The Empowerment of Blockchain Technology to Traditional Joint Action

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Abstract. Due to the transparency and distributed ledger technology that blockchain can provide, large-scale information collection and sharing becomes possible. In traditional joint lawsuits, regardless of the area of law involved, there is the problem of how to collect the consequences of damages and how to distribute them to large groups of people. Blockchain offers possible solutions to this problem. The open and transparent recording capability on the blockchain and the automatic execution capability of smart contracts can significantly improve the efficiency of traditional joint action. The essence of blockchain-enabled joint action is the integration of disadvantaged individuals into one large individual with a relatively unified mind and will to improve the position of the disadvantaged. Blockchain’s ability therefore effectively creates a decentralisation in joint action, i.e., the aggregation of a large number of dispersed individuals into a collective legal will. Blockchain can help to erase the status differences in traditional joint action.

1 INTRODUCTION

In late 2022, some lawyers in the US began using blockchain as a way to gather evidence in mass claims cases - a large group of people wanted to initiate arbitration against PayPal and Amazon.. This matter seems to ring the bell of a new era - blockchain is demonstrating its subversive potential for the traditional joint action model.

1.1 Research Background and Object

Traditional research combining blockchain and legal proceedings has focused on the storage and authenticity of evidence [1]. Through the distributed ledger technology and transparency of blockchain, any fixed and stored evidence is theoretically immutable [2].

However, in reality, this research only focuses on some of the functions of blockchain in litigation activities, and the application potential of blockchain and its derivative technologies (such as DAO) far exceeds this. Most importantly, the application of blockchain technology in evidence preservation has only utilized its instrumental nature, without delving into the value level of this technology. A deeper level of value discussion may make the application of blockchain technology in litigation more effective and prosperous.

Therefore, this paper seeks to build on the above and further explore the potential of blockchain in joint action, i.e., the power of gathering a large number of vulnerable individuals to fight against each other. This form of expression, based on the collection of evidence, breaks the limits of a discussion solely from a procedural perspective and instead delves into a reconfiguration of the traditional litigation model. In other words, the blockchain can be used for much more than simple evidence gathering.

1.2 Argumentation Basis and Sequence

The joint action in this paper refers to litigation with a large number of parties. This form may belong to any legal field, such as environmental litigation where there are many victims as a result of environmental pollution [3]. As the discussion in this article does not deal with the differences between the different areas of law, but focuses only on the form of joint action, no further detailed distinction will be made.

The order of discussion in this paper is essentially from problem identification to problem-solving. That is to say, this article first points out the difficulties faced by traditional joint action, then corresponds to the advantages of blockchain technology, and finally identifies how traditional forms of joint action can be reinvented.

The contribution of this paper is to explore the possibilities of litigation under the blockchain through a forward-looking perspective in order to break through the limitations of most traditional studies that focus only on evidence collection.

It is worth mentioning that due to the interdisciplinary nature of current legal research in this area and the lack of sufficient academic accumulation, this article will partly refer to research in other areas of law.
2 THE DILEMMA OF TRADITIONAL JOINT ACTION

The purpose of this part is to identify problems, that is, problems in traditional joint action. By addressing these problems, we can improve the efficiency and quality of litigation and thus achieve better justice.

2.1 Dispersion of Damaged Interests

The first problem faced by traditional joint action is the dispersion of the interests of victims [4]. Although there is a clear number of shareholders in corporate bankruptcy proceedings, most joint lawsuits involve a large number of victims and scattered interests. Especially in environmental litigation, it is not economically worthwhile for any individual to file a lawsuit independently, but in terms of quantity, the benefits abandoned are enormous. This situation further leads to the impure nature of environmental litigation[3]: the dispersion of interests leads to the opacity of information, making it possible for environmental litigation to be supported by certain stakeholders and exist as a way to combat competitors. After all, environmental litigation without blockchain can become a tool for companies to engage in unfair competition, with a large amount of damage dispersed and opaque.

Prior to the advent of blockchain, these decentralised proceeds were collected through traditional media broadcast models that were both complex and time-consuming. This situation further increases the cost of joint action, requiring the organizers of joint action to spend a significant amount of time and effort collecting information about the affected parties.

The dispersion of damaged interests, as well as the opacity and high costs it brings, hinder the effectiveness of joint action.

2.2 Cost of Evidence Collection

The second aspect is based on the collection of decentralised benefits. Especially in the internet era, victims of large-scale lawsuits may be spread around the world, resulting in higher spatial costs of collecting evidence [5]; On the other hand, there may also be fraud in the collection of evidence due to the lack of sufficiently open, transparent and time-sensitive means of obtaining evidence. Not to mention, for example, the different forms of damage suffered by victims in environmental litigation, inconsistent evidence and high costs of verification.

This raises the issue of the cost of evidence collection, which includes both time and space costs. In particular, how much evidence is verified and how much of the truth is reflected in that evidence, given the lack of transparency, are issues that require costly verification.

Before the era of blockchain, due to the difficulty of evidence collection and preservation, many of the harmed interests in joint action could not be fully reflected in the amount of litigation. In addition, from the perspective of cost-benefit analysis, collecting some subtle evidence may mean paying a much greater cost than the benefits represented by this evidence.

This further leads to the inability of the joint action to fully realize its original purpose, resulting in the inability to compensate for the damaged interests.

2.3 Difficulties in Enforcement and Benefit Distribution

After the plaintiff has struggled to resolve the above issues and ultimately won the case, the distribution and enforcement of the award becomes another challenge [5]. Traditional methods of recording and transferring funds are time-consuming and labour-intensive, especially when transfers are made across borders and between banks. In addition, if a lawsuit is conducted in the form of an agent, such as an environmental group in an environmental lawsuit, how can one ensure that the compensation obtained goes to those who need it most?

In theory, enough time and effort could be spent solving all these problems, but this answer is not yet satisfactory. After all, in practice, spending a huge amount of time and effort on transfer processing will incur new costs, and the allocation of these costs will lead to new disputes. The existence of these problems means that there is still room for improvement in traditional joint action. At this time, the widespread application and development of blockchain technology seem to reveal some possibilities.

3 THE DAWN BROUGHT BY BLOCKCHAIN

The development and application of blockchain seem to imply the possibility of answers to the above questions. Therefore, this part explores the potential of blockchain to influence and improve traditional joint action.

3.1 Transparency and Convenience of Distributed Ledgers

Blockchain technology is a distributed ledger based on cryptography [2]. Each user can store information through their own account and after verification this storage can be synchronised to any user's terminal. The interior of a blockchain allows for mutual transparency between all users. In such an open and transparent environment, without regard to latency and the sheer volume of information, each person could, in theory, quickly and comprehensively understand the information of others and make their own responses. Although it still takes a while to confirm and verify when confronted with large amounts of information, this is a significant improvement over the traditional verification of evidence in joint action.

One of the problems faced by traditional joint action is how to determine the amount of compensation for each victim and how to prove that their losses are certified. The transparency and convenience of the blockchain can therefore provide a solution to this problem, based on existing research into evidence storage on the blockchain.
3.2 Deep Logic: The Formation of Collective Power

The existing research on blockchain in litigation mainly focuses on the contribution of blockchain to evidence collection. The logic behind this perspective is to solidify the content of a certain time node through the blockchain. But this logic is far from enough. Just as cryptocurrencies based on the blockchain can be calculated in their total market value, this paper further argues that the deeper logic of blockchain lies in the aggregation of a large number of decentralised entities into a collective force. After the interests of each user are interconnected [2], they become a large new set of interests. Therefore, some users may hold a negligible amount of Bitcoin, but when analysing and considering the Bitcoin market as a whole, it is the tens of millions of insignificant users that make up such a huge market.

Therefore, this is the blockchain’s power to achieve centralisation through decentralisation. Cryptocurrency or tokens constitutes an identity symbol and everyone who holds that credential is considered part of the collective. Perhaps in reality, they are located around the world, but on the internet, this is a force to be reckoned with. This logic has the potential to subvert joint action to some extent.

In this joint-action application scenario, individuals on the blockchain gather together for common reasons and only communicate with limited content, such as sharing information about the litigation itself. This reduces the cost of communication for a large number of individuals, making it easier for them to reach a consensus. Consensus is where the power of blockchain lies. This consensus can be abstractly seen as a collective will, a group behaviour that responds to powerful individuals such as large companies or governments in specific scenarios.

To be more specific, consensus condenses dispersed individuals in time and space into a new individual, which can be on a more equal footing with the other party to the lawsuit - large companies, large governments - in terms of scale, which will also drive the lawsuit towards a more legal direction. After all, if only a few individuals gather for joint action under the premise of information opacity, the other party to the lawsuit can completely achieve the effect of disrupting the lawsuit by lobbying some of them.

But this behaviour can be largely avoided with the help of blockchain. With two-way transparency and rapid information transmission, individuals on the blockchain have a way to seek help from others in a timely manner, and on the other hand, they can supervise each other to prevent certain individuals from being bribed by the other party in litigation, thereby strengthening the unity of the entire group as a whole.

This is also the main point that this paper aims to propose, that individuals in joint action can form a new collective will - a new, powerful individual - through consensus mechanisms with the help of blockchain. This new individual can stand on the same level as the other party in the lawsuit, be fearless of threats outside the court, demonstrate the collective will, and then push the lawsuit itself towards a more legal and rational path.

3.3 Efficiency of Smart Contracts

A smart contract is a series of codes or programs built on blockchain technology that can be executed automatically under certain conditions [6]. Although it does not have the same complex terms as a traditional contract, it implements a degree of code rules through code and focuses on the key execution aspects. It is faster and more efficient at transferring funds than manual work.

For example, the parties developing the smart contract can agree that it will be executed automatically when certain preconditions are met. Especially in a one-to-many situation, the difficulty of allocating large amounts of money to each individual in a fair, proportional, accurate and timely manner is a difficult problem for traditional joint action to solve and a space where smart contracts can be useful.

Based on the above analysis, the advantages of blockchain technology closely correspond to the problems that exist in joint action. This means that the application of blockchain technology holds promise and scope in the field of joint action. Therefore, this paper further argues for possible forms of such combinations.

4 BLOCKCHAIN AND JOINT ACTION

While traditional joint actions face the problems of fragmented interests, high evidentiary costs and complex distribution of compensation, the possibilities offered by blockchain technology offer an almost identical solution. This transformation is achieved through a change in logic: from seeing the blockchain only as a way to confirm evidence to seeing it as decentralised and centralised.

4.1 Safeguarding Interests with Collective Will

As with the examples mentioned above, the loss of Bitcoin users may not be surprising, but it would be very noticeable if there was a major upheaval in the Bitcoin market as a whole. Similarly, perhaps the damage caused by environmental damage may seem unreasonable to individuals, even if, after weighing their interests, individuals decide not to expend much effort suing. However, when everyone aggregates through the blockchain, a huge collective is formed.

This is one of the points that this paper wants to emphasize: by gathering scattered individuals across regions, the scattered interests form a huge new individual that can be placed in close proximity to another party in a joint action. In this way, it is possible for everyone’s interests to be protected, however slightly, rather than deciding to give up because the damaged interest is too small.

From the perspective of cost-benefit analysis, the application of blockchain will change the balancing of the interests of every individual with compromised interests. The total cost of litigation will no longer be borne by the individual filing the lawsuit but will be shared by the entire collective, and even a more reasonable cost-sharing
mechanism can be developed: multiple individuals with greater damage to their interests can bear the cost. Because after winning the lawsuit, the benefits they gain are correspondingly greater.

This safeguard mechanism will reduce withdrawal behaviour in joint action, making a large number of marginalized individuals willing to participate. Although each marginal individual represents fewer interests, when the number is large enough, the overall interests represented by these individuals are no longer marginalized.

4.2 Publicity and Credibility

Publicity and transparency often mean credibility. Therefore, the transparency improvements that blockchain technology can bring are seen as a means to address trust issues in the legal field that arise due to a lack of transparency [7]. In a traditional joint action, traditional communication methods are not smooth and information updates can be delayed due to the large number of people involved, which can lead to some unfairness, such as whether the agent is really representing the interests of all victims or some kind of political will against them [3]. The application of blockchain can significantly reduce the existence of this situation. Although there are still some time gaps in information updates, they are far more efficient than those of traditional joint action.

What’s more, all victims can upload evidence of their own losses, and all users can also see the evidence uploaded by others. The emergence of this decentralisation can, on the one hand, improve the reliability of evidence, and on the other hand, improve the quality of litigation in such mutual supervision.

The credibility of evidence extends from inside the blockchain to the outside. With the gradual reduction of barriers to information exchange, joint action will be seen more as a legal tool and not just a political one [3]. In other words, increasing the credibility of evidence in joint actions through the blockchain will further entrench the legal nature of joint actions.

4.3 Automation of Execution

The automatic execution of smart contracts is another benefit that blockchain can bring to joint action. Especially in cases where there is a proxy action or joint actions in the public interest, the question of how to make the compensation actually flow to those who have suffered damages and need it has been difficult to resolve in the past. In a past joint action, there was still an intermediary between those whose interests were genuinely damaged and the compensation awarded following a judicial decision, which created the possibility of misappropriation or transfer of property by taking advantage of information asymmetries.

One of the possibilities that smart contracts on the blockchain can bring is the automatic allocation of compensation after winning a lawsuit for all registered victims. When a group of victims receive compensation from each other in a lawsuit through the blockchain and smart contracts, these financial benefits are transferred directly to all users on the blockchain without hindrance [6]. The successful outcome of a lawsuit will not be truly realised until automated technology replaces humans and joint action can fully realise its meaning.

It follows that the application of blockchain can have an impact on joint action. It can be seen that the application of blockchain can have an impact on joint action. Although this impact has not yet occurred, it is theoretically and logically reasonable. Joint action can also play a more thorough and comprehensive role in protecting the interests of the vulnerable.

5 CONCLUSION

This paper focuses on the impact of blockchain on traditional forms of joint action, i.e., how blockchain makes joint action better. By fusing and aggregating the interests of dispersed individuals, decentralisation creates a degree of centralisation, giving rise to a new, powerful individual. This has turned joint action into a new type of one-on-one litigation that is more conducive to protecting the interests of all vulnerable individuals. Through decentralized centralization, every individual has the opportunity to receive attention and protection, and people will have more courage to participate in it to fight against injustice.

Furthermore, in a collective consisting of a blockchain, the evidence of loss outcomes uploaded by all individuals is transparent and verifiable. Moreover, the convenience of smart contracts in determining the amount of compensation allows each individual to receive timely and accurate compensation based on a sliding scale.

At the end of this paper, a new possibility emerges: will the standing of organisations acting as agents, such as environmental organisations in environmental litigation, disappear when the blockchain empowers individuals in joint actions? This is reserved for future research and exploration.

REFERENCES