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Non-fungible token potentials for hotel bookings

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As many sports and music fans know, we countless times buy and sell tickets at the last moment, and every time we are amazed by the efficiency of this secondary market. However, unlike sports or concerts, there is no secondary market for the hotel industry. Since Airbnb emerged, online paid peer-to-peer accommodation is becoming prominent in the hospitality industry (Onder and Treiblmaier, 2018). However, the literature lacks Non-fungible Token (NFT) solutions and secondary market discussions. Therefore, this study discusses an NFT solution for booking and reselling hotel reservations.

NFTs are created using innovative contract technology, which allows contracts to be executed automatically. The transfers of these NFTs are carried out in intelligent contract blockchains, and every transaction is recorded in distributed ledgers to prove ownership since other people can check the transactions on the ledger. While money and cryptocurrencies are fungible since every 5 dollars is identical and used interchangeably, every unit of NFTs is unique. Therefore, they are non-fungible. Indeed, Regner et al. (2019) argue that NFTs can be an excellent alternative to second-hand ticketing services since their uniqueness can prevent fraudulent transactions in the secondary ticket market. According to Rasolroveicy and Fokaefs (2022), for NFT transaction fees, Polygon has been the most efficient network for the NFT marketplace. However, since the transaction fee for transferring an NFT is less than one dollar, most blockchains are suitable for NFT marketplaces.

Similarly, secondary NFT markets for the hospitality industry can be prominent examples of real-life NFT use cases. Hotels can sell their rooms as NFTs to customers while linking their services with transferrable ownership rights. Since NFTs can be bought and sold freely on the blockchain, the owner of the NFT could sell their right to stay in the room to another person in a free marketplace. The initial NFT owners may profit from these trades since the early-bird prices are usually more economical than the later calls.

The customers of hotel NFTs could have several purposes in mind in handling their hotel reservations. One straightforward reason could be to sell their reservation at the market price so they will not be subject to hotel reservation cancellation fees. Besides, people book in advance to benefit from lower hotel prices. If they cancel their reservation later, the customers cannot take advantage of the price increases over time. However, when the customers can transfer their hotel booking ownerships through the NFT, they may profit by buying in advance and selling in the secondary market. Hence, holiday planning may turn into a profitable business where the customers may also capitalize on the time spent searching for the best vacation options.

In advance, many customers may be unsure about their travel times and plans considering many conditions in planning a vacation in the future. Nevertheless, customers can book several options through the NFTs and sell some bookings when their plans become more specific. Considering that unobserved, potent demands of the customers are

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revealed in advance, hotels can also benefit by making their business plans accordingly. Besides, hotels do not need to refund and deal with such operations. Hence, they plan better and reduce their cost while transferring some of these reductions to the buyers with discounts. Therefore, it is a win-win situation for both agents.

This system is somewhat working in practice with the agency agreements. Tourism agencies book rooms with significant discounts and sell them later to their customers with premiums using asymmetric information (Tremblay, 1998). Hotel NFTs are vehicles to eliminate these intermediaries and reduce this mechanism to function even among individuals. Thus, free secondary markets may also be part of the solution to the ethical problems arising from information asymmetry in the hospitality industry.

Some anticipant entrepreneurs notice the potential in this area. Indeed, a luxury hotel in Venice sold one of its rooms as an NFT (VRetreats, 2021). Also, a hotel in the Dominican Republic signed an agreement with Pinktada and started selling its rooms as NFTs (Grant, 2022). Likewise, some startups, Crystabaya and Stayopen, established NFT marketplaces by working with hotels (Crystabaya, 2022; Stayopen, 2022). However, these can only be called baby steps since the hotel industry generates over $550B yearly.

Some drawbacks exist for the hotels already working close to the total capacity. The current system exploits the consumer surplus through time by charging different prices to customers depending on their urgency of booking the hotels. However, hotels operating in a more competitive market environment, like holiday resorts with similar characteristics, are expected to be more willing to use NFTs, considering that they cannot differentiate their prices from other hotels. Moreover, there is legal uncertainty in this area. Although owning NFTs does not legally embody the authority of the asset, there is also no law in most countries preventing the use of NFTs in hotels' business models, as we can see in the examples mentioned earlier. (Kulakova, 2022).

Overall, we discuss that NFTs may increase the efficiency of hotel bookings. We suggest that NFTs are even more revolutionary than cryptocurrencies since NFTs are attempting to solve a more fundamental problem of proving ownership and transferring ownership rights. Property rights are historically even older of a concern in the markets than the concerns about the central banks' interventions. NFTs have often affiliated with digital assets through digital art, gaming, and other digital collectables. However, the real potential of NFTs lies in linking the ownership of tangible assets, goods, and services with direct and secondary sales in the markets. This process is still loading, and with this draft, we attempt to contribute to NFTs revolutions by proposing Hotel NFTs that will open the hoteling business to the secondary market where all market participants, including the customers, can profit. The NFT ecosystem is reloading. Our NFTs solution will help the ongoing discussions on NFT usage in the tourism industry.

CRediT authorship contribution statement

Ahmet Faruk Aysan: Supervision, Conceptualization, Investigation, Project administration, Writing – original draft. **Ahmet Semih Tunali:** Investigation, Project administration, Writing – original draft. **Giray Gozgor:** Writing – original draft.

Declaration of Competing Interest

All authors disclose that no financial or personal relationships may be perceived as influencing our research.

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