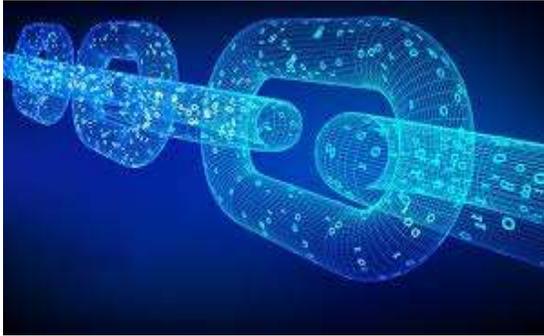


The use of Blockchain Technology for non-financial services

By Chris Droussiotis, KV Senior Managing Partner



Most people think that crypto currency like bitcoin is the same thing as blockchain. Blockchain is not bitcoin. This association is what led to confusion and many negative articles that surfaced in 2019 after a significant drop of the value of bitcoin to under \$6,000 from its 2017 \$20,000 plus high levels. This had a tremendous effect on the overall cryptocurrency and its unfairly associated technology called blockchain. There are dozens of confusing articles regarding the future of blockchain and its use and how blockchain is highly correlated to the volatility mistrust of the crypto world. Even the smartest ventures capitalists have slowed down their investment in blockchain technology driven by this mistrust and confusion. In a recent article by Bloomberg (November 12, 2019) it states that the investments in blockchain technology has decreased from \$4.1 billion in 2018 to \$1.6 billion in 2019. This while many companies have already initiated blockchain technology are in the process of completing these projects in the next few years. According to Deloitte report its revealed that 34% of companies have already initiated a blockchain deployment, while 86% of management of these companies are confident that the adoption of such technology is inevitable.

To understand what blockchain is, we first need to give a simple definition and then explain its potential technological use beyond the confirmation of transferring crypto currencies between parties. Blockchain as a decentralized peer-to-peer system that was developed in 2008 as platform that allows a party to transfer “value” such as money to another party without the bank being the middlemen executing such transaction. Of course, the technology is set-up that such transfers are independently verified by other parties and such transactions are irreversible and permanent because they are recorded in a public kept ledger that everyone can access. The key word in this statement is the word “value”. In the case of money, the value is measured by the exchange rates of the specific crypto currency such as Bitcoin to the value of money referred to as Fiat money or the value of goods that such currency can buy. Blockchain is the technology that enables this transfer of value.

This decentralized technology, known as blockchain, can also be used to verify any transfers of value of non-money currencies such information on products and services. For example, a farmer that produces milk can record the transaction (volume, dates, content, recipe) after it sells its milk to the distribution company. Then the distribution company can record their distribution information of such milk to the cheese manufacturer and then the purchase of the cheese by the grocery chain and ultimately the sale to the consumer can also be recorded in this public kept ledger. These set of records through the supply chain, called blocks, verifies exactly where the milk came from and where it ended up – a significant value information to the consumer. The trust of knowing exactly where the product came from and the confirmation that the product is organic

with no added pesticides, for example, or the confirmation that its safe and authentic it will be ultimately essential information that the consumer will require before it purchases the product.

Soon, experts see further integration of blockchain with other technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI). Companies should gain substantial benefits from blockchain in conjunction with IoT and AI. Back to the definition again, blockchain technology provides a secure and scalable framework for communication and trust between IoT devices.

One company that has significantly invested in blockchain is IBM through its IBM Food Trust subsidiary. IBM Food Trust has developed an ecosystem of producers, suppliers, manufacturers, retailers and others by creating a safer, more sustainable food system that everyone can benefit from. This system claims that it eliminates the bottlenecks to speed the supply, enhance the reputation of all the parties for safety and quality and ensures safety and regulatory compliance.

Kinesis Ventures is currently working with a company in the food diagnostics space called Embio Diagnostics (<https://embiodiagnostics.eu/>). Embio has developed a device called B.E.L.D that could be used by the farmers, manufacturers or retailers to detect bacteria such as listeria or possibly detect any pesticides added on vegetables, meat or dairy products before it gets to the consumer. If this device is placed as “block” in the supply chain powered by blockchain technology, it should add that additional verification for safer food. The IBM Food Trust website does a really good job of identifying the need for the blockchain technology in the food safety area. According to IBM, “not all companies can quickly identify the cause of a food safety incident. Tracing food across the supply chain takes days, if not weeks, as companies struggle to track a mix of digital and paper-based food data documentation across a complex and growing network of suppliers and distributors”. Embio Diagnostics is one of the few companies that can identify certain bacteria in the food supply in less than 3 minutes. The company is in the process of expanding their diagnostics services to other areas in food safety.

Food recalls are a major problem and significant threat to profitability. According to Food Safety Magazine (FSM), last year there were **456 food safety recalls globally** due to contamination costing an average of **\$10 million per incident**. In addition to the business impact, consumer trust is damaged, and a lot of food is wasted. With a digital food system such as the IBM Food Trust, setting up a network of participants will have access to tools and data to improve food safety. Researchers found that a significant number of food safety recalls were due to a lack of supply chain transparency, which permitted food fraud and corruption to occur. Outdated food traceability practices aren't built for the modern era. The government agencies have been urging the stakeholders in the food industry to move ahead with technology to improve food safety. A recent quote found in the IBM Food Trust website from the U.S. Food Drug Administration's Commissioner states: “ We [at FDA] strongly encourage the leafy greens industry to adopt traceability-best-practices and state-of-the-art technologies to help assure quick and easy access to key data elements from farm to fork”.

At KV we are excited that we could be a part of a revolutionary change that is happening before our eyes. Blockchain is here to stay. More and more enterprises understand the added value of distributed ledger technologies, including transparency, immutability and decentralization.

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