What should we do (or not do) with the land administration data?

Preliminary remarks

A right can only be exercised if it is guaranteed. However, on the subject of today's concern, most countries without a reliable system of land ownership, whether for lack of resources, endemic corruption, or inefficient solutions proposed, offers no guarantee as to ownership.

Therefore, the exercise of the right of property is not absolute: it results most often in a lack of development of lands.

The relationship between law and economy finds there its full expression.

The Blockchain could revolutionize the access to property and allow the economic development of these countries. It promises to bring about a profound change in the practices of the economy, as long as the law is intelligently adjusted. The legal system can be used here as a real lever to allow the economy to efficiently draw on this technology.

It is the ideal infrastructure of the contract and, hence, of any transaction between two parties in our economic-financial system, requiring to be solved by a contract (such as a purchase or a sale, a lease, a service contract or a more complex transaction), evidenced towards third parties, institutionalized or preserved in a sustainable manner, such as land titles, for example.

As part of the application of the Blockchain to the land registry system, the individualization of the land precedes its privatization, which ensures its commodification.

By proposing a tamper-proof solution, Blockchain could just allow states to establish a guarantee of ownership, free from corruption or embezzlement.

The passage through an identification through a cadastral register system would then be a necessary preliminary to the more complex elaboration of a land register system: the cadastral register would realize the individualization of the land, and the land register would ensure its commodification, after privatization of the land.

The property right being then guaranteed, merchandising could start, thus activating a property that has been too long underused and devalued. Countries like Ghana have already bet on Blockchain.

As for countries already industrialized and having a reliable and uncorrupted land system, it is the whole management of real estate by the State that would be impacted: from the simplification of the cadastral registry to the simplification of the maintenance of the real estate file. Sweden is a good example and aspires to an automated management of real estate transactions, based on the Blockchain. The Swedish Land Registry has developed a concept of real estate sales based on the principle of intelligent contracts based on Blockchain.

Françoise ANDRIEUX
President UIHJ

The goal is to allow citizens to register their property on the Blockchain which will bring three essential elements:
- **securing the data** so that it is incorruptible;
- **carrying out a public audit** almost in real time: the auditor will be able to audit the register not once a year, but every 10 minutes for example;
- Finally, **reducing friction in the registration and the cost of registration** of property rights, since citizens will be able to use the service on their smartphones. The Blockchain will thus be used as a notary service.

These preliminary remarks are intended only to reaffirm the need for the implementation of cadastral data via the Blockchain, which is a response in principle to the question asked.

This principle having been accepted, it remains to determine the methods of application.

Several questions arise, related on the one hand to the system itself and arising from each other: what about the ownership of the Blockchain, the personal data contained in the register, or this access to the data?

We will first attempt to answer these questions. Then, inevitably, will come a second series of questions related to Smart Contracts applicable to real estate.

1. The Blockchain Property

A. General presentation

As professionals, we always ask ourselves the question of the degree of legal certainty granted to litigants.

Currently, all systems that rely on trust involve the presence of a "trusted third party" who ensures that all conditions are met to complete the operation and then executes it in full compliance with the signed contracts and the law. However, sometimes sources or third parties are hacked or manipulated, compromising the security of information of individuals.

Thus, Blockchain aims to replace most "trusted third parties" (e.g. banks, notaries, judicial officers, cadastral registry) by distributed computer systems.

Each set of data and each digital transaction will leave a footprint.

Thus, once inserted into the Blockchain, the transaction is tamper-proof.

No flaw or intrusion is possible. Everything is secure and verified. Moreover, despite the public nature of writing, the users themselves can remain completely anonymous.

The question is: will this be done without endangering the privacy of individuals?

We see a first risk: the certainty of identity.

Here, one cannot escape the question about identity fraud or pseudonymity.

Pseudonymity has obvious risk implications when coupled with questions of irreversibility.

The French judicial officers have launched a platform for checking digital identities which must be a necessary prerequisite for the integration of blocks.

Digital identity is virtual, so the judicial officer offers to link the physical identity to the virtual identity, so as to build trust for all transactions.

This will facilitate and simplify the use of a secure digital identity for day-to-day exchanges and transactions, allowing anyone concerned to immediately and formally check the identity of their holder.

This certification is achieved through a face-to-face step, which is also required by the new eIDAS European Regulation on Digital Trust.

The need for identity verification on the Internet has become a pre-requisite for securing exchanges and for dematerialization incorporating a legal value.

This is a first recommendation that we think is useful for setting up the Blockchain (regardless of the area of intervention elsewhere).

B. Multiple questions on this digital revolution: which law to apply to the Blockchain?

- What is the legal status of the Blockchain?

Legally, it seems difficult to define the legal status of the Blockchain, since the operations are governed mainly by computer code. But Lessing's famous "*Code is Law*" is not enough in our opinion to guarantee legal certainty.

- Who owns the Blockchain?

To answer this question we must decide between private Blockchain and public Blockchain, which will have consequences on the ownership of the data and on the access to data.

These two points are crucial for professionals as well.

A public Blockchain (i.e.: a registry - ledger - open to all) is characterized by its total and decentralized openness: everyone has access and makes transactions, and everyone can participate in the consensus process. So there is no trusted third party. This is the best known model, the one that is at the origin of technology and used by Bitcoin, and which responds to a community approach, or even an alternative approach of the economy.

This is the only model recognized by purists. In addition to this model, there is also the so-called Consortium Blockchain whose access can be public or restricted to participants in a co-optation process. These Blockchains can be considered as "partially decentralized".

Finally, there are completely private Blockchains, where writing access is delivered by a centralized organization, but where read-permissions can be public or restricted.

In a private Blockchain, the technology developed by the organization in charge of managing the Blockchain is protected by intellectual property rights, even if it uses, for a large part, the source codes freely paid during the creation of the Blockchain. Conversely, in the public Blockchain, no one “owns" the source codes, according to the community principles of the common goods theory.

It seems that the private version is the most adapted to the land register.

At present, in an open Blockchain, the operations carried out have no legal force other than the value that the participants in the chain want to give them. Thus, in the case of Bitcoin, exchanges of this cryptocurrency have no legal value; they are not recognized as opposable to third parties, but only between the buyer and the seller. The situation is different in private channels since these channels can only work with internal rules applicable to all participants.

A state may legislate on the scope of these blocks of chains (public or private) and decide that they constitute either refutable evidence of ownership, irrefutable evidence, or even the title of ownership itself. But as long as the operations cross borders, the modalities for determining this system of proof can only be developed through an international convention. In the absence of agreement, one might fear legal control by a state power stronger than the others on the consensus chain.

This is a question to be solved as well.

If we take the case of the sale of an immovable using the Blockchain consensus chain, it would be considered as a genuine deed since this act is registered in a decentralized register using a technology considered as secure and transparent.

Thus, the transactions settled in these systems will have all the characteristics of the authentic act:
- Certain date: the authentic act certifies the date and is indisputable. It can therefore serve as proof;
- The content is guaranteed by the decentralized register: it guarantees the validity of the substance and form of the act;
- The act has probative force: the authentic instrument is an indisputable piece of evidence, it is the subject of the highest level of evidence admissible in case of litigation;
- The act is enforceable: the enforceability is automatic.

We reach perfection, unless we solve another main question for lawyers:

<u>What is the liability regime applied to Blockchain?</u>

Blockchain technology is by definition anonymous. This raises the question of the identification of the liable persons to engage their responsibility on their actions. To determine the liability, one would have to start by limiting anonymity. But who would be responsible? Whoever created the software, the users, or the owner of the Blockchain?

A case to solve, again with great necessity.

How is the governance of Blockchain organized?

Its development will require the creation of a climate of trust that will have to be deployed outside traditional institutions.

The operating rules of the Blockchain depend on its degree of openness: the more the chain is open, the less there is governance, and vice-versa. Thus, in a private Blockchain, such as the one that would underlie a cadastral register, governance is ensured by the institution that manages the chain: thus are regulated access conditions, functioning, security and the mechanism of legal recognition of transactions. Conversely, in the public Blockchain where access is completely free, there are no other operating rules than technology itself (reminder: "*Code is Law*" of the American lawyer Lawrence Lessing).

C. Protection of personal data

The cadastral data and the operations related to the real estate property will necessarily contain personal data, including at least the dates of birth, the state and the matrimonial regime...

Today personal data is what is called "*res nullius*", that is to say that they are not legally owned by anyone.

This position can be dangerous if one remembers that the founding fathers of the United States, when they met the Indians, ruled that their lands were "*terra nullius*" as they had no title deeds…

We must find solutions to avoid abuse and overflows.

To better protect our personal data, one idea often comes down: digital data should belong to those who produce it.

This idea echoes another, defended in the nineteenth century for example by Pierre-Joseph Proudhon, according to whom a meadow must belong to those who cultivate it.

The case of numerical data, however, is a little more complex than that of fields of barley or wheat. Indeed, who cultivates the data? Those who produce them (you and me), or those who pile them up and analyze them for profit (neither you nor me)? In the case of a field, deciding that the field belongs to those who cultivate it lights up the question. In the case of digital data, this only makes it more confusing.

The idea of establishing the ownership of everyone on his/her personal data might seem as a good idea, but in reality this a false good idea.

Mostly, individuals express themselves by marking their possession on their personal data by saying "my name, my address, my information". This practice is in a way "orthogonal" to the rules of law.

In France, as in many countries, the notion of data ownership has no legal status as such. Property can only relate to the intellectual creation of these data (intellectual property, such as copyright, trademark law, patent), to fall within the domain of "reserved" information (because confidential), or to belong to people because they constitute data about their person or their private life, and to be specifically protected by personality rights, to the exclusion of any property rights.

The French solution is as follows:

Article L. 107 A of the Book of Tax Procedures.
"*Any person, whether or not owner of a parcel in the territory of the municipality, derives from Article 2 of the Act of 17 July 1978 the right to obtain communication, in one of the forms materially possible, of all or part of the cadastral plans.* "

Therefore, any owner has the right to the communication of all statements of his properties. If the applicant establishes that he/she is the owner of the parcel for which he/she requests the statement or has an express mandate from the latter, he/she may receive a full copy in any possible form.

Third parties have a more limited right of access to cadastral data.

The owner of the parcel to which the request of a third party relates may not oppose the communication to him/her of the documents relating thereto. Furthermore, the plaintiff never has to justify a "legitimate ground" in support of his/her claim: the Administration cannot therefore refuse the communication of cadastral information on the ground that the third party claimant could make rogue use of it. It cannot further require the applicant to sign an "act of commitment" before taking a copy of the documents (Opinion No. 20062852 of 11 July 2006).

This particular right of access extends to all the documents composing the cadastral register.

However, the need to reconcile the principle of free communication of cadastral documents with the requirements of the protection of privacy in France has led CADA[1], as well as the CNIL[2], to limit the scope of the right of access recognized to third parties.

On the one hand, only the information listed in Article L. 107 A of the Book of Tax Procedures, namely the cadastral references, the address or, where applicable, the other cadastral identification of the immovable, the cadastral capacity of the parcel, the cadastral rental value of the immovable, as well as the names and addresses of the holders of rights in these immovable. On the other hand,

[1] CADA : Commission d'accès aux documents administratifs. Access Commission to Administrative Documents.
[2] CNIL : Commission nationale de l'informatique et des libertés. National Commission on Data Processing and liberties.

the date and place of birth of the owner, as well as, where applicable, the grounds for tax exemption, must be disregarded before the communication.

On the other hand, the communication of these extracts of statements can only be "one-shot". It is up to the administrative authority to assess, in particular in view of the frequency of requests for communication and the number of parcels and information to which they relate, whether or not these requests are likely to distort the scope of the principle of free communication of cadastral documents. This may be the case, for example, for requests made at regular and possibly reconciled deadlines, or for applications involving a large number of parcels or an entire statement with several properties.

1 - How to determine if a data is qualified as nominative data or not?

The example of the cadastral data illustrates the problematic of the dissemination of nominative data.

Through "one-shot statements", the Commission hears statements concerning only a few properties.

A balance must be found between the required protection of private life and the dissemination of these data.

Reuse is only possible: (i) if the person concerned has consented to it; (ii) if the data has been anonymized; (iii) if a legislative or regulatory provision allows it.

We are not "owners" of our personal data. This principle has been legally excluded on several occasions. In other words, a person cannot freely dispose of his/her data or sell them. It can only be a usufructuary.

Several legal arguments underlie this position. First, recognizing the "filed" person as the owner of his/her data would give this right a patrimonial component. He/she would then have the opportunity to sell a third party's access to this element of his/her personality. On the other hand, a "collector" can commercialize a data file, provided that it is anonymous.

1. Smart Contracts

Regarding the application of Blockchain as a registry, Smart Contracts, which are stand-alone programs that automatically execute the terms and conditions of a contract, without requiring human intervention once started, are not without problems.

A. Uncertain legal value

Blockchain is a technology. As a result, the transactions therein reflect transactions outside the chain (for example, sales of buildings and land through a private channel), or are transactions themselves (for example, Bitcoin). The challenge of the development of Blockchain is how to link "crypto" contracts with "Fiat" contracts, a term that encompasses everything related to the traditional legal environment. This is the problem of the relationship between cryptography and legal opposability. In

an open Blockchain, the operations carried out have no legal force other than the value that the participants in the chain want to give them.

The situation is different in private channels. First, these strings can only work with rules developed by the entity in charge of the activities ("*Rule Book*").

As a result, the private channel operates according to opposable internal rules between participants. The situation is the same for the projects of private chains related to cadastral registry. Blocks only record transactions without constituting the transactions themselves.

The Blockchain is here at best a proof of ownership, a proof that is hardly opposable to third parties without the intervention of the legislator to extend the regime of evidence, somehow like electronic signature.

B. The law applicable to operations in the Blockchain

What is the law applicable to operations in the Blockchain? The term "*Code is Law*" is insufficient to determine the question of applicable law. This expression was intended to explain that, on the Internet, the regulation of behavior is less by legal standards than by the technical architecture of the platforms used. What interests us here is to know what is legally applicable to a block or to the whole chain of blocks in the event of a dispute between two parties.

In other words, is the choice of law applicable to operations in the chain totally free, or is there a sufficient connection with a State that justifies the application of the law of the State?

Without going into the details of the argument, the law applicable to the chain is the law designated by the parties (except in the case of consumers who can take advantage of their national law if the essential elements of the contract have been performed in their country of residence).

What to conclude? That the stakes on Blockchain are as much technical and financial as legal. The legal control of the chain, whether in the sense of intellectual property law, the law of contract, or finally the governance of the chain, is a major aspect of the coming years. The risk being a loss of sovereignty for the states that will not take the measure of these upheavals.

Many steps in the purchase and/or construction of a building could be facilitated by Blockchain technology. As for the purchase, remember that the average duration of a real estate transaction is generally between 3 and 6 months, and that the process involves several stages, involving different actors, and whose interests may diverge.

Once one understands the legal virtues of the Blockchain, it only remains to probe his imagination to catch a glimpse of the vast extent of the concrete applications that this technology can bring to our society: the sale of a property real estate at the registration of a commercial lease, the use of the Blockchain can considerably simplify and harmonize the legal and administrative processes of our society in the field of real estate.

The professionals judicial officers intervene then: to establish the proof of the inventory of fixtures at the beginning and end of the contract, to claim unpaid rents, to carry out the eviction when necessary, to note the deficiencies of the parties during the execution of the contract (including breaches by the owner that could result in rent sequestration).

Can the intelligent contract predict this?

Of course it finds perfect application in this area as:
- The contract is available to all: the Blockchain proposes the drafting of simple contracts adapted to the needs of the litigant, quickly and at a reduced cost. Access to legal documents is thus facilitated.
- The contract becomes automatic: the Blockchain makes it possible to trace the exchanges during the negotiations and the drafting, to identify the decisive clauses of the contract concerned and the risks which it can present, to control its good execution
- The contract is managed: the contract has an economic value, and must be managed

With the Blockchain, the contract, developed upstream as a classic contract, is then translated into a computer protocol to be registered in the Blockchain - making it at the same time irreversible. No more room for interpretation: the contract will apply as it has been programmed.

The smart contracts on our Blockchainsells.com Website are simply a set of codes "if that happens, then do this".

It sounds simple, but problems arise here.

There are no definite recommendations, yet there is no legislation and no case law available. Even the definition on Smart Contracts differs when it comes to publications.

What happens when the contract is not executed?

It is necessary to move to the forced execution phase of the contract: seizure of bank accounts, seizure of furniture, eviction if we consider the contracts related to the right of real estate ownership.

For example, a lease contract: the Blockchain has the advantage of providing irrefutable proof of the life of the contract, of the exact moment of its non-execution, which facilitates the implementation of provisional and enforcement measures thereafter.

What happens if, for example, the execution or the non-execution of the contract leads to a different result from what one would expect?

For example: the rent is not unpaid but paid late (beyond what was planned by the Smart Contract).

No change in the general ledger can be made without the agreement of all accountants, which prevents an isolated actor from reversing or correcting a transaction without unanimous agreement.

So, on the one hand, the key functionality of Blockchains allows them to "solve" the problem of dubious users of a network (and this is considered one of the main advantages of using Blockchains), but of on the other hand, it is also one of the main weaknesses of Blockchains. It allows untrustworthy users to hide behind the technology and escape the corrective application after deceiving or defrauding others.

Self-enforcement

Self-enforcement of Smart Contracts means that the software executes the contract. Depending on the duration of the contract, the contract will autonomously execute the content of the contract (for example, the digital assets placed in the contract are allocated by the software and no external control of the contractual obligations or the execution is necessary). The creditor does not depend on the debtor's willingness to receive the payment.

On the other hand, the question arises: is there a real consent from both parties to submit their relationship to the judgment (and execution) of the computer?

Are these contracts implemented by means of navigation methods, that is to say "agreements" where a non-technical customer is bound by the terms of a contract simply by placing an order online without seeing its terms or consent to it actively? Courts have often been reluctant to enforce such contracts, and if the "smart" elements of the contract appear to be prejudicial to the client, the courts may award remedies even in the case of automated enforcement.

Legislative rules

Some parties have special legislative protection that Smart Contracts should not be allowed to circumvent (including the debtor's rights).

The principle of Blockchain is that when the data has been decrypted and the block is valid, it is time stamped and added to the Blockchain. Transactions become visible throughout the network. Once a block has been added to the chain, it cannot be modified or deleted. The fact that each operation is saved within the network guarantees its authenticity and security.

What about the right to be forgotten, for example? The fact that each transaction is indelibly inscribed and saved in a grand register could rule against the right to be forgotten under the 2014 "Google Spain" ECHR judgment and the new (EC) General Data Protection that will come into force in 2018.

The indelibility of the Blockchain could give rise to overflows like lists of “wicked payers” who would then be refused access to housing because they would have had recurring difficulties to pay their rent...

Other forms of automatic execution may result in higher costs for the receiving party than a contract would normally be allowed to do.

Dispute settlement

The code is the law or the software code is the regulatory concept. Smart Contract can lead to delays in resolving disputes.

At the moment, this issue has not been discussed yet and technology has not yet addressed this issue.

It is clear that if the contracts are directly applicable, the dispute settlement rules must also be amended. We have experienced difficulty in the UNCITRAL Working Group on ODR (Online Dispute Resolution) (acceptance of mandatory arbitration clauses before dispute settlement).

An example of private enforcement in ODR can be found in eBay's "Money Back Guarantee", although the e-commerce giant accentuates this as an insurance-type safeguard in case the buyer does not receive the ordered item or the item does not match the listed description. Based on the guarantee, eBay's system refunds a dissatisfied buyer in case the seller and buyer are unable to reach resolution themselves. After reimbursement to the consumer, the seller is then responsible for reimbursing the amount to eBay. Based on eBay's User Agreement of 19.5.2016, eBay may request the interfaced payment operator PayPal to hold the funds on the seller's account to enforce this responsibility.

Although eBay's mechanism is not referred to as enforcement, it operates based on a similar logic as that of private enforcement.

Contract law

In addition to legislative protection, contract law contains a number of other protections for all parties or for vulnerable parties, including provisions on error and misunderstanding, and the duty of good faith (in Common Law).). Can more powerful contracting parties simply remove these protections by being "smarter" than the law? This is a concern similar to the one often expressed about copyright protection measures, namely that they may prevent the exercise of the long-standing rights of the law (or the functioning of the defenses) for those who prefer this qualification (or educational use).

Conclusion

It seems clear that the introduction of Smart Contracts will have an impact on the way legal systems are currently organized:

• Smart Contracts will change the understanding of contract law. Smart, self-executing contracts are based on the private use of power, rather than the public use of power.

• The above question may also relate to the use of procedural law. It is clear that with the introduction of Smart Contracts, dispute resolution will evolve.

• Smart Contracts are self-executing contracts. Self-fulfillment means that the monopoly of execution that was previously in the hands of the state disappears. The disappearance of this monopoly means that the state will no longer play any role in controlling the execution system.

• The question remains: do we want Blockchain to take the role of forced execution? After all, transactions in such Blockchain infrastructure are irreversible. Does this mean that this system is in accordance with the principles of the rule of law and the protection of weaker parties? What does the irreversibility of the Blockchain transaction mean? How do we consider the assumptions of the Smart Contract? Are the parties equal or is there an imbalance? Can we ensure fairness and due process when law enforcement and dispute resolution are more automated?