Blockchain set to transform the way we do business

10 November 2016

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Imagine using the services of businesses like Uber, BlaBlaCar, or AirBnB without actually using their websites, but instead being able to contact the drivers or hosts directly. Or making money transfers without needing a bank as an intermediary. **This may soon be possible with Blockchain, a technology similar to an online account book.**

Blockchain is a type of Distributed Ledger Technology (DLT). This means it relies on distributed ledgers, i.e., on databases that compile a list of transactions which are replicated, distributed and synchronised in a number of computers, rather than being stored on a central server. An algorithm ensures that all replicated versions of the data stored in the distributed ledgers are coherent. To avoid fraud, each user is given a cryptographic signature, or private key, to sign changes made to the registry of transactions.

Blockchain has the potential to become a game-changing technology due to its data structure: once entered, that data is unchangeable and information can never be erased, making it analogous to an account book. The data will be digitally recorded in packages, or 'blocks'.

Advantages of Blockchain

Provides with high level of security	• Impossible to steal information • Unhackable
High speed	• Instantaneous to 10-minute-long verification of the additions made to the Blockchain
Cost-effective	• Eliminates intermediaries • Reduces the cost of operations
Trustworthy	• Verifiable transactions which are traceable back to the genesis block • No data alteration possible

Disadvantages of Blockchain

Only offers partial privacy	• All modifications made to the Blockchain can be traced back to a user
Difficult to scale	• Requires large processing power to function as a mainstream payment system
Regulatory uncertainty	• EU authorities are only exploring the regulatory impact of Blockchain application to Virtual Currencies
Adaptation of existing infrastructure	• Companies must adapt their infrastructure • Customers have to get used to an even more decentralised network

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While Blockchain technology has many applications, ranging from finance to energy management and business services, virtual currencies like Bitcoin are the most common example. Created in 2009, Bitcoin is a decentralised virtual currency relying on public blockchains, i.e., any user can read or send transactions. Every single action made is compiled across blocks of the Bitcoin chain which acts as a secure and verifiable record. As a public blockchain, Bitcoin is not anonymous but provides pseudonymity, making it very difficult to identify users without external information.

As Bitcoin has grown exponentially in recent years, European Institutions have begun to show interest in Blockchain technology and its application to virtual currencies:

- **The European Council** called on the European Commission to submit precise amendments to the 4th Anti-Money Laundering Directive (AMLD4) to address the challenges raised by Blockchain-based virtual currencies on 22 April 2016.
- **The European Parliament** advocated for the inclusion of virtual currency exchanges within the scope of the AMLD4 in a non-binding resolution adopted on 26 May 2016. The resolution also supported the creation of a Virtual Currency Task Force.
- **The European Commission** presented a legislative proposal to bring virtual currency exchange platforms and custodian wallet providers under the scope of the AMLD4 on 5 July 2016.

The mass adoption of Blockchain technology across all sectors is close at hand, with large companies such as Accenture, IBM or Microsoft developing their own Blockchain projects. Blockchain technologies could be extended to many sectors, such as:

- **Corporate governance and e-voting**, as votes in annual general meetings could be held using Blockchain technologies.
- **Legal professions and auditing**, as Blockchain could be used to record and timestamp documents, replacing the need for lawyers or notaries for certifications.
- **Payment systems**, as shown by Ripple, a start-up providing Blockchain-based global financial settlement solutions to major banks – including Santander, UBS and the National Bank of Abu Dhabi.
- **Supply chain management**, as Blockchain allows tracking the provenance of different materials and could maintain records of production and storage.
- **Energy management**, as tested by Bouygues Immobilier. The company currently uses Blockchain technology to track the origin of energy produced by privately installed solar panels in a neighbourhood of Lyon, France.

Blockchain technology has great potential, but several regulatory challenges still need to be addressed. The interest shown by both the private and the public sectors, notably by the European Union, should allow this multi-purpose technology to transform the way business is done in Europe. As European Institutions are now debating the need for regulation, businesses and consumers should take the opportunity to have their voices heard.