THE DIFFICULT APPREHENSION OF BLOCKCHAINS BY LAW

The recent proliferation of blockchain projects is a sign of the maturity of this technology and the awareness of its considerable stakes by economic actors. The issues raised over the past ten years by bitcoins were primarily economic and monetary policy issues, including who can mint coins. Today, questions are multiplying and going beyond the economic and state sphere. The advantages are numerous: automation of procedures, security and timestamping of data.

The first function of a blockchain is to preserve the data (record keeping) and to secure them. This data retention allows traceability of data and assets. Thus, in terms of transportation and logistics, it helps to know where the goods were produced, stuffed, loaded, unloaded. In health, this would help to know the origin of the drugs shipped. This would result, de facto, in certifying the origin of the goods. The sectors that can benefit from these benefits are unlimited.

Another function of the blockchains, automation, allows a fluidity in the management processes generating a significant saving of time and a saving of money which can be considerable. The example of maritime transport provides the indisputable proof. The timestamp of the data entered on a blockchain is often put forward to boast the advantages. Indeed, particularly in the field of intellectual and industrial protection, this function makes it possible to provide proof of the primacy of a work. It is necessary, however, to distinguish industrial property and intellectual property whose legal regimes are not identical. It is therefore necessary to distinguish the contribution of the timestamp to each of these properties. In addition, is timestamping a permissible evidence before the Courts? The question arises and clarification needs to be made.

The advantages of blockchains, both economic and legal, are therefore numerous. However, questions remain unresolved. Originally, blockchains were not intended to store and exchange

personal data. However, their evolution and the evolution of the law make the situation more complex. These data, protected by the pseudonym, are updated by legislation which, in the context of the fight against cybercrime (Titanium Project), calls into question this pseudonym. Thus, today, blockchains can exchange personal data that are no longer protected by pseudonymity. What about their protection? There is therefore conflict between blockchains and personal data protection laws, such as the GDPR Regulation (General Data Protection Regulation) from the EU. How to resolve this conflict?

Another question which is very often asked: will the automation of blockchains cause the disappearance of trusted third parties? This trusted third party who is an intermediary would disappear, or at least see his role drastically reduced; If a blockchain makes it possible to register a sale between two private individuals, why not use it in the case of a real estate sale? The transaction will be secure, covered by the pseudonym and dated. Are services provided by a notary still necessary?

Blockchains have also brought up the notion of smart contract. What about their legal qualification and their effects? The proximity of the reasoning methods of lawyers and computer scientists may have suggested that these smart contracts were contracts in the legal sense of the term. However, if they codify contractual clauses, they can not be qualified as contracts. In addition, a smart contract does not take into account the notion of good faith that exists in the law of obligations and is of public order. From then on, it will be necessary to evolve these "digitized contracts" so that they integrate the peculiarities of the law of the contracts. So many questions that deserve, if not to have an answer, at least to be nuanced.

I. *Economics and Legal advantages of blockchains*

A) Automated and secure exchange of stored data

B)   The time time stamp or the question of evidence

II.   *Outstanding Legal Issues*

A)   A real disintermediation ?

B)   Smart contracts : real contracts ?

C)   The difficult protection of personnal data