakeholders and the tourists. Once a transaction between stakeholders and users is accepted, it gets verified by miners based on Proof on Collaboration

The deep learning model, also known as TeDL service framework, stores the previous destination choices, mode of travel, season of travelling, mode of payment and many more such details in order to predict the next probable destinations of the traveler.

All the papers mentioned above discuss the drawbacks of the existing traditional E- tourism, and propose blockchain based solutions. Going a step further, we propose a solution to these problems taking into consideration the pandemic and the new normal to make the whole process cashless, and tracking tourists keeping in mind their privacy concerns, for contact tracing, which is needed for the hour.

3. METHODOLOGY EMPLOYED

3.1 User Flow (From Registration till Booking)

As shown in fig. 2, once the user registers on our website, a wallet is allotted to them. The users can login using their email and password. The users can be of two types: admin or customer. Customers on login can see various packages available and can see the itinerary of the package. If they like the package, customers can proceed to book it. While booking the package we check if there are enough trackos i.e. crypto currency for Cryptravel in customers e-wallet, if not we ask the customer to buy them, else we proceed to book the package and an equivalent amount of coins are deducted from customers wallet. Whereas admin can add, delete, update and see the packages. Also the admin can see the customers who have taken the packages which were put forth by him. Fig. 4 shows the whole process.

3.2 Buy Coins

In the process of buying coins Fig. 3, we first display the rate of exchange between trackos and the user's native currency. The user deposits the native currency and the equivalent amount of Trackos is transferred to the customer's e-wallet. And this marks an end to the process of buying coins.

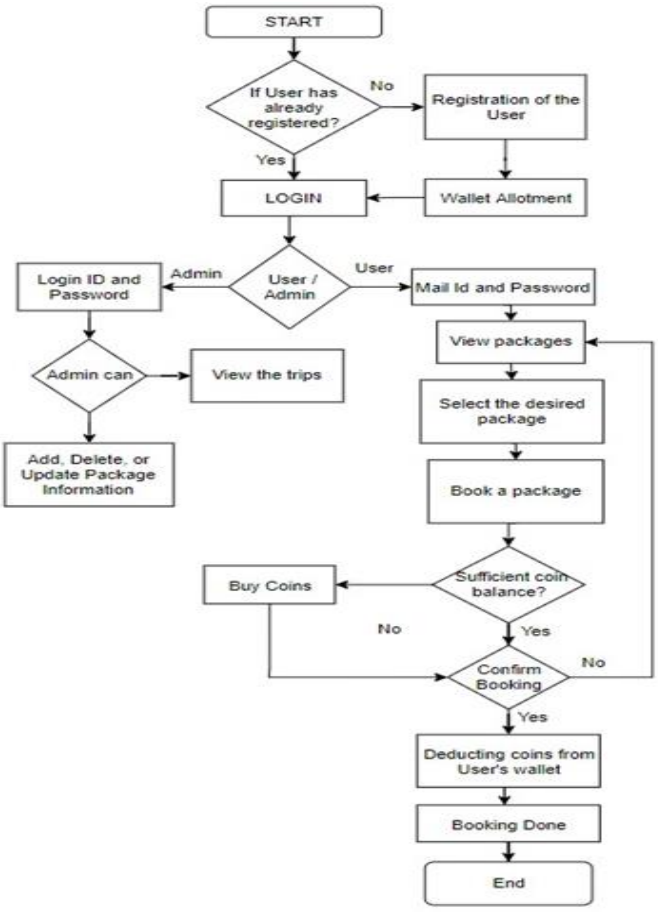

Fig- 2 User flow for booking

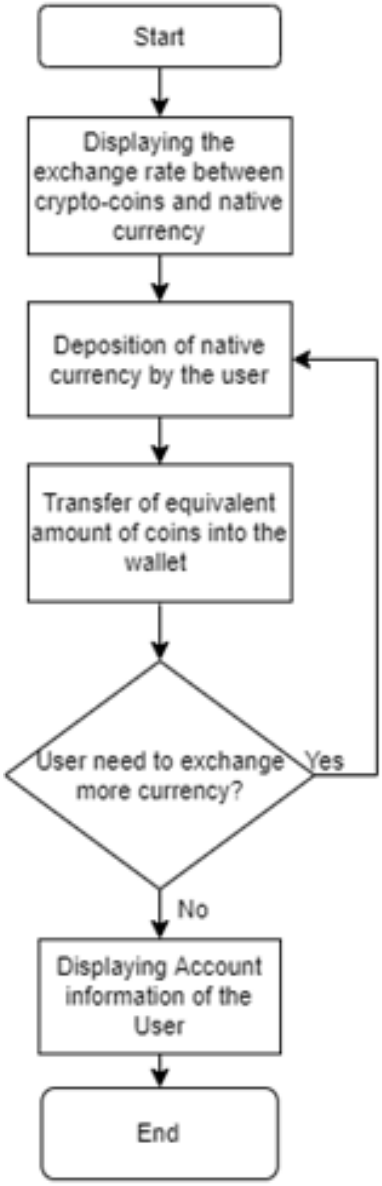

Fig- 3 Process of Buying Coins

3.3 Start of Journey

Fig. 4 shows the whole process of the user during the journey. When the user starts their journey, they can see the locations to be visited next. Upon reaching the place, the user has to scan QR code which will help us to track the user. After the trip has been completed, the user can transact the leftover trackos in their native currency. During the trip, users can also see their previous transactions, buy more coins.The user can also update their profile.

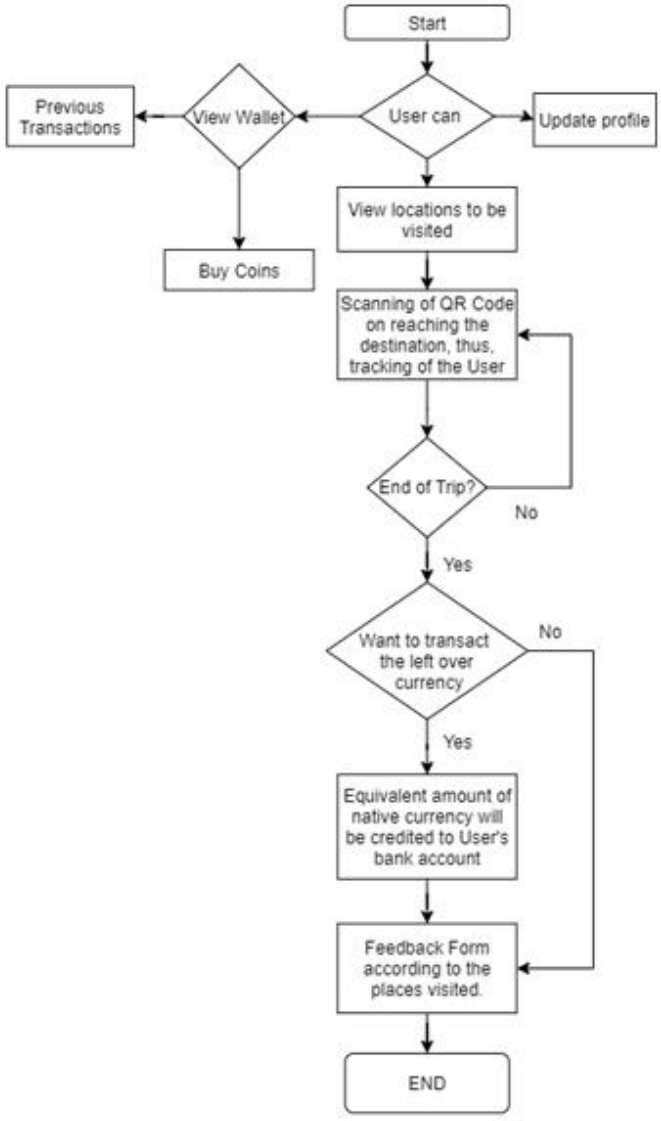

Fig- 4 User process from start of the journey

4. RESULTS

4.1 User Interface

4.1.1 Tracking

In this new normal, to acquaint the users with their whereabouts leads us one step closer to a safer travel experience. On our website, users are able to see the places to be visited during an ongoing trip. Users need to scan the QR code of that place so that we can keep a record of the whole trip, reach out to them in case of any emergency and also make users see previous as well as upcoming places.

Fig- 5 Tracking

4.1.2 Left Over Coins

The problem of leftover currency after completing the trip is solved by providing the users provision to transfer trackos back to their native currency.

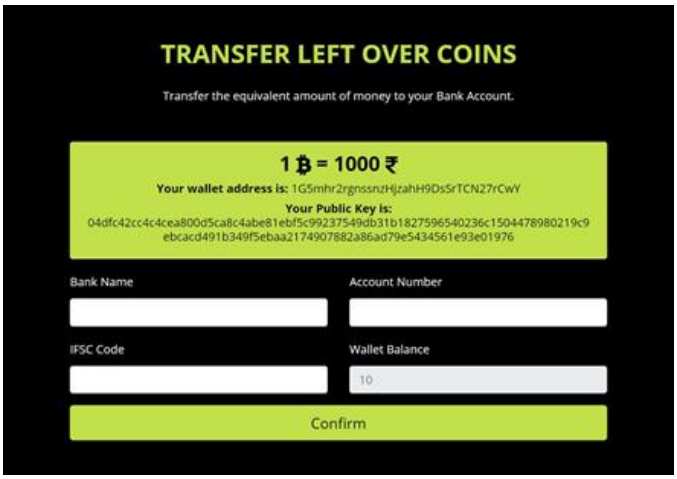

Fig- 6 Transfer Left Over Coins

5. CONCLUSION

It can be concluded that the web application will form a major part of everyday life of tourists looking for easy, secure travel experience and economies based on tourism looking for a platform to make the travelling experience more pleasing for tourists and to promote their growth. The application will provide tourists with a wide variety of options of travel, stay, mode of travel without having to worry about the currency exchange and security of their money. The tourism industry too, has a huge scope of improvement, as they will get to know what exactly the tourists prefer and expect from them, through their untampered reviews.

6. FUTURE SCOPE

The biggest issue faced by the users is handling important documents. With the help of a public distributed ledger, the complete details of travelers can be stored reliably and

all checkpoints like railway stations, airlines, etc can access those documents for user authentication. Thus, it will eliminate standing in long queues just for authentication and can save time and energy too. It can also be proved useful concerning fraudulent documents and fake identity. Using this feature, users can travel with relief without worrying about losing important documents as they are securely stored on an immutable ledger.

The overall experience of travelling along with E-Tourism can be improved with Decentralized Application i.e. DAPP. An application with all the required features and facilities for a hassle-free experience. The application can be installed on any device and can be used from the start of a trip till the end. It can be used for booking trips, wallet allotment and crypto currency exchange and tracking also. An application with all the desired features, improved security, better ease of access just a click away!

Depending on the travel history of users, if they are frequent users, they can be provided with Initial Coin Offerings (ICO) and various offers for their upcoming trips also.

A point of contact in case of any doubt regarding the whole travel process is needed, we will be providing chatbots for the same. If a user is unable to find the information they need on a travel website/app they'll close it and move to another source of information. But if they are in conversation with ChatBot they can either get details from the bot itself or get connected with a staff member who will answer their queries.

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