SCHELLENBERG
WITTMER

JUNE 2017

Newsletter

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TOP LAW FIRM
2017

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DISPUTE RESOLUTION

Disputes in the context of blockchain applications

Blockchain applications and dispute resolution: what if the "perfect system" results in conflict after all? Who can take action against whom – and how? The third newsletter of our blockchain series discusses questions with regard to the resolution of blockchain disputes and potential solutions.

1 INTRODUCTION

1.1 BLOCKCHAIN AND CONFLICT POTENTIAL

Our Newsletter "Blockchain – Myths, Facts and Legal Issues" (May 2017) explained the functionality and key terms of the blockchain technology. In particular, it explained that in reality blockchain applications cannot fully meet the "infallibility expectations". Therefore, this newsletter addresses questions arising out of the **resolution of blockchain disputes**, for example due to manipulations, incorrect data or defects in the objects which are to be transferred through the blockchain application.

1.2 1.2 FUNCTIONALITY AND CHARACTERISTICS

As a basic technology, the blockchain technology allows the development of different types of applications, from relatively simple transactions (buy/sell) via crypto currencies (Bitcoin) to more complex processes such as

insurance and reinsurance operations. While crypto currencies already exist, a large number of further innovative applications are in the process of being developed.

The marketers of the blockchain technology describe blockchain transactions as a "perfect system" that inherently excludes any possibility of conflicts and disputes. But the reality is somewhat different (cf. the Newsletter of May 2017). With transactions – whether "on-chain" (i.e. processed via blockchain) or "off-chain" – disputes will always subsist.

It is true that blockchain applications can minimize the risk of manipulation, falsification and fraud in transactions. **Errors, ambiguity and contradictions** will, however, remain inevitable (this became particularly obvious with the

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Ethereum "theft", where a user withdrew over USD 50 million by taking advantage of a weakness in the system, cf. our Newsletter of May 2017). Therefore, there is a need for a dispute settlement mechanism for resolving conflicts arising from block chain applications.

How exactly such conflicts can be resolved and claims enforced is still **largely unsettled** and the users of this technology will be confronted with new types of challenges.

1.3 EXAMPLE
As an example, one might imagine a blockchain application for the processing of **insurance cases regarding hail damages**. On the basis of externally provided weather data, farmers participating in the blockchain application would automatically ("self-executing") receive insurance payments from a participating insurance for hail damages of a certain (pre-defined) severity in their growing area. This data would be provided from a data supplier (i.e. a weather station), which in the blockchain terminology is often referred to as "*Oracle*".

In the following, several legal questions that arise in the context of the resolution of blockchain disputes shall be examined using this example.

> "The need for a dispute settlement mechanism remains, also in the context of blockchain applications."

2 LEGAL RELATIONSSHIPS IN THE BLOCKCHAIN
2.1 STARTING POINT
Before a dispute can be resolved, it needs to be established who might take action, on what grounds, and against whom.

2.2 INVOLVED PARTIES AND CONTRACTUAL RELATIONSSHIPS
The great diversity of possibilities to design blockchain applications results in a **variety of parties potentially involved** in a blockchain. In our example, these are the participants in the blockchain, i.e. the farmers as policyholders on the one hand and the insurance company as insurer on the other hand. Moreover, the provider (developer) and the operator of the underlying blockchain application, as well as the external (weather) data supplier are involved in the transaction. Finally, supervisory authorities who are to examine certain operations before their execution may also be involved (e.g. an insurance intermediary who acted as a broker of the insurance company towards the farmers).

This large number of potential parties involved is reflected in the number of potential **contractual relationships**. There is a contractual relationship between the participants in the blockchain who are involved in a certain transaction (in our example the policy holder and the insurance company). There is also a contractual relationship between the individual participants and the operator (potentially also the developer) of an application. Finally, contractual relationships may also result with external data suppliers and supervisory authorities, which are not directly involved in the execution of a transaction, but substantially contribute to it.

2.3 NON-CONTRACTUAL RELATIONSHIPS
Besides contractual relationships, it is possible that **non-contractual relationships** may give rise to claims, e.g. if a participant obtains advantages to the detriment of other participants, be it through unlawful, reckless or self-optimizing actions.

Further, the delivery of faulty data may expose a provider of data to risks of liability. In our example, this would be the case if for instance the weather station feeds incorrect underlying data into the blockchain application, be it due to human or technical error. Such an error could lead to payments by the insurance company to the farmers without there actually being a coverage claim, which might result in liability for damages.

3 PROBLEM AREAS AND LEGAL ISSUES
3.1 STARTING POINT
Independent from the dispute settlement mechanism, there is a **series of new issues** which may arise in the context of blockchain disputes. For purposes of an overview, we have identified in the following three problem areas and their related legal issues.

3.2 APPLICABLE LAW
Blockchain applications enable the **conclusion of business transactions independently from the physical whereabouts of the involved parties**. For instance, it is possible that the farmers acting as policy holders cultivate their land in various jurisdictions, the blockchain operator is domiciled in a third country with low taxes, whilst the data supplier is domiciled in yet another jurisdiction.

As is the case with any cross-border transaction, there is the question as to the **applicable law**. This issue gives rise to considerable concerns, e.g. due to

> the anonymity of the participants;

> the decentralised storage of the blockchain applications on different computers worldwide;

> the unspecified types of values exchanged via blockchain (e.g. are these "goods" in the sense of the United Nations Convention on Contracts for the International Sale of Goods?)

The most pragmatic solution to this issue consists in the determination of the applicable law **in the run-up to the blockchain transaction**, bearing in mind the need to comply with any applicable (formal) requirements. For this purpose, blockchain providers might introduce a choice of law clause in a kind of "**Blockchain-General Terms & Conditions**", in which the general terms of participation are stipulated.

3.3 CORPORATE LAW ISSUES
Blockchain applications may also enable their participants **to pursue a common goal**. An example often referred to in this context is the use of energy: energy bought at a low price but not needed by the buyer is transferred to another participant (e.g. in the house next door) through blockchain transactions. Or farmers, instead of entering into individual contracts for hail insurance, might establish a "fund" organized as a cooperative. In such cases, the interests of the participants are less focused on direct exchange rather than on the achievement of a common goal by combining their resources.

Depending on what form the respective blockchain application takes on, such constellations may give rise to **complex corporate law issues**, including issues of applicable law, membership or shareholders' rights, or liability. Furthermore, in relation to dispute settlement, difficulties with regard to the jurisdiction of courts (where is the "seat" of the company?) as well as issues in connection with the appropriate/permitted dispute settlement mechanism for corporate disputes may arise in the context of "corporate" blockchain issues.

3.4 LEGAL COSTRAINTS

In certain fields, **requirements provided for by contract law** such as formal requirements (e.g. requirement of legalization by a notary public) as well as requirements regarding consumer or data protection and regulatory requirements have to be complied with (for the latter cf. our Newsletter of April 2017). The aforementioned case relating to hail insurance may for instance – particularly in an international context – give rise to several issues with regard to written form requirement and issues with regard to consumer protection or regulatory law.

The problem of contracutal constraints is further complicated by the fact that it is not always easy to differentiate between consumer and provider in case of blockchain applications. A participant may rather simultaneously be a provider (e.g. as a decentralized Co-operator of the blockchain application) and a consumer.

> "Dispute settlement by an arbitral tribunal not only requires legal but also technical precautions."

4   DISPUTE SETTLEMENT AND ENFORCEMENT
4.1 STATE COURT OR ARBITRATION

As in connection with any other dispute, the issue of the most appropriate dispute settlement mechanism arises also in the context of blockchain disputes. In the absence of an agreement among the parties stating otherwise, blockchain disputes are settled before **state courts**. However, in the context of disputes with regard to blockchain applications, state courts face nearly insoluble problems: Which court has jurisdiction? How can jurisdiction be determined if the participants to blockchain remain anonymous? How can a state court rule within a period of time that ensures that the decision is not completely deprived of its purpose in the setting of a rapidly proceeding blockchain application? Do state courts have the required technological expertise to resolve blockchain disputes?

By **providing for arbitration** to resolve blockchain disputes, these problems can be quite elegantly circumvented. Therefore, the best dispute settlement mechanism in view of obtaining a binding and enforceable award relating to blockchain disputes within a reasonable period of time is arbitration. Furthermore, arbitral proceedings can be tailored individually to the needs and particularities of blockchain applications.

4.2 CONDITIONS FOR ARBITRATION IN THE CONTEXT OF BLOCKCHAIN APPLICATIONS

Due to the automatic and generally irreversible execution of blockchain transactions, a number of conditions have to be met to allow for arbitration. First, "legal" requirements including the existence a (formally) valid arbitration agreement in the "Blockchain GTC" must be met. This requirement may give rise to further difficulties in the context of blockchain applications. Furthermore, certain **technical measures** with regard to the blockchain application itself have to be taken.

Specifically, the blockchain application should contain technical mechanisms, allowing for the **possibility of intervention** in case of a disputed processing step. An example might be a "possibility of appeal" granted to the involved participants for a certain period of time, allowing for a delay of the automatic processing of a disputed transaction until, by human intervention (the arbitral award), the situation has been clarified (Keywords: *Time Lag, Roll Back, Hard Fork*, etc.).

In other words, the blockchain needs to "*ex ante*" provide not only for the means that allow a participant to call upon an arbitral tribunal in the first place, but also for the means to ensure actual enforcement of an arbitral award with regard to a blockchain application. Otherwise the enforcement of justified claims would hardly be possible in the context of blockchain applications.

5   CONCLUSION

Arbitration appears to be the best solution for resolving disputes in the context of blockchain transactions. The dispute settlement mechanism needs to be provided for at the outset, technically in the blockchain application and legally in a corresponding agreement (e.g. in "Blockchain GTC").

In this regard – especially in international or anonymous blockchain applications – the wording and conclusion of the respective arbitration clauses will be of great importance. Furthermore, the organization of the arbitral procedure will be crucial and will need to be adapted to the particularities and technical requirements of the blockchain application in question.

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The content of this Newsletter does not constitute legal or tax advice and may not be relied upon as such. Should you seek advice with regard to your specific circumstances, please contact your Schellenberg Wittmer liaison or any of the following persons:

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