Research article

The new geography of asylum: digital identity, artificial intelligence and blockchain

Giuseppe Terranova*

The Jean Monnet Centre of Excellence on Integration of Migrants in Europe (IntoME), University of Tuscia, Italy

* Correspondence: Email: giuseppe.terranova@unitus.it.

Abstract: For several years, the United Nations High Commissioner for Refugees (UNHCR) has insisted on the need to invest in new technologies to improve the procedures for the identification, reception and redistribution of asylum seekers around the world. United Nations experts have promoted new forms of digital inclusion aimed at both asylum seekers and displaced persons. They consider digital tools to be essential for achieving one of the UN Sustainable Development Goals: Target 16.9, which by 2030 intends to provide legal identity for all, including birth registration. Biometrics have been used on an experimental basis since the early 2000s to create digital identities in the humanitarian space for those vulnerable persons without traditional identity documents. It is a divisive subject. The aim of this article is to consider, from a geopolitical perspective, if following the acceleration of the digital revolution caused by the pandemic it is possible to invest in technological tools to improve the processes of identification, redistribution and reception of asylum seekers and displaced persons while at the same time respecting their privacy and freedoms. This hypothesis would signal the emergence of a geography of receiving asylum seekers on a global scale based not only on the governance of territory and borders, but also on platform governance.

Keywords: asylum seeker; biometrics; digital identity; refugee; stateless

1. Introduction, methodology and research objectives

This work proposes to investigate, from a geopolitical perspective, if and how the acceleration of

the digital revolution caused by the pandemic can reshape the geography of receiving asylum seekers on a global scale. For several years, the United Nations High Commissioner for Refugees (UNHCR) has insisted on the need to invest in new technologies to improve the procedures for the recognition, reception and redistribution of asylum seekers around the world. United Nations experts have promoted new forms of digital inclusion aimed at asylum seekers and displaced persons. In this article, we will analyze in particular the tools of digital identity and biometrics in the identification procedures of men, women and children requesting international protection. Biometrics have been used on an experimental basis since the early 2000s to create digital identities in the humanitarian space for those vulnerable persons without traditional identity documents. It is a divisive subject. Many international observers and experts consider these innovative technological methods fundamental to ensure greater inclusion and assistance for the most fragile groups seeking humanitarian protection [1]. They consider digital tools to be essential to achieving one of the UN Sustainable Development Goals: Target 16.9, which states by 2030, provide legal identity for all, including birth registration.

Another current of thought argues, on the contrary, that digital identity and biometrics can accentuate, rather than reduce, exclusion and discrimination against the most vulnerable. From this perspective, these technological tools are considered a serious threat to those seeking humanitarian assistance. The fear is that electronic tracking could become an instrument of excessive control such as to violate the privacy and even the freedoms of asylum seekers and displaced persons.

We will analyze whether it is possible following the acceleration of the digital revolution caused by the pandemic, to invest in technological tools to improve the processes of identification, reception and redistribution of asylum seekers and displaced persons while at the same time respecting their privacy and freedoms. This hypothesis would signal the emergence of a geography of receiving asylum seekers on a global scale based not only on the governance of territory and borders, but also on platform governance.

Note that the issue is further complicated by the fact that these procedures are currently the responsibility of individual nation states, while the digitization of identity indicated by the UN Sustainable Development Goal: Target 16.9 is universal and therefore has no boundaries. This contrast between national governance of a global phenomenon such as the humanitarian emergency has been accentuated during the pandemic. Since the onset of the international health crisis we have, in fact, entered a new world, but one with the old national power structures. Who or what will replace these old structures of power is a question that cannot be avoided. In the past, and for a long period of time, the control of power was in the hands of the large imperial powers, the Chinese and Roman empires, and now, since the time of Westphalia, the nation states: "cuius regio eius religio". Today the international health emergency and digital innovations have led to the awareness, for many difficult to acknowledge, that the fate of the planet unites us, and does not recognise national constraints and border logic [2,3].

2. Materials

2.1. The global reception system for asylum seekers: between old and new worlds

Since the early 2000s, UNHCR has been experimenting with innovative tools to improve the procedures for the identification, reception and redistribution of humanitarian protection applicants on a global scale. UN experts, unlike many states, have been increasingly aware of the limitations of

the 1951 Refugee Convention [4,5], which today is still the most important international legal document on applications for international protection. The Convention was designed for a world that no longer exists. In the aftermath of the Second World War, the concern was to protect European citizens from the violence and discrimination that they could suffer from their despotic and authoritarian countries of origin.

The real problem today is that potential refugees of the 21st century only partly correspond to those protected under the 1951 Geneva Convention. For example, Syrians fleeing a country at war for over ten years have been joined by a heterogeneous multitude of vulnerable people who seek asylum because they are victims of violence not from the State (public power) but from family or criminal gangs (private power). Something that no one had foreseen 70 years ago. The case of the United States is striking, with a sharp increase in migration flows (organized caravans of thousands of people marching towards the American border) from Central America (Nicaragua, Honduras, Salvador and Guatemala) where private guerrilla movements, which are not a direct emanation of political power, have caused the flight of thousands of people [6]. The complexity of this phenomenon calls into question both the definition of asylum according to the 1951 Convention and the dichotomy between forced migration and voluntary mobility. In fact, these Central American migrants are defined both as irregular immigrants and asylum seekers. Many of them, not being victims of violence by a state, but by private individuals, do not fall under the jurisdiction of the Geneva Convention. While others, on the basis of an extensive interpretation of the same situation, are under the jurisdiction of the convention and, therefore, have what it takes to obtain refugee status [7].

Furthermore, the humanitarian crises of the 21st century are increasingly more global and longer lasting. Think of the multi-year instability of countries such as Afghanistan, Iraq or Somalia and of entire geographical areas such as Latin America. Faced with these global humanitarian challenges, the states adhering to the Geneva Convention of 1951 give national responses that are insufficient and often counterproductive, especially for countries that, due to their geographical position, are more exposed than others to the pressure of humanitarian migration.

The United Nations High Commissioner for Refugees is formally guardian and controller of compliance with the Geneva Convention but in fact does not have adequate powers and tools to sanction states that violate its principles. The result is that, confronted with the globalization of humanitarian crises, the international community responds by following national interests, precisely because there is no real coordination on a global scale.

These are critical issues highlighted for some time by the world's leading scholars on the subject. In 1997, for example, a Commission of leading international experts on asylum law, appointed by the United Nations and chaired by Prof. James C. Hathaway of the University of Michigan, to assess the level of implementation on a global scale of the 1951 Geneva Convention, reported that the international asylum regime was in crisis because it was based on outdated paradigms often harmful to both refugees and host states. The Commission recommended several reforms but two in particular [8].

The first was strengthening the power of the UNHCR with new decision-making and financial tools which would be obtained from the savings made by the states from delegating to the UNHCR the management of the costly administrative procedures for the evaluation of asylum applications at national level. The second reform was to address the imbalance between states that welcomed too many refugees and those that received too few, by establishing safe places, under the supervision of the UN, where it would be possible to seek asylum without risking one's life. Suitable for this function could be the countries of first landing, but also the UNHCR refugee camps near the conflict zones or international

hubs recognized as "safe havens" where refugees could find assistance and protection while waiting for the UNHCR experts to evaluate their asylum applications. The novelty of this process would be that applicants whose requests were accepted would be redistributed among all the states of the international community that had given their willingness to accept refugees taking into account certain factors (population, GDP, etc...). In short, it was proposed to separate the geographical area dedicated to the identification of asylum seekers from the geographical area intended for the reception of those who demonstrated that they had met the conditions necessary for obtaining refugee status.

The recommendations made by the Commission aimed at achieving a new global governance of humanitarian emergencies and a strengthening of the UNHCR were, albeit timidly and partially, accepted on 18 December 2018 when the United Nations Assembly approved a new Global Compact on Refugees. However, this initiative was immediately weakened by the choice made by important nations such as the United States, which decided not to join the pact.

2.2. New digital frontiers for asylum seekers

For geopolitical reasons in the current international political chessboard it is difficult to reach a Global Pact on refugees that could allow the Geneva Convention to be updated, which has passed 70 years since its creation. The world of the 21st century is disorderly [9]; it is fluid, fragmented and devoid of a global leadership that could induce the UN member states to find an agreement on such a divisive issue. For this reason, since the beginning of the Third Millennium, UNHCR has tried to improve the international system of identification, reception and redistribution of asylum seekers by promoting various good practices, such as those related to the implementation of digital identity and biometrics, in compliance with one of the UN Sustainable Development Goals: 16.9, which by 2030 intends to provide legal identity for all, including birth registration.

The term digital identity refers to a set of electronically stored attributes and characteristics that can uniquely identify a person [10]. The digital identity can be used as a legal identity, such as a birth certificate or a passport. Or it can allow you to access one or more services, such as a library or a bank card.

The term biometrics refers to the biological or physiological characteristics (fingerprints, facial structures, iris or retina, voice recognition, gait, etc.) used for the identification of a person or to verify the identification of an individual through a comparison with a database of previously collected biometric samples. Consequently, biometric data are used to improve digital identification processes.

UNHCR has promoted the use of these tools because in many countries the human right to have a legal identity, such as an identity card or passport whether they be paper and/or digital is not recognized. It is a human right that no more than a billion people in the world enjoy. Without it, one is exposed to the risk of exploitation and abuse, human trafficking, forced marriages and various forms of slavery. One is marginalized and practically invisible. In our modern world, this excludes us from political and socio-economic participation and services, limits access to the job market, housing or a bank account. It is a problem that affects the least developed countries in particular. For a long time, UNHCR has encouraged and supported the governments of these states to establish civil registrations to recognize the human right to legal identity for all citizens. According to UN experts, this goal could now be more easily achieved by using new technologies that would make it possible to guarantee legal identity even in those countries that have never been able to produce paper identity documents, that would be reliable and not duplicable by organized crime.

Deprivation of legal identity is a particularly complex problem for those, like asylum seekers, who leave their country of origin in search of international protection abroad, but do not have the possibility to prove to the host country authorities who they are, where they come from or what their nationality is, in short, their legal identity.

For these reasons, UNHCR experimented with the digital database Profile Global Registration System (ProGres) during the Kosovo crisis in the late 1990s and since its official launch in 2002, has been used to collect detailed information (name, surname, age, health problems, progress of the asylum application, etc.) on people who have applied for international protection throughout the world. ProGres is also used as a tool to verify the true identity of refugees. In many UNHCR camps, for example, the information collected through ProGres is cross checked with biometric data, fingerprints and iris scans, to avoid the situation of giving help and assistance to those who present themselves falsely as refugees. In Jordan, for example, over two million refugees who receive UNHCR aid and assistance undergo an iris scan. Since these innovative identity verification systems were introduced in Kenya's Kakuma and Dadaab refugee camps in 2013, the United Nations has saved an average of $1.4 million per month that was previously spent on providing shelter to fake refugees.

In 2014, the World Bank launched the Identification for Development Initiative to promote legal digital identity on a global scale. In June 2016, ID2020, the first UN summit on legal identity, took place in New York. Heads of State and Government, Non-Governmental Organizations and multinationals operating in the technology sector, discussed how to achieve part of the UN Sustainable Development Goal 16.9, that is, we repeat, of providing a legal identity (including birth registration) to the entire world population by 2030.

Following the signals that emerged from the aforementioned 2016 UN initiative, UNHCR launched its Population Registration and Identity Management EcoSystem (PRIMES), which also included updates on the use of biometrics to support digital legal identity [11]. The goal was to create a global database on digital legal identity. To achieve this ambitious goal, from 2018/2019, UNHCR launched, in collaboration with governments, academic institutions, international organizations and state-of-the-art companies in the technology sector, various pilot projects to test the reliability of infrastructures and the critical issues related to digital identification procedures, including the use of biometric data. In this attempt to promote the inclusion of asylum seekers and stateless persons in the digital space UNHCR has experienced difficulties related to the absence of international standards governing digital legal identity and the presence of national policies and laws that hinder these new forms of universal and transnational identification. In the start-up phase of the PRIMES project, UN experts engaged in complex negotiations with the partners of national governments in an attempt to agree new sustainable regulatory frameworks, which were appropriate and compliant with digital identification procedures [12].

The obstacles faced by UNHCR in promoting these pilot projects have been alleviated in part by the acceleration of the digital revolution caused by the COVID-19 pandemic. Lockdowns and anti-virus measures, such as social distancing, have forced many states to implement the digitization of public administration processes over the last twelve months, which have been foreseen and promised for some time, but which had not been implemented before the onset of the international health crisis. It is a phenomenon that mainly involves more developed countries as opposed to less developed ones. However, it is a development that can help UNHCR's work in promoting new digital frontiers for asylum seekers and stateless persons. This is because many of the developed countries are the destination of humanitarian migration flows, which in the near future could be

better managed as a result of these UN promoted pilot projects. We can look at the example of the European Union.

The European Commission led by Ursula Von der Leyen in March 2021 promoted the Communication 2030 Digital Compass: the European way for the digital decade [13]. With the Digital Compass the Commission proposes for the next ten years not only ambitious goals, but also a solid governance mechanism, fundamental milestones and practical tools to facilitate their implementation, in particular the prospect of transnational cooperation in the digital space. The Communication includes a monitoring system that measures the EU's progress towards the key objectives for 2030, and also takes into account the enormous changes related to the pandemic, which has accelerated the use of digital tools, demonstrating their opportunity, but also exposing the most vulnerable to digital inequalities. The Communication on the Digital Compass of the European Commission is based on four guidelines.

The first guideline concerns digital skills. By 2030, at least 80% of European adults should have basic digital skills. In addition, there should be 20 million Information, Communication and Technology (ICT) specialists employed in the EU. Digital training and education should support a workforce where people can acquire specialized digital skills to obtain good jobs and have rewarding careers. In 2019 there were 7.8 million specialists in the ICT sector in the European Union with a previous annual growth rate of 4.2%. If this trend continues, the EU risks not reaching its target of 20 million experts to be employed in strategic sectors such as cybersecurity or data analytics by 2030. Over 70% of companies report a lack of personnel with adequate digital skills as an obstacle to investments. It is one of the reasons that prompted the EU Commission to speed up the approval of the Digital Compass.

The second guideline relates to digital infrastructures. By 2030, all populated areas of the EU should be covered by 5G; ten thousand climate-safe 5G nodes should be spread across Europe and the EU should have its first quantum computer.

The third guideline deals with the digital transformation of businesses. By 2030, three out of four companies are expected to use Cloud Computing, Big Data and Artificial Intelligence services; more than 90% of small and medium-sized enterprises (SMEs) are expected to reach the basic level of digital intensity. SMEs will play a central role in the digital transition of the EU; they are the majority of companies throughout the 27 Member States and can become a key source of innovation. With the support of more than two hundred digital innovation poles and industrial clusters, by 2030 SMEs should have the opportunity to access digital technologies or digital data simply and correctly, guaranteed by adequate regulation and benefiting from digitization support.

The fourth guideline regards the digitization of public services. By 2030, all major public services should be available online; all citizens must have access to their electronic medical records and 80% of citizens should have a digital identity. User-friendly services will enable citizens of all ages and businesses of all sizes to influence government decisions and outcomes more efficiently and so improve public services. National governments will increasingly become "platform governments" [14,15] capable of providing complete and easy online access to public services with the aid of a perfect interaction of advanced capabilities, such as data processing, artificial intelligence and virtual reality. The principle of platform governance recalls the previously described Population Registration and Identity Management EcoSystem (PRIMES) platform through which UNHCR aims, thanks to the collaboration of national governments, to create a transnational database with multilevel functions for the creation and recognition of the digital legal identity of asylum seekers and stateless persons. It is also interesting to note that the EU's Digital Compass

emphasizes the development of "smart villages", i.e., rural communities that use innovative solutions to improve their resilience, building on their strengths and opportunities at local level.

In addition to the aforementioned four guidelines, the EU Digital Compass promotes and supports multi-country transnational projects to pool investments from the EU budget, member states and industry. As part of the Next Generation EU program, in their recovery and resilience plans, Member States are asked to devote 20% to prioritize the digital transition. Possible multi-country projects include a pan-European interconnected data processing infrastructure; the creation of pan-European 5G corridors for connected and automated mobility that would contribute to road safety and the goals of the green transition; the blockchain[1]-based service infrastructure; the European Digital Innovation Hubs and hi-tech pan-European partnerships for digital skills.

The Digital Compass of the European Commission is also concerned with designing a legal framework to regulate these new digital frontiers. The goal is to ensure that the new digital environment is open to all, but compliant with the law in order to guarantee users the right to privacy, data protection and freedom of expression. The European Commission will propose to include this set of principles and digital rights in a solemn interinstitutional declaration between the Commission, the Parliament and the European Council. An intergovernmental structure is envisaged for the Digital Compass involving all 27 EU Member States.

The Digital Compass of the European Commission is an example of how the acceleration of the digital revolution caused by the pandemic can make it possible to experiment and develop tools to guarantee the right to legal identity, especially for the most vulnerable groups of the global population, such as asylum seekers and stateless persons.

3. Results

3.1. Towards a digital legal identity for asylum seekers?

The experimental projects on digital legal identity described in the previous paragraphs represent the first concrete attempts to take advantage of new technologies to give global, and not national, responses to international humanitarian crises.

The international scientific community is divided on the advantages that can be gained from the processes of digitization of identities [16]. According to several authoritative observers, in the era of migration, digital identification data can have multiple functions. They are a potential tool for monitoring and identifying medical care for asylum seekers hosted in reception centers or in refugee camps managed by UNHCR. Digital identification data could also be useful for creating or improving, especially in less developed countries, birth and marital status registers which are key tools for planning demographic policies and for managing global mass migration [17]. Digital legal identity could be a potential advantage for economic actors in host countries, such as banks and financial institutions. Recognizing the right to legal identity of asylum seekers and stateless persons would allow them to play an active role in the economic and social fabric of the host country. This

---

[1] The blockchain is a growing list of records, called blocks, that are linked and secured with cryptography. Each block contains a cryptographic hash that links it to the previous block. Blockchains are resistant to data modification. A blockchain can allow you to structure an open and distributed ledger that can record transactions between two parties in an efficient, permanent and verifiable way.

means having the ability to open a bank account or to send money to or receive money from relatives in their home countries by using legal channels and not, as often happens, the unlawful channels that feed the illegal business of the underground economy.

Awarding asylum seekers the right to legal identity means transforming them from passive subjects who are assisted and maintained to active ones who can become a resource for the host country. Digital legal identity would allow many of them to prove their level of education and to have their qualifications recognized in their country of origin and even in refugee camps where many of them are born and die in the often fruitless hope of obtaining refugee status and international protection. This would aid the enhancement of personal skills and attitudes of asylum seekers and would help avoid the phenomenon of brain waste, i.e., work by the highly skilled in low-skilled and low-paid jobs.

As stated at the beginning of this work, on a global scale, legal identity is currently certified by paper documentation issued by national governments, e.g., passports, identity cards, certificates of citizenship, residence permits, etc. States continue to rely on physical documents as certification of identity, which exposes those persons most vulnerable to various risks. If the documents are lost, one can no longer prove one's identity and the procedures for requesting a duplicate are impossible if the lost document was issued by the government of the country from which the person concerned fled. And even if the lost document has been issued by the authorities of the host country, linguistic and bureaucratic obstacles can hinder the process of obtaining a new one. Passports and identity cards can also be removed or destroyed by Human traffickers in order to increase their trade. Another situation that can arise is where those seeking refugee status destroy their own documents because they know that they do not meet the requirements as provided by article 1 of the Geneva Convention of 1951. In these cases it can happen that those who are only economic immigrants present themselves as asylum seekers and thus obtain refugee status.

Organized crime gangs made wide use of fake identity documents during the 2015 refugee emergency in Europe, allowing many irregular economic immigrants to present themselves falsely as asylum seekers. One of the centers of this hub of international counterfeiters was a Facebook group with over 120,000 subscribers called The Travel's Platform, which has now been taken down. The page provided information on routes to follow, breaking news and above all it put human traffickers and potential customers in contact. Once the terms of the operation between trafficker and immigrant were agreed, the immigrant from perhaps Kosovo or Albania (who would have been refused entry to the EU because they were not fleeing war-torn countries) holding an apparently authentic Syrian passport would try to enter the EU as an asylum seeker. Thus, he had a high probability of being accepted as a refugee because he came from a country at war rather than being rejected as an irregular economic immigrant. This explains, for example, why between 2014 and 2015, along the southern border of the European Union, the percentage of suspected counterfeiters increased from 3% to 18%. The most requested fake documents for immigrants are not only passports and identity cards but also breeder documents (birth and marriage certificates, and residence permits,) which are essential for obtaining fraudulent refugee status or entry and long-term stay visas.

For these reasons, the UNHCR, as we noted earlier, has already begun to collect biometric data. UNHCR programs have introduced iris scanning in refugee camps, especially for those without identity documents and most at risk of exploitation, such as unaccompanied minors. This allows them to have a basic biological identity, a proof of existence. Medical history and other useful data can be shared to facilitate the reunion of refugees with relatives and friends [18].

Furthermore, with the use of new technologies, the way in which the UNHCR and more

generally the international humanitarian agencies provide humanitarian aid is also changing; passing from a welfare model to a model that encourages the autonomy and independence of refugees. To date, 96% of aid given to this special category of immigrants is through the provision of basic necessities: powdered milk, blankets, diapers, etc. While in only 4% of cases they are allocated cash to use according to their real needs. UNHCR's goal is to reverse this statistic by giving the immigrant the responsibility of managing their economic resources—cash-aid is provided through the use of debit cards but above all through accounts that can be managed via smartphone.

Pilot projects of this kind have already demonstrated the advantages of the new assistance model which transforms the refugee from being a passive receiver of aid into an active economic and social player in the host country. A recent report by the International Rescue Committee based on a sample of about 90,000 families in Lebanon who had received, on an experimental basis, cash-aid of $575 via smartphones and debit cards, concluded that the vast majority of families had spent the money on food, clothes, gasoline, repaying debts and sending children to school. Contrary to what was expected by many observers, the cash-aid had not been wasted on non-essential goods, such as cigarettes, alcohol and drugs [19]. It is for these reasons that UNHCR has begun delivering thousands of cell phone sims to refugee camps and also solar chargers for recharging cell phones.

4. Discussion

The new digital tools used in the identification and reception of asylum seekers on a global scale are today still divisive and criticized by some of the international scientific community. There are fears that digital identity, biometric and iris scanning could become dangerous tools used by national governments to limit and/or violate people's freedom and their right to privacy. These are shared concerns that involve complex legal issues, but also ethical ones. The scope of the potential abuse of civil liberties and information is immeasurable. The acceleration of the digital revolution may help in the identification and creation of new technological tools which could be used in the fight against any misuse of the databases of global digital legal identities. To help tackle this problem, in 2016 during the ID2020 in New York, the first UN Summit on Legal Identity, two of the world's leading cryptographic experts, Christopher Allen and Jeff Garzik, pioneer of Bitcoin, proposed the idea of self-sovereign identity [20]. This concept is based on the principle that identity should be in the hands of the people. Everyone should have an identity that they own, and that nobody can take away from them. In other words, according to the two luminaries of technology, governments can recognize, but not own or create, the self-sovereign identity that the individual already has, because he can prove his identity with biometric data. Sensitive and private information, i.e., medical, economic, social, etc., can be stored privately, shared safely and independently by the individual, but not used outside their context without the consent of the owner of the data, which, however, is not the norm currently.

The concept of a digital self-sovereign identity also includes the principle of minimization. This means that during the creation of the identity it is necessary to avoid the excessive collection of data, establishing a minimum level of assurance, starting from the basic element of an identification (DNA) to proceed in the least invasive way possible, collecting further, but only indispensable personal information. The basic idea is that the self-sovereign identity is created by and with those directly concerned (asylum seekers), not on behalf of those directly concerned.

It remains to be seen who will have the authority and power to ensure the safety of this system. To date, the validity and truthfulness of a traditional paper identity document is guaranteed by the

state responsible for its issue. In the case of self-sovereign identity, based on a transnational platform, national governments would not have the authority and capacity to act as guarantors. The procedures for recognizing self-sovereign identity are not linked to a specific territory on which a given country can assert its sovereignty. According to Christopher Allen and Jeff Garzik, to guarantee the security of a supranational system such as that of self-sovereign identity there must be an instrument and/or a supranational authority. Having acknowledged that in the geopolitical context of the 21st century, the conditions are lacking for an international agreement between states to assign such power to a supranational body, the two experts proposed the use of blockchain technology, the technology underlying Bitcoin, which allows for safe transactions within inviolable transnational digital systems.

The blockchain is a growing list of records, called blocks, that are linked and secured with cryptography. Each block contains a cryptographic hash that links it to the previous block. Blockchains are resistant to data modification. A blockchain can allow you to structure an open and distributed ledger that can record transactions between two parties in an efficient, permanent and verifiable way. For use as a ledger a blockchain is generally managed by a peer-to-peer network that collectively adheres to a protocol for validating new blocks. Once data is recorded in a certain block, it cannot be retroactively changed without modifying all subsequent blocks, which requires the collusion of the majority of the network.

In other words, the blockchain is a distributed peer-to-peer database in which anyone can become a node in the network and which itself acts as a control network for any transaction. This excludes the need for a third party supervisory body. Blockchain became popular because it is the basis of the Bitcoin cryptocurrency (it maintains its anonymity but guarantees the transaction) but the underlying mechanism can be useful in many areas, from finance to institutions for any operation that needs distributed control.

Finland has exploited its potential in the field of identifying and welcoming refugees, especially for those who do not have bank accounts. The Finnish immigration service, in collaboration with the startup Moni, distributed for a period of two years prepaid Mastercards, instead of cash to the refugees. This credit card network was guaranteed by the Blockchain, through which each refugee had also obtained a digital identity. The card worked both as a current account and as a tool to pay for purchases or bills. Thanks to the ownership of the card and the digital identity registered on a blockchain, a step forward was taken in the social inclusion of the refugee who attained a decent financial situation that was simple to establish and at the same time safe for the public purse because the startup monitored the use of the cards and reported to the relevant state institutions.

However, there is an interesting fact on which to reflect. In many countries, especially in developing countries, the number of cellular phone owners exceeds that of bank account holders. According to Mastercard estimates, at least 600 million individuals in 15 countries have a smartphone, but not an IBAN. Hence the idea of the Irish startup AID: Tech to enable, through a mobile application, the creation of a digital identity. The underlying principle is that of blockchain technology, i.e. sequential authentication of data through digital registers. In this way it was possible to legally register the births of children by mothers without legal identity in Tanzania, allowing the mothers to become guarantors of a digital profile of their children. In Europe, on the other hand, AID: Tech was involved in a financial inclusion project, enabling beneficiaries to access complex banking services [21].

AID: Tech's technology cannot solve, by itself, the problem of those who have no legal identity. However, it has had a significant impact on the transformation of the enabling factors of identity: no longer civil registries, but certified data through a cellular phone.

These are good practices that seem to move, albeit with all the difficulties that any modernization process involves, towards the self-sovereign identity theorized by Christopher Allen and Jeff Garzik.

5. Conclusions

The acceleration of the digital revolution due to the pandemic can improve the international systems of identification and reception of asylum seekers on a global scale. The new digital frontiers of asylum can facilitate the achievement of one of the United Nations sustainable development goals: 16:9, which by 2030 intends to provide legal identity for all, including birth registration. However, it is a complex path with some obstacles [22].

The first obstacle concerns the scarce attention that has been paid to the opinions of those directly involved in this debate, i.e, the asylum seekers themselves. A recent study conducted by the Overseas Development Institute (ODI) in UNHCR refugee camps in Jordan, found that only 10% of interviewees had allowed biometric data such as scans to be taken to obtain a digital identity, which is necessary to access services and basic necessities offered to them by the United Nations. Most of the refugees interviewed recognized the benefits and high safety standards guaranteed by biometrics and iris scanning. However, their reasons for not wanting to use them are not the same as those given by academics and advocates who are against the use of biometrics in the humanitarian sphere. Rather than describing biometrics in terms of surveillance, data protection or ownership of their data, respondents talked about it on a very practical level. Their refusal was justified simply by the reasonable observation that these advanced technological tools are not yet efficient and practical due to the digital gap of the contexts in which they are applied. For example, a failure or slowdown of the internet connection could lead to their inability to be recognized and consequently to their access to the aid provided by the United Nations. Furthermore, many complained that the iris recognition system does not give the beneficiary the possibility of being able to nominate a relative in the event of unforeseen events, such as a health problem. This means that if the beneficiary was unable to present themselves in front of the iris recognition system, they would not receive the supplies that with traditional systems they would have because the goods could have been collected by a member of their family. These are practical critical issues that need to be listened to more closely in order to improve the new digital tools used in the process of identifying and welcoming the most vulnerable [23].

The second obstacle is represented by nation states. Faced with the global challenges of humanitarian crises, each country maintains its own authority and contributes only national responses, which are not very effective [24]. We are lacking a global leadership that can help push the majority of UN states to update international rules on asylum, starting with the 1951 Geneva Convention, and taking into account the new geopolitical scenarios of the 21st century and the technological innovations created by the accelerated digital revolution.

We know for certain that experimental technologies and platforms for the recognition of digital legal identity must become more efficient and secure. For digital identity to work on a global scale, it must be easily accessible to all, especially the most vulnerable in less developed countries. At the heart of these innovations must be the interests of individual users. The global platforms for the digital identification processes of asylum seekers should operate in a standardized manner, should be managed in a unified and simple way and should be portable to allow those who move to use them. They must also be designed in such a way as to adapt to any technological changes. This would

make it possible to change the paradigm of the geography of asylum in the world, which would no longer be linked exclusively to territories and to those who have sovereignty, that is, states. The processes of identification, redistribution and reception of asylum seekers would be facilitated by the use of digital platforms to support states, especially those most exposed to migration pressures on which the burden of managing and accommodating an excessive number of asylum seekers lies. These asylum seekers, thanks to new technologies, would be recognized, received and redistributed more efficiently and equitably on a global scale. In the management of humanitarian crises, the government of the territory and borders would therefore be aided and supported by what in this work has been defined as platform governance.

Conflict of interest

The author declares no conflict of interest.

References

1. Weitzberg K, Cheesman M, Martin A, et al. (2021) Between surveillance and recognition: rethinking digital identity in aid. *Big Data Soc*. https://doi.org/10.1177/20539517211006744

2. Bassetti P (2020) *Oltre lo specchio di Alice. Governare l'innovazione nel cambiamento d'epoca*. Milano: Guerrini & Associati.

3. Bassetti P, Corna-Pellegrini G (1959) *Le redini del potere*. Milano: Ceschina.

4. Benhabib S (2020) The End of the 1951 Refugee Convention? Dilemmas of Sovereignty, Territoriality, and Human Rights. *Jus Cogens* 2: 75–100. https://doi.org/10.1007/s42439-020-00022-1

5. Grandi F (2018) UNHCR chief Grandi: how business can help solve refugee crisis. Available from: https://www.ft.com/content/4287cbfc-b744-11e8-a1d8-15c2dd1280ff .

6. Bolaffi G, Terranova G (2019) *Immigrazione. Cause, problemi, soluzioni*. Napoli: Editoriale Scientifica.

7. Ramji-Nogales J (2011) *Refugee roulette: disparities in asylum adjudication and proposals reform*. New York: New York University Press.

8. Hathaway J, Neve RA (1997) Making international refugee law relevant again: a proposal for collectivized and solution-oriented protection. *Harv Hum Rts J* 10: 115–211.

9. Pagnini MP, Terranova G (2020) *Un mondo disordinario tra Medioevo e Nuovo Rinascimento. Un virus sconvolge la geopolitica e oltre*. Roma: Aracne.

10. Casswell J (2019) The digital lives of refugees: how displaced populations use mobile phones and what gets in the way. Available from: https://www.gsma.com/mobilefordevelopment/blog/the-digital-lives-of-refugees-how-displaced-populations-use-mobile-phones-and-what-gets-in-the-way/.

11. UNHCR (2018) From ProGres to PRIMES. Available from: https://www.unhcr.org/blogs/wp-content/uploads/sites/48/2018/03/2018-03-16-PRIMES-Flyer.pdf.

12. UNHCR (2018) Strategy on digital identity and inclusion. Available from: https://www.unhcr.org/blogs/wp-content/uploads/sites/48/2018/03/2018-02-Digital-Identity_02.pdf.

13. European Commission (2019) Europe's digital decade: digital targets for 2030. Available from: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targe ts-2030_en.

14. Madon S, Schoemaker E (2021) Digital identity as a platform for improving refugee management. *Inf Syst J* 31: 929–953. https://doi.org/10.1111/isj.12353

15. Khanna P (2016) *Connectography: mapping the future of global civilizations*. New York: Random House.

16. Tyler H (2022) The increasing use of artificial intelligence in border zones prompts privacy questions. Available from: https://www.migrationpolicy.org/article/artificial-intelligence-border-zones-privacy.

17. Cheesman M (2020) Self-sovreignity for refugees? The contested horizons of digital identity. *Geopolitics* 27: 134–159. https://doi.org/10.1080/14650045.2020.1823836

18. UNHCR (2018) Bridging the identity divide. Is portable user-centric identity management the answer. Available from: https://www.unhcr.org/blogs/bridging-identity-divide-portable-user-centric-identity-management-answer/.

19. ICRW (2016) Reaching refugees survivors of gender-based violence: evaluation of a mobile approach to service delivery in Lebanon. Available from: https://www.icrw.org/wp-content/uploads/2016/10/ICRW-Mobile-Services-Assessment-IRC_4pager.pdf.

20. Allen C (2016) The path to self-sovereign identity. Available from: http://www.lifewithalacrity.com/2016/04/the-path-to-self-soverereign-identity.html.

21. Gorey C (2016) Irish start-up Aid: Tech using blockchain to distribute aid in refugee camps. Available from: https://www.siliconrepublic.com/start-ups/aidtech-refugee-camps-blockchain.

22. Scheel S (2019) *Autonomy of migration? Appropriating mobility within biometric border regimes*. London: Routledge.

23. Arendt-Cassetta L (2021) *From digital promise to frontline practice: new and emerging technologies in humanitarian action*. New York: OCHA.

24. Terranova G (2020) Geopolitics of Covid-19: global challenge at national borders. *AIMS Geosci* 4: 515–524. https://doi.org/10.3934/geosci.2020029