Chapter 13
The Decentralization of Romanian Tourism Through Blockchain and Non-Fungible Tokens: A Case Study on Stramosi NFTs

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Abstract The tourism and hospitality sector urgently needs digital technologies that will lead to efficiency enhancement, lower costs, and greater transparency. Blockchain and NFTs can significantly benefit the tourism industry, leading to increased competitive advantage, improved customer satisfaction, and improved performance. This new technology has the ability to reform the tourism industry because they enable the decentralization of activities, eliminates mediators, and provides a trustworthy platform that connects tourists and companies. This paper aims to analyze the potential that NFTs and blockchain can have in revolutionizing the Romanian tourism industry. We consider the case of Stramosi, the first Romanian NFT project inspired by Romania's colorful mythology minted on MultiversX blockchain, a secure, scalable, and fast blockchain platform. We focus on the particularities of Romanian tourism, its current challenges, and how decentralization through blockchain and NFTs can boost Romanian tourism and set the track for a sustainable long-term tourism strategy. An in-depth analysis of the benefits and possible limitations of the technology has been carried out. The results of the analysis provide new insights into the potential of NFTs and blockchain technology in transforming the Romanian tourism and hospitality sector.

Keywords Blockchain · NFT · Romanian tourism · Decentralization · Smart contracts

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13.1 Introduction

Blockchain has become increasingly popular in the last years by finding practical applications not only in finance with the adoption of cryptocurrencies and Central Back Digital Currency (CBDC) but also in real estate, healthcare, and tourism. The vast majority of literature focuses on the benefits related to "trustless networks" (Christidis & Devetsikiotis, 2016) being secure, decentralized, disintermediated, and "democratic" (Valeri & Baggio, 2020c). The use of blockchain technology has a significant role in remodeling the industrial sector by altering not only the transaction system and data security but also the supply chain management. By the same token, blockchain technology is an integral component of industry 4.0, which aims to promote enhanced automation, data sharing, and advanced systems of manufacturing. Blockchain technology has been first introduced to the wider public by the release of the Bitcoin whitepaper (Nakamoto, 2008). Since then, blockchain has been credited for revolutionizing peer-to-peer transactions through the use of a decentralized and immutable ledger. This is made possible by eliminating the need to rely on a central authority for transaction management. For these reasons, blockchain technology ensures a high degree of functionality and security because parties involved in a transaction can exchange without the need of trusting each other.

Although it is a fairly new technology, global investments in this field are rising considerably. The American market is the leader when it comes to investment in blockchain solutions followed by its European counterpart. Capgemini states in a report that in 2017, about 400 million dollars were invested in blockchain even if only 3% of European companies were willing to invest in the technology (Capgemini, 2018). The report also states that in 2018 there were four blockchain start-ups in Italy that raised together through Initial Coin Offering (ICO) more than 70 million euros. In the region of Asia Pacific, China considers blockchain technology as a pillar of its economy, and more than half of the Chinese companies have reported that they are or are considering developing a blockchain strategy (Cognizant, 2017).

13.2 Literature Review

13.2.1 What Is Blockchain Technology, NFTs, and Smart Contracts?

Blockchain technology can be defined as a digital, decentralized, and distributed ledger. Within this system, each transaction is recorded and stored in a sequential fashion with the purpose of creating a list of transactions that cannot be altered (Treiblmaier, 2018). Not only does this suggest that transactions cannot be undone in the event of an error, but it also indicates that anybody, at any point in time, is able to view all of the information that is associated with a particular transaction. In practice, blockchain technology relies on a distributed network of nodes that are

interconnected. This ledger is constructed using a sequence of block that are connected to one another in the form of a chronological chain. The data included in each block are used, along with the hash of the block that came before it, to form a one-of-a-kind identifier that is called a hash. This linking results in the creation of an unbroken chain of blocks, which protects the information's authenticity and ensures that it cannot be altered. Because it is decentralized by nature, blockchain technology and cryptographic algorithms provide trust and security among participants, making it harder for hostile actors to tamper with the data that has been saved.

Blockchain technology allows for the creation of non-fungible tokens (NFTs), which are unique digital assets that allow establishing the origin of the assigned digital object, offering indisputable answers to questions such as who owns the object and who previously owned or created the digital asset. This type of token can be used on platforms that offer digital collectibles, videos, lottery tickets, and numbered seats for concerts or sports matches. An NFT minted on the blockchain acts as a birth certificate for that specific digital object, and it cannot be exchanged with another individual's birth certificate as it is unique and different from all other tokens minted. At any given time, the NFT is owned by a single owner, and its ownership is secured by a specific blockchain, which guarantees that no one can modify the records of ownership, trade transactions, or minting an identical NFT by using the copy/paste method.

Along with NFTs, blockchain technology also allows for the creation of smart contracts. These are pre-programmed agreements or protocols that can carry out their terms automatically. They eliminate the need for middlemen and save time and money by facilitating, verifying, and enforcing the negotiation and fulfilment of contracts (Christidis & Devetsikiotis, 2016). In practice, the smart contract will automatically be implemented, and the activities that are linked with it will be carried out when the preset criteria that are mentioned in the contract are satisfied. For instance, a smart contract may be configured to automatically transfer cash from one party to another when particular criteria, like as the delivery of products or the fulfilment of a service, are satisfied. Smart contracts have a high degree of security because all participants can be certain of the outcome without an intermediary being involved. To ensure the security of the digital asset, a computer program is being developed that follows a specific script and therefore cannot be controlled by any user. The decisions will be made solely by the computer program ensuring a high degree of predictability and trust among users.

On their end, smart contracts allow for the creation of decentralized autonomous organizations (DAOs), which is managed by a set of predetermined rules that are inscribed on a blockchain. It conducts its business through the use of smart contracts, and its main objective is to operate independently, without the need for centralized control or middlemen. A DAO is not influenced by a central government or a board of directors and is rather a member-owned community without any centralized leadership. The decision-making process is done by the members owning the token on which the DAO has been created and ownership of the DAO can be done through cryptocurrency or NFTs.

Blockchain technology can find its application in a wide range of sectors. In the healthcare industry, companies like HealthNautica or the government of Estonia are willing to invest in developing a health database based on blockchain technology. Blockchain technology is not limited to just cryptocurrencies or the health industry, but it can also be used to track the flow of electrons on a distributed grid (Lacey, 2016) or in the real estate market by allowing for more security and auditing of the sales process. Additionally, blockchain technology could prove the authenticity of the sale and homeowners can legitimately transfer ownership without a third party being involved in the process (Oparah, 2016). The academic literature also focuses on the role of blockchain technology in the public sector. Ølnes (2016) documents the process of storing on the Bitcoin blockchain, the academic certificates of students who completed modules on digital currencies. Blockchain technology can also be implemented in the tourism sector and has the potential to change business models in tourism (Aghaei et al., 2021). On the other spectrum, NFTs have been used as a method of preserving cultural heritage based on blockchain technology. Heirloom, a system that uses blockchain technology and a distributed file system, has been created with the aim of protecting and promoting cultural heritage. Using smart contracts and transforming cultural assets into NFTs, foundations can receive funds more easily and transparently on the blockchains (Erturk et al., 2021). Additionally, NFTs have been found to support sustainable development actions by financing the tokenization of wildlife digital assets (Mofokeng & Matima, 2018). Moreover, NFTs have been used in the tokenization of ticketing, preventing fraud, and improving control on secondary market transactions (Regner et al., 2019).

The goal of this paper is to provide a comprehensive description of how blockchain and NFT's work and how this technology can redefine Romanian tourism on the national and international levels. The analysis of the Stramosi NFT project and its implications for Romanian tourism reveals a comprehensive understanding of the opportunities and risks associated with this innovative solution. The analysis takes a holistic approach and tries to shed some light on the potential effects of the project as well as the obstacles it faces. It goes beyond a surface-level examination and delves into a variety of aspects such as the promotion of cultural heritage, decentralized tourist planning, and financial support for local companies. The study gives a thorough knowledge of how the project may shape Romanian tourism and create sustainable growth by examining the relationships between these areas and providing a full understanding of how the project can shape Romanian tourism. This is in fact one of the main contribution of this research. The analysis and discussions offer stakeholders in the tourism sector in Romania significant information, assisting them in understanding the unique opportunities provided by blockchain technology, smart contracts, and NFTs. Nevertheless, it also offers insights on the dangers that the project brings and what could be the main limitations to overcome. The analysis is a significant resource for stakeholders, scholars, and enthusiasts interested in the convergence of blockchain, NFTs, and tourism. It is so more interesting for the Romanian academia and policymakers as it provides possible directions to solve real problems that apply to the so-forgotten Romanian tourism. Section 13.2

offers a high-level view of Romanian tourism and how it has evolved after the fall of communism. Section 13.3 briefly details the research methodology employed, while Sect. 13.4 presents the first NFT Romanian project Stramosi, its main characteristics, ecosystem, and application to real problems faced by the tourism and hospitality sector. We then draw on Sect. 13.5 on the benefits and limitations of implementing this technology. Section 13.6 concludes with the general ideas and limitations of the study.

13.2.2 Current State of Romanian Tourism: Progress, Challenges, and Opportunities

Tourism has the power to create a specific cultural dimension and promote values that are in line with the heritage, historical and cultural background of a specific nation. By this token, Romanian identity has profound roots in the socialist period starting 1960 when the state needed hard currency to fund imports. During that period, Romanian tourism has received much attention due to the Dracula story written by Bram Stocker. Regardless of its increased popularity in the West, Romanian authorities were not so keen at the beginning on associating a vampire with the figure of Vlad the Impaler, a heroic leader that is known to the Romanian people for his courage in fighting to keep the independence of Transylvania. This was more stringent, as opponents of Ceausescu and western journalists started applying the label "Dracula" to the president himself due to the increased austerity in the country in the late 1980s.

Following the collapse of communism in December 1989, Romania embarked on a journey that would bring important reforms to the economic and political sphere. After the tyranny of Ceausescu, Romania had to project another identity that would come closer to European values and that would demonstrate and legitimize their ascension to the European Union. The tourism sector started developing under the umbrella of new private sector businesses that would adopt "Dracula" as a trademark around the Bran Castel. On the other side, the position of the national authorities and other historians remained reluctant to promote Dracula tourism, rather focusing on other forms of tourism based on Romanian heritage, culture, and rural traditions. The emphasis was put on the Roman origins of Romanians and their Latin temperament as the national authorities wanted to present Romania as a European country with close ties with their Latin "cousins" (the French, Italian, Spanish, and Portuguese all members of the EU at that time). There were also repeated efforts of the national authorities to draw parallels between Bucharest and Paris due to the French influence on Bucharest. Apart from the rebranding of Dracula and the Latin roots promoted by the national government, cultural and rural traditions from various regions in Romania have also been taken into consideration as potential drivers to increase the country's tourism.

Despite these efforts from the national authorities in charge of developing a new image of post-communist Romania, tourism declined significantly in the years after the revolution. In particular, domestic tourism has declined due to various processes of restructuring and subsequent rounds of price liberalizations that generated high inflation and unemployment rate (Light & Dumbraveanu, 1999). This is also due to the fact that Romania's successive post-communist governments have not considered tourism a priority, despite the order No.58/1998 on the organization and development of tourism activity in Romania considered to be a "priority field of the national economy." There has been a recovery in the period between 2002 and 2008, but the tourism sector still had to deal with inconsistent strategies of development at the local and national level, poor human resource training, lack of investment, and the general economic development of the country (Surugiu & Surugiu, 2013). Despite the unfortunate results of the public sector, there has been a steady increase in private companies focusing on tourism. Ascension of hotels, tourist agency activities, and a few seaside and mountain resorts (Grecu et al., 2019) are to name a few. In the last years, the national government has issued a set of directions to promote the development of ecotourism in areas where nature and local culture represent the core of the way of living of local communities.

13.3 Research Methodology

The research methodology utilized in this study is qualitative in nature, and it involves a case study analysis of the implementation of blockchain, smart contracts, and NFTs in the Romanian tourism sector. The selected project, Stramosi, showcases 10,000 digital collectibles that are inspired from Romanian folklore and embedded within the innovative technology of blockchain and smart contracts. The main objective of the exploratory study is to ascertain the potential benefits and challenges associated with the implementation of the Stramosi project in the tourism industry in Romania. The research methodology is qualitative in nature as it involves a comprehensive analysis of the benefits of blockchain technology, smart contracts, and NFTs can have in the context of the Romanian tourism industry. Additionally, we focus on the drawbacks and limitations that the project can entail that could jeopardize the decentralization of Romanian tourism.

13.4 Results and Discussions

13.4.1 Case Study: Stramosi NFTs

The project Stramosi is the first 10 k NFT collection of unique characters that were inspired by Romania's colorful culture and mythology. The non-fungible tokens are issued on the MultiversX (formerly known as Elrond), a blockchain that offers

secure, fast, and scalable solutions for decentralized applications (dApps).The uniqueness of this project stems from the fact that it was created by combining the hundreds of particular traits of various Romanian personalities, such as the hair of Mihai Eminescu, a famous Romanian writer, the ears of George Enescu, the famous Romanian composer and violinist, the face of Constantin Notara, a famous Romanian theater artist, and other famous Romanian cultural personalities.

The NFTs can be used as avatars on different social platforms, and users can own and store their NFTs in the MultiversX wallet. Each NFT is unique and has different characteristics. Figure 13.1 displays the interface a user sees when purchasing an

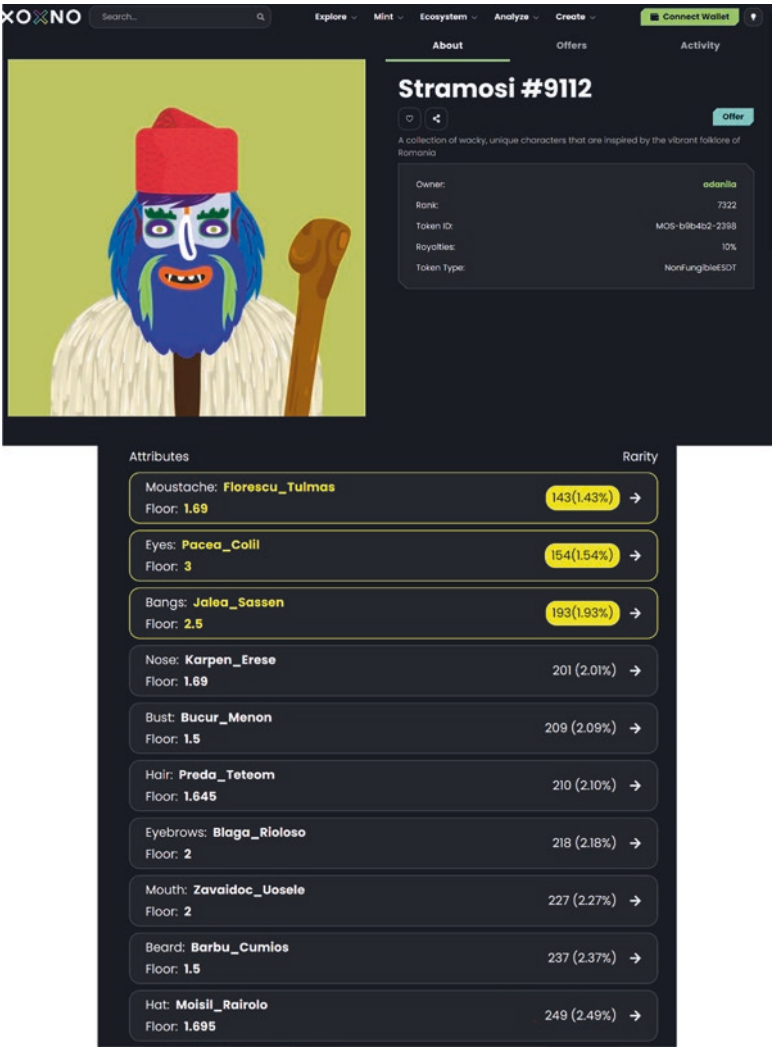

Fig. 13.1 NFT characteristics of Stramosi #9112 as it appears on the MultiverX market. (Source: From xoxno shorten using bit.ly. http://bit.ly/3UQlUHf)

NFT through xoxno, the open decentralized marketplace on the MultiversX blockchain. At any given moment in time, any user can know when the NFT was minted, its special attributes, its owner, its asking price, or how many owners the NFT had in the past (Fig. 13.1).

At the time of writing, according to xoxno, the public marketplace on MultiversX blockchain, there are 3887 holders of Stramosi with 771 being listed on the market of xoxno for sale, and only 24 are staked to be able to receive perks and benefits from other collaborations inside the project (Fig. 13.2). The team also owns a few hundred NFTs but is difficult to link the wallets to each member of the team as there is no digital wallet assigned to the entire team. At first sight, this might be considered a potential risk to the project, but it rather makes a strong point against the centralization of assets in a single entity. By splitting the assets between all team members of the project, each individual has the incentive to deliver according to the roadmap and wants the project to succeed. If the project is unsuccessful, then all the 10K assets including theirs go to zero. This is in fact one of the strongest points for the use of blockchain technology and smart contracts as it ensures trust and security among users.

The minting of Stramosi started in November 2021, and for each NFT, the user had to pay 1 EGLD, which is the native digital currency of the MultiversX blockchain. All resources earned by the team will be donated to the @Romania NGO based in Bucharest. The main purpose of the NGO, as stated by the team, is to become a self-sustained AI-driven tourism DAO that will revolutionize and decentralize Romanian tourism by connecting travelers, businesses, and local communities without the need for a third party. Every user that owns at least one Stramosi NFT will be able to participate in the decision-making process of all tourism promotion plans developed by the NGO @Romania and will be able to vote on future directions of the project. At the time of writing, the white paper of the DAO and smart contract specifications are not yet published to the public. The team in charge of the project has announced multi-annual partnerships with UNTOLD Festival, BRANDMINDS, and local authorities at the national level to boost the visibility and adoption of NFTs. Moreover, the project is willing to support charitable initiatives like Broken Toys—a start-up backed up by the MultiversX community. Additionally, the project aims to develop AI platform modules like hotels, guesthouses, experiences, and breweries to support local tourism businesses and create strong access points for tourists all over the world.

At the time of writing, the team is constantly working in developing the IT architecture of the tourism blockchain-based platform. As blockchain technology is not yet mature, designing and implementing such a platform that can bring together tourists and small local businesses entail great challenges. As an intermediate step, the team has launched a new minimum viable product (MVP) to validate and test customer needs and expectations before developing the tourism platform (Fig. 13.3).

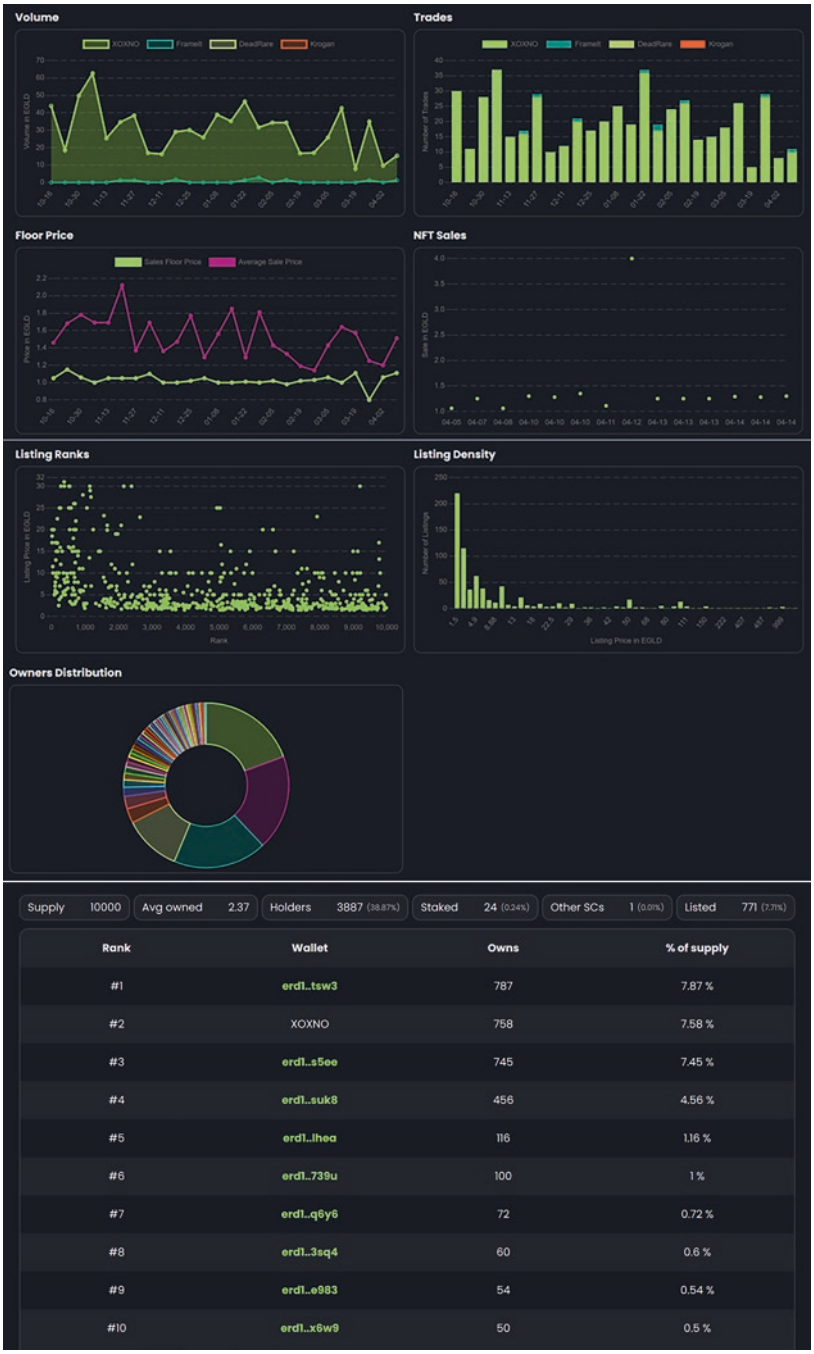

Fig. 13.2 NFT Analytics: volume, number of trades, evolution of floor price, sales during the period from October 2022 to April 2023, owner distribution in April 2023 and umber of holders of Stramosi displayed by their digital MultiversX wallet. (Source: From xoxno shorten using bit.ly. https://bit.ly/3RzUgLP)

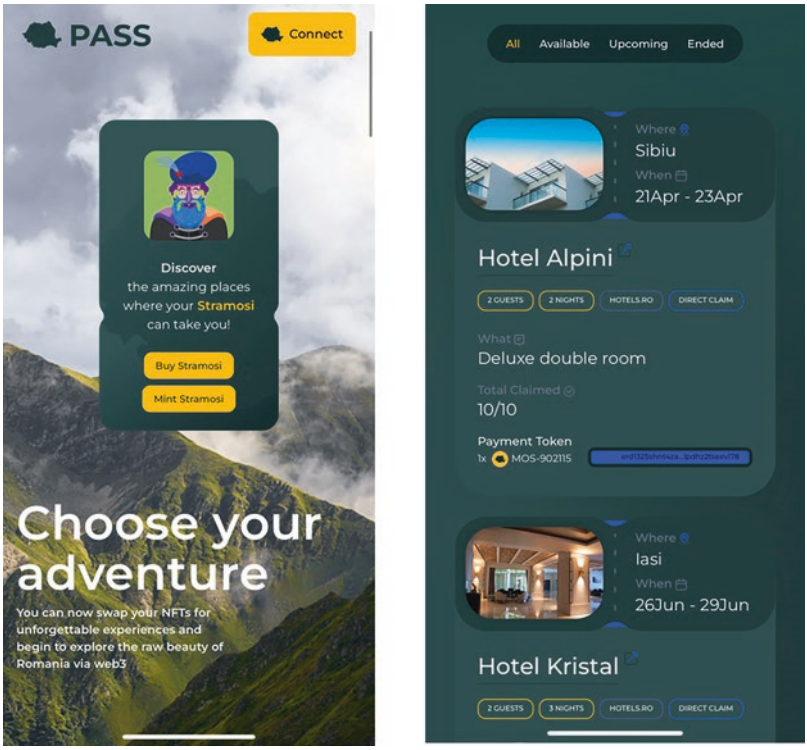

Fig. 13.3 Extract of the first page of RomaniaPASS from the development environment (not yet in production environment). (Source: Romania Pass)

13.4.2 Blockchain Technology Adoption in Tourism

The world is going through an era of profound transformations fueled by digitalization, constant improvements in information and communication technology, machine learning, robotics, and artificial intelligence (Syam & Sharma, 2018). Zurab Pololikashvili, Secretary-General of the United Nations Tourism Organization (UNWTO, 2018), emphasized the critical role that technology plays in helping to better manage social, cultural, and environmental impacts. The author notes that the efficient use of technological advances can act as an agent of positive change and can stimulate the sustainable management of tourism. Tourism, in particular, is an activity that has experienced many disruptions, under the pressures of information and communication technologies (Sahut & Hikkerova, 2009). According to Colombo and Baggio (2017), the tourism sector needs to combine technology, knowledge, and money to build new and innovative products that meet customer needs. For this reason, blockchain can be considered as the latest "disruptive technology" that has attracted the attention of researchers (Frizzo-Barker et al., 2020) that can have diverse applications in the field of tourism and hospitality industry.

There is a great number of research on the advantages of applying blockchain technology in tourism.

Our analysis focus on four main areas that showcase the benefits of blockchain technology in the decentralization of Romanian tourism.

Enhanced Cultural Promotion

The Stramosi NFT initiative is at the front of the movement to transform the tourist industry in Romania due to its innovative approach in addressing tourism promotion. With its one-of-a-kind collection of 10,000 NFT characters inspired by the vibrant culture and mythology of Romania, the project provides a portal for tourism to connect with the country's rich legacy in a way that is innovative and sustainable. Every single character in the NFT series is built by merging characteristics of well-known Romanian authors, musicians, painters, and other people from Romanian culture. The initiative not only recognizes and honors the accomplishments made by these individuals but also brings their personal narratives to life by focusing on the distinctive qualities that define them.

Currently, the Romanian tourist business relies heavily on the promotion and preservation of cultural heritage, which helps contribute to the distinctive character and attraction of certain locations across Romania, in particular those located in the Bucowina region. The Stramosi project stands out as a pioneering initiative in the field of Romanian tourism because it makes use of NFTs and blockchain technology. Stramosi is able to present the rich folklore, historical artifacts, and traditional crafts of Romania in the digital sphere by utilizing these cutting-edge techniques. As a result, they are able to communicate with a larger audience and if supported by the public and by government initiatives could lead to a long-term preservation of cultural heritage. As a result, this community-enforced initiative can act as a catalyst for increasing knowledge and appreciation of the cultural legacy of Romania among audiences both domestically and worldwide. The Stramosi project's digital preservation and transmission of Romanian folklore is an important contribution to the promotion of cultural heritage. In addition, the initiative gives local communities the ability to contribute their own cultural narratives and customs, so guaranteeing that the rich cultural legacy of Romania is not only conserved but also cherished and disseminated to the rest of the world. Local businesses find themselves on a common platform to promote their work, thanks to the issuing and trading of Stramosi NFTs, which contributes to the diversity and authenticity of the tourist experience. As this is a first-of-its-kind project, Stramosi can establish a new standard for how decentralization is being achieved through NFTs. By the same token, blockchain technology may revolutionize the way cultural heritage is valued, shared, and enjoyed within the tourism sector.

Blockchain-Powered Trust and Security

The use of blockchain technology has the potential to completely transform the travel and hospitality sector by delivering a trustworthy and open-access platform for a wide range of transactions, such as the purchase of tickets, the reservation of lodging, and the assembly of vacation packages. For Romanian tourism, blockchain technology implemented through the Stramosi project presents a number of

advantageous opportunities, including the removal of middlemen, a decrease in expenses, and an improvement in the level of trust between visitors, service providers, and other stakeholders. When it comes to the Stramosi initiative, the decentralized ledger system provided by blockchain technology makes it possible for visitors to interact directly with the business owners and local communities that are participating in the trade of Stramosi NFTs. This direct engagement removes the need for intermediaries such as travel or tourism agencies, hence decreasing expenses and guaranteeing that a greater amount of money earned from transactions goes directly to the providers of the tourism services (Fig. 13.4).

One of the main advantages that the blockchain will bring to the tourism industry is its unique identity. In a system where all parties share information securely, the traveler will have a unique ID from the time they book their trip until they return home and see the photos of their holidays (Dogru et al., 2018). In other words, the customer will not have to provide more personal data than is strictly necessary to prove his identity at any given time. Currently, Romania has not respected its obligations related to the digitalization of public services as stated by the European Commission. The eGovernment Benchmark from 2022 places Romania on the last place in EU when it comes to the delivery of digital public services. Romanians are still struggling with their national ID cards and burdensome paperwork at the local and national authorities. Implementing unique identification using blockchain

Fig. 13.4 Possible uses of blockchain in the Romanian tourism industry. (Source: Authors' elaboration)

technology would alleviate some of the burdens for businesses linked to monthly reporting to the central authorities on details regarding the visits received on their premises. It could also gather important data about the profile of tourists, their preferences, reviews, and complaints that could be the basis of a sustainable, long-term tourism national strategy.

Blockchain-based applications are recognized for their ability to facilitate transactions between parties involved without the need of a third party acting as an intermediary. This has been already implemented by Webjet (through Rezchain https://www.rezchain.com/) that runs an inventory of available hotel rooms on a version of Ethereum blockchain (Menze, 2021). TUI has also stepped into the blockchain domain with the purpose of managing its bed inventory Sistine, 2017). The Stramosi project guarantees that transaction records are safely preserved and openly accessible to all participants by making use of the distributed ledger technology. Because the ownership of Stramosi NFTs as well as their transaction history can be validated and tracked back on the blockchain, this transparency helps to develop confidence between visitors and the service providers that cater to their needs. Because of this openness, the dangers of fraud and counterfeiting are reduced, which helps to promote a marketplace that is more safe and dependable for the assets related to cultural property.

In addition, the Stramosi project makes use of smart contracts built on blockchain technology to automate and simplify transactions. This helps to ensure that procedures are carried out in a reliable and effective manner. This automation decreases the likelihood of mistakes being made by humans, keeps transaction expenses to a minimum, and quickens the pace of the transaction process overall. Along with the advantages already stated, tourism could benefit greatly from the blockchain (Hassi, 2019), mainly due to its strong dependence on any form of information and communication technology. In fact, several elements, such as the externalities of the network, the technical difficulty, the consistency, the testability, or the perceived requirements of the relevant advantages may affect the possibility of successfully adopting these technologies (Valeri & Baggio, 2020c). The Romanian tourism sector in its current system is characterized by a fragmented business nature, with a large number of contracts and transactions between several actors, often leading to more security issues, disputes between parties, delays, and high costs (Irannezhad & Mahadevan, 2020). The introduction of smart contracts can help to reduce this. Its purpose, in fact, is to meet the consumer directly with service providers by removing the intermediary from the tourism market, thus reducing costs, improving efficiency, and accelerating the demand for services by travelers (Karagoz Zeren & Demirel, 2020). Usually, in the traditional tourism industry, the intermediary has a fundamental role as it offers a service to customers and producers consisting of reservations and payments for plane tickets and accommodation at a restaurant or hotel. For these services, the tour operator takes commissions. Thus, using cryptocurrency (i.e., EGLD) as a payment method and smart contract for business transactions or transactions between parties, travelers, and manufacturers can save additional fees associated with intermediary services (Fig. 13.5).

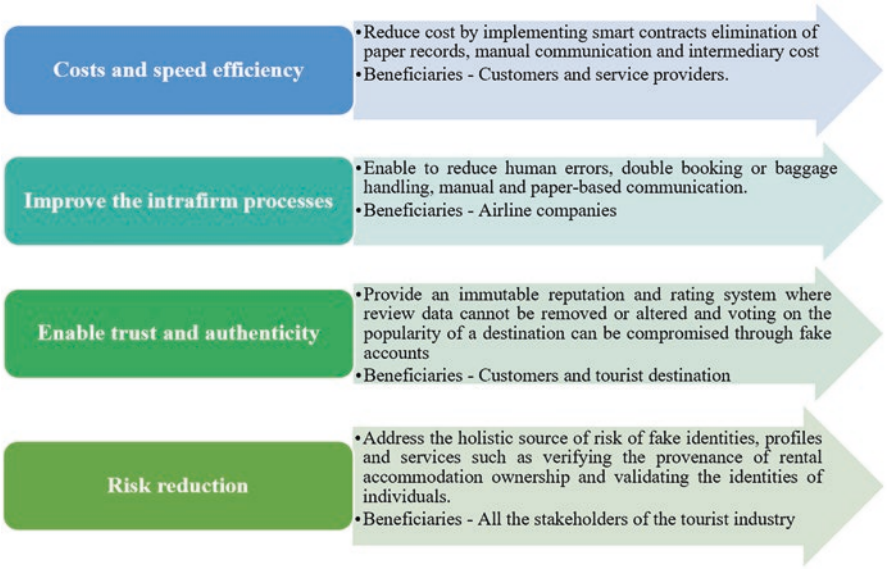

Fig. 13.5 Areas of intervention of blockchain and NFTs in the hospitality and tourism industry. (Source: Authors' elaboration from Irannezhad & Mahadevan, 2020)

Decentralized Tourism Planning

Blockchain can be applied in many areas of the tourism industry, offering lower costs and improving the overall customer experience. It can be used as reservations and tickets for hotels (Montali, 2017) and car rentals, insurance, and digital payment in cryptocurrency. It can also benefit not only the authentication assessment, ranking, and verification but also for inventory management having uses in managing the network of suppliers. It can also be beneficial in resolving disputes and setting up automatic payments in case of smart contract agreements. In addition, blockchain can enhance the loyalty programs of airline companies or hotel chains that prove to be burdensome in traditional settings due to a large number of variables to take into account when showing updated information to the client. From a marketing perspective, Stramosi, through its transparent and public data on the blockchain, can offer valuable insights into the unique requirements of various visitor groups. This increases the involvement of the community in the decision-making process. For instance, if owners of NFTs indicate an interest in a certain type of activity, the local businesses can adapt their services to satisfy these needs as they have full visibility of the data behind them. By this token, Romanian tourism can attract niche markets and differentiate itself from other destinations (Pilkington, 2018). Moreover, the decentralized nature of blockchain technology ensures increased resilience and flexibility to market conditions. As a community-based project, which is essentially driven by profit gains, the time to react and adjust to new market demands is shorter than in a centralized setting. The decentralized nature of smart contracts and DAOs fosters the participation of local communities

in the development of tourism opportunities by engaging community organizations, local enterprises, and local entrepreneurs to take part in the tourist value chain. This might entail doing things such as delivering experiences that are one-of-a-kind, promoting items that are manufactured locally, and supporting projects that strengthen the tourist ecosystem as a whole. Decentralized tourist planning guarantees that the advantages of tourism are dispersed equally, resulting in economic growth and greater social well-being. This is accomplished by giving local communities the freedom to make decisions.

The Stramosi initiative provides opportunities for tourists to interact directly with local communities, service providers, local artists, and craftsmen, therefore building a stronger connection to and respect for the cultural legacy of Romania. In connection to DAOs, NFTs holders can have voting rights to choose the direction the project will take, suggest new features, or propose partnerships. This would ensure that the platform grows to meet the ever-changing requirements and preferences not only of the visiting community but also the specific of local businesses. Due to the nature of blockchain technology, the platform could be the pioneer in achieving complete decentralization of the tourist industry service. Because of the immutable and public nature of blockchain transactions, the financial gains will be distributed directly to the local businesses fostering a sense of empowerment and sustainability. Visitors can feel a deeper sense of connection and satisfaction, knowing that their contributions directly support the promotion and development of Romanian tourism. The Stramosi project not only improves the overall quality of the tourist environment for visitors by utilizing blockchain technology and adopting the ideas of decentralization and DAOs but also makes the tourism industry more open and participative. Visitors become engaged participants, co-creators, and patrons, all of whom contribute to the development of local synergies. As the project has a worldwide audience due to the nature of MultiversX cryptocurrency, the Stramosi project could act as a catalyst in promoting Romania at a global level.

Support for Local Businesses

The Stramosi NFT initiative offers local companies a one-of-a-kind opportunity to raise their profile and communicate with people all over the world. The initiative establishes strong entry points for travelers who are interested in seeing Romania by integrating into a powered blockchain platform services offered by hotels, guesthouses, and different activities. Through the use of the platform, local companies are able to promote the products and services they provide, which in turn enables them to draw in a bigger number of customers and compete more effectively with larger firms. Increased visibility helps local companies become more well-known and produce sustained revenue, both of which contribute to the overall expansion of the tourist industry. Stramosi has the capacity to drive partnerships and collaborations with local businesses, festivals, authorities, and other stakeholders to create a synergistic ecosystem that benefits all parties involved. The project promotes local companies and tourism services by forming partnerships with established events such as the UNTOLD Festival and BRANDMINDS. Local entrepreneurs benefit from increased visibility, the opportunity to make new connections, and the

possibility of future cooperation. This could lead to the development of local businesses, job creation, and economic growth in Romania. The expansion of local companies and the resulting increase in the number of customers necessitates the hiring of extra personnel and the acquisition of new resources. This ultimately results in more employment possibilities and the generating of additional profit within the communities involved.

In addition, the Stramosi initiative can be considered an important component in the process of generating revenues for local businesses that are willing to embark on the digital world of NFTs and blockchain technology. As tourism is not a priority in the national authorities' agenda, Stramosi has the power to become a community-oriented tourism initiative, making the intervention of a central entity useless. This in fact coincides with the larger purpose of decentralizing the tourist sector in Romania. The power and influence in traditional tourist models are frequently concentrated in the hands of a small number of centralized enterprises. The Stramosi project, on the other hand, makes it possible for local communities, artists, and content producers to take an active part in the tourist ecosystem by utilizing NFTs and blockchain technology. Because of the decentralized nature of blockchain technology, it enables direct contact between visitors and local businesses. This eliminates the need for middlemen and makes it possible to create a tourism experience that is more inclusive and sustainable. Local artists, craftsmen, and cultural entrepreneurs have the opportunity to directly profit from the trade of Stramosi NFTs. This results in the creation of new revenue streams and the promotion of economic prospects at the grassroots level.

Blockchain and NFT technology in tourism will allow many potential applications for inter-industry use that will have an impact on contracts, transportation, payments, and supply chain management leading to a possible reinvention of tourism. Tourism, blockchain, and NFTs have the potential to revolutionize the tourism sector in Romania due to their ability in bringing security and transparency in several sensitive points of Romanian tourism. As investment in blockchain and NFT solutions for the tourism industry is growing, these improvements are expected to have a remarkable impact on the future of tourism. Blockchain technology changes the travel experience, but the implementation of this technology will raise many challenges that will have to be found to benefit as many tourists as possible in the future because the tourism market is one of the most complex markets.

13.5 Drawbacks and Limitations

While the Stramosi project holds great potential for promoting Romanian tourism and decentralization, there are also potential limitations and risks that should be considered. One should consider the fluctuations that are specific to the NFTs and cryptocurrency market. There is a significant degree of unpredictability associated with both the value of NFTs in general and the market for digital collectibles. It is possible that the value of Stramosi NFTs will go down if there is a severe decrease

in the market either for NFTs or for the EGLD cryptocurrency that is backing the project. Moreover, there could also be a fall in interest among collectors. This may have an effect on how valuable and appealing the project is seen to be, which in turn may have an effect on the number of NFT holders who participate in the initiative as well as its overall level of success. Being a community-based project, this could have a downhill effect as it has been documented that retailers are more prone to herding biases when it comes to investment decision-making in the cryptocurrency and NFTs market (Sood et al., 2023).

Another drawback could come from regulatory and legal obstacles found in the implementation of blockchain technology at the wider level, not to mention specifically linked to the tourism sector. As the technology and the uses of it continue to develop, there is a possibility that there could be unpredictability or changes in rules that will have an effect on the entire development of the project. MiCA EU law has already been voted by the European Parliament on April 20, 2023, a piece of legislation that draws from the best practices found in the financial markets regulation and applies to the cryptocurrency market. MiCA creates a regulatory framework in the EU for crypto firms, providing better clarity on the industry's underlying regulations for various actors. Within the area of digital assets, it is intended to bring more transparency, standardization, and safety of operations. The creation and deployment of a tourism platform that is based on blockchain technology might be a difficult and time-consuming process. The platform's operation and the user experience may be negatively impacted if certain technical difficulties, including scalability, network congestion, and compatibility across various blockchain protocols, are not resolved. The availability of continuing technical expertise and resources is required to maintain the system's security and efficiency while also ensuring that the interface is smooth and easy to use. Having these aspects considered, the project is already experiencing delays with respect to its announced roadmap. The current platform is more an MVP and does not showcase its full potential. Moreover, neither the white paper has been published to the public. Therefore, the community does not have more in-depth information about the technical specifications of the platform, token economics and governance model. This could seriously affect the success of the project if the entire community decides to massively to sell their NFTs and in consequence lower the floor price.

Another key point that can downturn the success of Stramosi is related to the mass acceptance of blockchain technology in general and NFTs in particular. There are still reticent people that don't fully grasp the idea of ownership on the blockchain and the difference between a NFT and a digital photo on the internet. Moreover, in Romania, cryptocurrency is still associated with gambling and money laundering. This in fact can have a detrimental effect to the project and cut back the user engagement with the Stramosi NFT project, despite the fact that the project offers a novel concept and a variety of capabilities. It is possible that continual marketing activities, educational campaigns, and incentive programs will be required in order to attract a critical mass of NFT holders, engage the community in decision-making, and promote active involvement. This is also linked to the reputational risks that the project is carrying. Any endeavor that engages members of a community

and deals NFTs exposes the initiative to potential damage to its reputation. A poor reputation for the project might be caused by unfavorable press or the perception of improper management of money, collaborations, or community governance. This can have a negative impact on user trust and the overall success of the project. Therefore, listing all of these potential risks, it is possible that the initiative will not be able to completely transform the tourist industry in Romania if not enough people accept and participate in it.

Despite all these potential gains, Romanian tourism has long been put off the list of priorities on the national government agenda. For the past 30 years, since the fall of communism, Romanian national authorities have not managed to create a national identity and exploit the geographical position and cultural traditions of the Romanian people. Long-term strategies that would take into account the rural reality of Romania have been missing from the government agenda. Romania desperately needs a strategic approach process to create the conditions and provide the basis for sustainable, high-quality, and competitive tourism (Năstase, 2007). Recently, the COVID-19 crisis has significantly affected the tourism sector, and it is for this reason that the consideration of blockchain in tourism during and after this COVID-19 crisis inspires even more hope in connection with this technology. However, there is hope that small local businesses and travel avids from Romania could come together in a decentralized project and with the help of a few local authorities that are committed to serving its local constituents can change the image of a lost country that cannot transcend its communist past.

13.6 Conclusions

If in the last 20 years the internet has managed to overtake boundaries and to form communities of people interested in a multitude of subjects, things can change radically in the present and will progress much faster than before. However, we choose to make a kind of "hard-wire," a system that does not come to replace or improve the traditional one, but one that creates an ecosystem independent of tourism and tourism promotion in which anyone can participate. Currently, the best-known and best-used non-fungible token standard in Romania is Stramosi. This innovative technology has a long way to go before it reaches mass adoption by users. Several applications of the blockchain in the travel and tourism industry would have the following advantages not only for tourists but also for local tourism businesses: easy, secure, and traceable payments; verifiable commercial assessments; baggage tracking and tracing; improved reward mechanisms; and unified identification services. The blockchain community can be seen as a hybrid of social networking and travel agency. Both travelers and locals can provide additional information to support purchasing decisions and travel planning, such as top video content created by influencers and service reviews from other websites. This adds a personal touch to any travel planning.

In the coming years, many business models will change due to blockchain technology, especially for the travel and tourism industry. As Kristian Gjerding, the CEO of CellPoint Mobile states that "Factors like performance pressures, mobile proliferation, rapid third-party innovation, growing customer expectations, and uncertain marketplace economics will force airlines and travel companies to reconsider their business models and find a place for blockchain if they are to build and keep a durable, market-leading brand" (Forbes, 2022). Therefore, we can expect diversification of travel agencies where individuals can provide services by acting as small agencies. It is clear that the implementation of blockchain technology will be effective where there is a strong need for asset exchanges (either physical or virtual) between various actors.

In the context of Romanian tourism, the NFT project Stramosi has the potential to disrupt the tourism industry's current business model and rebrand the image of Romania as a digital and innovative country. It can sustain innovation and sustainability in the tourism sector by promoting local businesses. The adoption of cryptocurrencies as a payment method can reduce extra fees for foreign travelers when exchanging currency. Blockchain technology enables more simplified and secure procedures related to traveler identification—biometric scan stored on a wearable or mobile tool using encryption through a combination of private and public keys. Through its immutable feature, it has the potential to turn auditing into a fast, efficient, and cost-effective procedure providing trust to businesses that need to share their data on a daily basis. Moreover, it increases the level of disintermediation and transparency in tourism and, by extension, reduces inefficiencies and increases data security in this industry. The Stramosi project not only plays a crucial part in the promotion and preservation of cultural heritage in Romanian tourism but also reflects the notion of decentralization within the sector. The initiative empowers local stakeholders by utilizing NFTs and the technology of blockchain, which also improves transparency and generates economic opportunities for all stakeholders involved in the ecosystem. The Stramosi project is a great example of how decentralized tourism can be used to showcase and celebrate the diverse cultural history of Romania while also providing visitors with an experience that is environmentally friendly and interesting.

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