Towards a Decentralize Solution for Copyrights Management in Audiovisual Translation and Media Accessibility

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Abstract. With the development of new technologies in the audiovisual sector, significant changes are taking place in the way information is processed, distributed and accessed. In this regard, blockchain technology is undoubtedly at the epicentre of the technological revolution and, despite its undeniable application in different industries, it seems to remain ignored in some academic fields, particularly in Translation Studies. This technology can be used for various purposes in our field —translating data in blocks, creating a more transparent and secure workflow in the translation process, tracking translation quality— as well as to address copyright issues and to rethink the ways in which we use, reuse, distribute and monetise the content we create.

This paper addresses two key issues in the digital media industry, namely blockchain technology and intellectual property rights management, and presents an intellectual property rights (IPR) management tool developed as part of the MediaVerse project. In addition, we will analyse the results of two focus groups conducted to validate the effectiveness of this tool among audiovisual translators and media accessibility professionals. By exploring these critical issues and demonstrating the benefits of the IPR management tool, we aim to contribute to the ongoing discourse on digital media accessibility and its importance in the current media landscape.

Keywords: Blockchain Technology, Copyright Management, Audiovisual Translation, Media Accessibility

1 Introduction

The media industry has traditionally been characterized by a high degree of centralization. A rather small number of large companies and media platforms have significant control over the market and impose their conditions on consumers, prosumers and content creators [2]. The European Union's Digital Markets Act[1] therefore identifies them as 'gatekeepers' and seeks to ensure that they operate fairly online. The implications of this centralized structure are broad and have shaped the

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022R1925

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media landscape in significant ways. For instance, it has led to the concentration of ownership and editorial control, as well as the standardization of content and formats, which can limit diversity and innovation in the industry. Moreover, it has also raised concerns about the potential for media companies to have a strong influence over public opinion and democratic processes. Hence, there is a need to promote diversity, pluralism, and democratic values within the media industry. This can lead to a more open, transparent, and inclusive media environment. One that reflects the diverse voices and perspectives of society, while meeting the needs and interests of all participants in the digital ecosystem.

The internet has evolved from the read-only Web 1.0 to the interactive Web 2.0, where users generate content and participate in online communities. However, big social media platforms such as Google, Facebook or YouTube dominate the web and control issues such as data privacy, censorship, and user-generated content. The next step is Web 3.0, also known as the decentralized web [10], which emphasizes the importance of ownership in the digital space. In Web 3.0, users have full control over their data and can monetize their online activity without the need for intermediaries.

The digital world is being transformed by the rise of new digital technologies, such as blockchain and Web 3.0 technologies [10]. A world where digital assets (text, video, photos, social media accounts, software programs) are important and valuable. Consequently, digital assets need to be properly stored and well secured. This shift towards decentralization presents new challenges for managing ownership of digital assets, including IPR [1]. Furthermore, the open and collaborative nature of Web 3.0 means that digital assets can be easily shared, used, and reused, which leads to the creation of derivative works that have to be properly managed. There is a need for new models of ownership and licensing enabling content creators to manage their IPR. The MediaVerse project aims at proofing the viability of a platform that offers creators the possibility to manage their digital assets and create or co-create content.

The following article will first describe the main issues related to Blockchain technology and digital assets. Second, IPR within audiovisual translation (AVT) and accessibility services, such as Subtitles for the Deaf and Hard of Hearing (SDH) and audio description (AD) will be addressed. Third the Blockchain technology developed in the MediaVerse platform to manage copyrights will be outlined. And finally, the results gathered from two focus groups with professionals in the AVT and media accessibility field will be reported. The aim of the focus group was to evaluate to which extent the copyright management envisaged under the MediaVerse project addresses the needs of professional in the AVT and media accessibility (MA) field.

2 Audiovisual Industry and Blockchain Technology

The audiovisual industry is facing several issues that entail proper attention as we move towards the future. One of the most significant challenges is the single point of failure that arises due to centralization in the digital industry. It occurs when one part of the system fails, leading to failure of the entire system. Another major concern is the low profits earned by creators, largely due to monopolistic pricing models and the number of intermediaries involved in the process.

Likewise, the management of copyrights and licensing contracts is complex and opaque, leading to a lack of transparency. This makes it challenging for right owners to effectively manage their works online, which often leads to piracy and infringement. The limitations of Digital Right Management (DRM) technologies should also be tackled, as access from other countries is not equally established or can be restricted by licensing, and new forms of payments such as micropayments and pay-per-use content are often not considered.

Furthermore, there is an absence of a global and verified register for intellectual property (IP), and records are stored in diverse systems across the media value chain. To address these issues, it is crucial to develop innovative solutions that increase transparency, reduce intermediaries, and ensure fair return for creators along with a global register to enable easy access to ownership information.

Blockchain technology provides a way to distribute content in a secure and decentralised way, without the need for intermediaries, third-parties. It is a tamper-proof system to store and share data, allowing content creators to distribute their work in their own terms, obtaining recognition (authorship) of the assets they create, regaining control (ownership) from central platforms and keeping track of changes within a chain.

One of the most significant benefits of blockchain technology is its ability to create immutable records of transactions in a transparent way [3]. This allows every node (computer) to trace their content. In the case of copyright works, it means that ownership and usage rights can be securely registered and traced on a blockchain network.

Integrating blockchain technology in IPR management can make it more efficient, cost-effective, and fair for everyone involved. In traditional centralized systems, ownership of digital assets is often managed by centralized entities. By using blockchain technology, content creators and consumers have more direct relationships, and profits can be distributed fairly. Blockchain is one of the technologies behind MediaVerse and its IPR management system.

3 Intellectual Property Rights and Translations

At an international level, there is a broad copyright legal framework in place under which, translations are generally referred to as derivative works. Derivative works are literary and artistic works which are based on pre-existing works that are altered. In addition, Article 2(3) of the Berne Convention provides the following explanation: “Translations, adaptations, arrangements of music and other alterations of a literary or artistic work shall be protected as original works without prejudice to the copyright in the original work”. Therefore, it seems essential to determine how such pre-existing and/or original works are protected under copyright law(s), as such protection could limit their use, and the right to translate and/or to store them in a database.

This copyright legislative framework is aimed at protecting the rights of all authors in the creative industries, to which translators also belong. According to Tong King [8], there is the recursive scaling of authorship in copyright (see Figure 1). As it can be observed, in order to create a translation, authorization must be obtained from the original owner of the rights (tier 1), and in order to exploit any translation (tier 2), the

same applies. Each tier generates new copyrights for new authors, which are interlinked with the pre-existing work and should be traced. This traceability avoids the lack of transparency in tracking who creates the content or derivative works, and helps to raise visibility and awareness of one's own and others' creations.

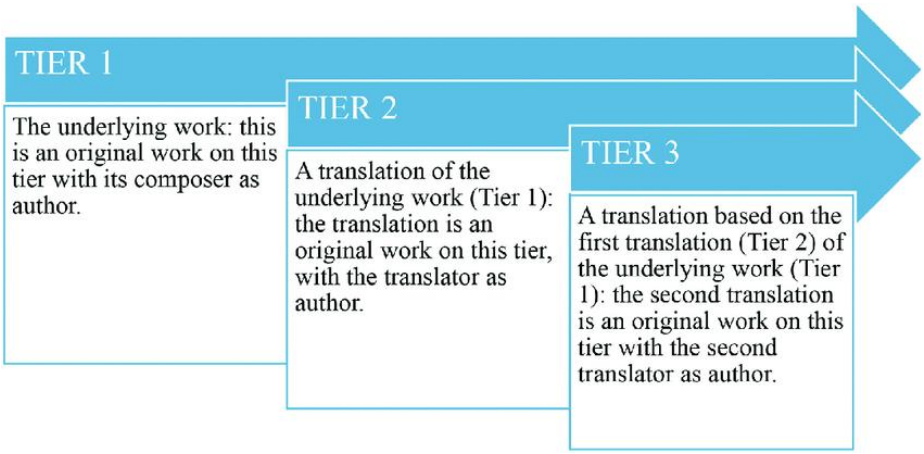

Fig. 1. The recursive scaling of originality/authorship in copyright. Source: Tong King (2020:253).

However, right management can be difficult to trace when a work is created by more than one person [4-6]. In addition, some types of translation, such as the different modalities in the AVT field (i.e. subtitles), might remain in an uncertain field, as there is no international copyright law that protects subtitles worldwide [6]. However, the digital assets that AVT and media accessibility professionals produce have the right to be properly protected.

4 Copyrights Management in AVT and Media Accessibility

Even if there is an international legal framework on copyrights management, each EU country has its own copyright laws, and an agency to manage the rights. For instance, in Spain, the Intellectual Property has been protected by a specific law since 1847 (Literary Property Act) [7]. The current Intellectual Property Law (LPI) by its acronym in Spanish) 1/1996 (BOE-A-1996-8930) has been substantially modified by various laws in order to incorporate the different European Directives in this subject. The last reform was in 2021 in order to transpose the European Directives 2019/789 and 2019/790.

In the specific case of the audiovisual translation modalities, the agency DAMA (Derechos de Autor de Medios Audiovisuales) is in charge of managing the corresponding copyrights rights. This agency is a member of the worldwide agency CISAC (International Confederation of Societies of Authors and Composers) who represent 228 member societies in 119 countries worldwide.

Author´s rights that emanate from Intellectual Property are known as 'copyright'. There are two different types of copyright: moral rights and economic rights. Moral rights are personal, indisputable, and inalienable. Some of these rights exist in perpetuity: for example, the right of the author to be acknowledged and the right to the integrity of works continue forever. Economic rights and rights of exploitation are transferable rights.

Recognition of the authorship and integrity of works are the most important moral rights, together with the right to share this work. Economic rights and rights of exploitation do have time limits. Their duration depends on the legislation in each country (i.e. in Spain, they last for the lifespan of the author and following the death of the same they belong to the inheritors for a further 70 years). On the other side, economic rights and rights of exploitation are transferable rights, which means that they can be sold, ceded or shared with third parties, whether this is for economic purposes or not. Hence, the ownership of rights of exploitation does not always belong to the author, since the latter may have ceded or sold these to a third party or organization, such as an editor or compiler.

Authors may also set their own limits, enabling them to have a greater level of control over the rights of their works and to manage these more easily. This gives both, users and creators, greater access to works and enables them to be used or shared with fewer restrictions. Among the free licenses, there are also some licenses known as 'Copyleft' which are widely used in computer science. These guarantee the right of any individual to use, modify and redistribute a work as long as they share the derivative works that they create under the same, or a similar, license.

The most common free licences are the Creative Commons (CC) licenses. A set of standardized, legal tools that enable creators to share their work with others while retaining certain rights, such as the right to attribution, the right to control how their work is used, or the right to determine whether others can create derivative works from their original work. CC licenses are designed to be flexible and can be customized to suit authors' needs helping to promote legal and ethical sharing and reuse of digital assets in an open ecosystem. They can be applied to any type of creative content and have been integrated as part of the MediaVerse IPR management tool.

5 Copyrights Management in the MediaVerse Platform

In order to address issues related to intellectual property and copyright management in the audiovisual sector, the project MediaVerse[2], which is an H2020 Innovation Project co-financed by the EU, has developed a multimedia co-creation platform. It is an open decentralized platform with strong Intellectual Property (IP) protection that enables creators and media assets owners to create, upload and share their media while managing their intellectual property rights. MediaVerse is a proof of concept project that aims to test the viability of the platform. It gives power back to content creators (artist, audiovisual translators, freelance creators, citizen journalists, all sorts of content creators) being able to take part in the decision-making process when distributing assets and getting recognition (Creative Commons licences) for the content they create. It

[2] https://mediaverse-project.eu/

enables creators to decide how to share, distribute and monetise their content using smart contracts.

The platform includes several innovative technologies and provides a set of tools and services allowing users and creators to navigate in this new digital media industry. It offers co-creation tools where multiple users can work on their projects together including support for immersive media, such as interactive 360° videos and 3D objects; social analytics tools; a decentralised network to share the media; AI supported tools for content analysis to facilitate the process of finding suitable content fragments to build your media, and also to identify inappropriate content to protect your audience, and Automated language translation along other tools to facilitate the creation of accessible media.

The MediaVerse project has identified seven blockchain based solutions that could help content creators to address the main challenges related to copyright management in the audiovisual sector.

- Decentralized digital content ecosystem: power and ownership return to creators.
- New pricing options: new options for creators to earn by selling content.
- Monetization of content: content creators can establish direct relationships with customers.
- Distribution of royalty payments: near real time payments based on smart contracts.
- From DRM (Digital Rights Management) to smart contract: Transparent and "self - execute" right management underlying smart contracts.
- Attribution: Blockchain increases the visibility and availability of the information regarding copyright ownership.
- Copyright management: Blockchain enables content owners to directly manage their works.

The MediaVerse copyright management tool provides a machine-readable format for content creators to handle the legal aspects of copyright. The platform also provides a legal framework to allow storage and registration of assets and smart negotiation of (multimedia) content to manage revenues.

5.1 Testing MediaVerse Copyright Management Tool

MediaVerse aims to validate its copyright management framework among three major use cases: Citizen Journalism; Co-creation of immersive and inclusive media; An artistic experiment under the headline of “Hybrid Intelligence”. This paper focuses on the use of the blockchain technology linked to the second use case “Co-creation of immersive and inclusive media”. More specifically, it is linked to the findings gathered from two focus groups conducted with professionals working in Audiovisual Translation and Media Accessibility fields. The aim of the research was twofold. First, to gain information about audiovisual translation needs and expectations of the MediaVerse platform in relation to rights management of media accessibility assets from a user-centric approach. Second, gather and analyse data from users to understand the existing workflow for production, distribution, and monetisation of digital assets in their fields.

Methodology

This section describes the methodological steps and tools used during the focus groups. In both cases, participants were recruited via e-mail. The choice of recruitment was having experience in the AVT and/or MA fields at a professional level. The focus group duration was agreed with participants as 60 minutes and was held online using Microsoft Teams (Teams, 2022) video conference platform.

The selected methodological tools to gather quantitative and qualitative data from participants were an online questionnaire and a focus group. At the beginning of the session, ethical procedures were strictly followed to ensure compliance with EU existing regulations and codes of conduct. Second, a demographic questionnaire was provided to participants. Third, the focus group was conducted, (details are provided under section 5.1.3). Finally, a satisfaction questionnaire related to the MediaVerse platform was provided to participants. Conclusions gathered form the satisfaction questionnaire and the focus group were validated with all participants.

Demographics

Following the COnsolidated criteria for REporting Qualitative research (COREQ) based on Tong et al. [8] we report the criteria used for demographics. The interviewer and facilitators are the authors of this paper, all females with PhD. In terms of demographics the profile of the participants were nine females and one male. All participants were actively working in different modalities of the AVT and MA fields (Live subtitling, AD, Subtitling for the scenic arts, SDH, AVT), and 5 of them with active teaching duties at BA and MA level in Translation Studies for different Spanish higher education institutions. Six of them hold a PhD and four a MA. Five reported more than 10 years of experience in the AVT and MA fields, two reported 6-10 years, and four reported 3-5 years of experience. All participants reported that their main language combination of work was English into Spanish, and four of them also included English into Catalan. Other reported language combinations were Italian, German, and French into Spanish/Catalan. All participants reported that their work was based in Spain.

Focus Group Procedure

After a short introduction, a theoretical presentation of blockchain technology as part of the MediaVerse platform to manage copyrights was explained through a set of slides in a PowerPoint Presentation. Second, the list of the possible blockchain-based solutions was also presented. Third, a discussion among participants was conducted by the facilitator and a designated note taker was responsible for taking notes. The discussion was structured around the following three questions:

1. Do you think that the MediaVerse platform could be used in the audiovisual translation field? Does it have any advantage compared to the current way of managing the different modalities of the AVT field?
2. Within the frame of accessibility and audiovisual translation files (i.e, media accessibility assets) rights management, authors have the moral right over the assets

they create. This can never be sold. Thus, assets should be somehow minted for moral ownership. Do you agree?

3. Should authors be able to establish the economic rights and rights of exploitation?

At the end of the focus group, extracted conclusions were gathered and validated by all participants. Participants were also invited to answer an evaluation questionnaire in relation to: the use of MediaVerse in their professional and teaching contexts, and the level of relevance of the proposed possible blockchain-based solutions in the AVT and MA fields.

Extracted Conclusions and Results

The replies to the three questions are outlined below, along with the results of the satisfaction questionnaire.

Question 1: Do you think that the MediaVerse platform could be used in the audiovisual translation field? Does it have any advantage compared to the current way of managing the different modalities of the AVT field?

All participants consider that the MediaVerse platform could be useful in the professional domain of audiovisual translation and media accessibility, although its use will depend on the type of content. While in the AVT field, most participants manage their copyrights through DAMA, in the MA field copyrights remain in an uncertain area and are not subjected to copyrights. One of the main problems in both cases is that authors cannot trace what use is made of their work (i.e. subtitles, audio description, etc.) once they deliver it, for instance in another country/territory). In this regard, the platform would be useful to track the further use of their work in other countries/territories or even in other platforms. In the specific case of film festivals, most of the time AVT professionals receive support materials (i.e. subtitling templates) but do not know its origin (i.e. author). In addition, once they deliver their work (i.e. subtitles), they are unaware of its possible further use. All participants state that they work in the context of Spain, with the Spanish language as their target language, so they are unaware about the use of their work in other countries/territories or platforms. One participant states that the agencies/clients she works with manage copyrights themselves, sometimes through specific platforms.

In the specific case of MA one participant points out that in live subtitling, the work is done in the abstract, and there are various people involved in the subtitling process, making it difficult to assign copyright to specific individuals for this specific modality. The participant asserts that translation agencies keep the exploitation rights. In live subtitling, when programs are long, subtitling is done by several subtitlers because they have to take turns. Likewise, in contexts such as television, the company that provides the subtitling service is often external to the media, so the question arises: to whom do the rights belong, to the company that provides the services or to the television that commissions the work? Finally, a participant points out that the platform would be useful for sharing audio descriptions, as copyright in this modality is in a gray area.

Question 2: Within the frame of accessibility and audiovisual translation files (i.e, media accessibility assets) rights management, authors have the moral right over the assets they create. This can never be sold. Thus, assets should be somehow minted for moral ownership. Do you agree?

All participants agree on the preservation of moral property rights. This is a particularly important issue for participants who work with modalities derived from media accessibility services, since "services such as audio description or subtitles for the deaf and hard of hearing are not considered to be original work worth right protection according to copyright laws" (Orero et. al 2023:10).

Participants also note that there has been a lot of progress in recognizing moral rights in recent years, thanks to the efforts of professional associations in the industry. One participant brings up the issue of automatic translation and moral ownership, asking how rights are recognized in cases of automatic subtitling and who owns the work in such situations. This question is becoming a concern and a priority in the European Agenda, also due to the increasing use of Artificial Intelligence (AI) tools, such as Chat GPT, and its effect on copyright rules[3].

Question 3: Should authors be able to establish the economic rights and rights of exploitation?

All participants consider that this is a complex issue, because in many cases economic rights and conditions are reflected in previous signed agreements. However, all agree that authors should be able to participate in the negotiations to establish the conditions of exploitation of their works.

One participant points out that live subtitling is very ephemeral, but rights should be exploited, since many times the subtitles generated live are edited or used for later reruns (mainly in the television context). In the case of recorded conferences, the initial subtitles are also later edited, but exploitation rights are not established.

Another participant mentions that there is an increase in the translation of audio descriptions, and it is necessary for professionals in this field to register the corresponding rights. In this regard, another participant emphasizes the importance of professionals' involvement in the negotiation processes for the management of exploitation/distribution rights to prevent this accessibility service from being centralized solely through an entity (e.g., ONCE, a Spanish public-law corporation created to provide services for people with visual disabilities)[4] and restricted to users of this organization.

In the case of audio descriptions and subtitling for performing arts, this recognition may have a short life span, since productions are punctual/limited and subject to modifications.

In the evaluation questionnaire, participants were asked to share their opinions on the advantages and disadvantages of the MediaVerse platform and which blockchain solutions they thought would be most relevant for professional translators.

[3] https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/intellectual-property-chatgpt-2023-02-20_en

[4] https://www.once.es/

Participants reported the following advantages: potential use for copyright recognition and distribution of accessible content, an intuitive platform, ease of sharing content, and the ability to track assets. However, they also pointed out some disadvantages, such as the fact that copyright is sometimes a gray area in the translation field, the early development stage of the platform, the challenge of recruiting a broad group of users, and the complexity of professional relationships with companies in the field.

Regarding the proposed set of blockchain-based solutions, participants reported that the most relevant were a decentralized digital content ecosystem, attribution, and copyright management.

Limitations of the Study

The findings of this study have to be seen in light of some potential limitations that could be addressed in future research. First, the study is focused on the Spanish context, considering only AVT and MA professionals working in this country. Including a wider number of countries could prove to be important not only to validate the proposed MediaVerse blockchain-solutions for copyright management in the AVT and MA fields, but also to improve an exchange of good practice among professionals in both fields. The second limitation could be considered in terms of gender bias, as nine out of ten participants recognized themselves as females. It could be argued that contrary to other fields of the audiovisual industry, professionals in the AVT and MA fields are mainly females. Still, future research related to copyright management should include a broader gender representation in the sample of participants, not only from a binary perspective (i.e. male and female), but also in terms of non-binary participants.

6 Conclusions

To effectively foster diversity, pluralism, and democratic values within the media industry and the constant evolution of the Web, a new approach to content management is required. In the context of Web 3.0, MediaVerse could provide a standardized framework for managing ownership and licensing of digital assets, which can help to promote legal and ethical sharing and reuse of digital assets in a decentralized and open environment. The use of blockchain ensures that all transactions and ownership records are tamper-proof and cannot be altered.

To sum up, as it has been explained along the article, blockchain technology can transform the way in which media content creators manage and share the intellectual property rights of their digital assets. This technology has been included as part of the MediaVerse platform in order to allow content owners assigning copyrights and tracking the data they generate in a secure and transparent network, such as the transactions/interactions between peers. Professionals in the AVT field are content creators, and their works (i.e. subtitles) are considered derivative works, therefore authors of these digital assets have the right to be protected under copyright. On the other side, the work of professionals in the MA field remain in an uneven field as their work is not equally protected in all countries. For instance, while in France AD are subjected to copyrights, this is not the case in Spain.

With the aim of testing the suitability of the blockchain based solutions proposed under the MediaVerse platform, a focus group with professionals from the AVT and MA field was held. As reported in the extracted conclusions, participants agree on the potential use of the platform for copyright recognition, attribution and distribution of accessible content, and describe it as an intuitive platform, where creators and consumers can easily share content and can track their digital assets.

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