IDnomic

# Expert Advice
# Blockchain: beyond payments

Because the blockchain protocol was first designed for the development of the bitcoin cryptocurrency as its underlying architecture, it's only natural that so far it has been most widely used in the financial services and payments sectors.

After all, there are immediate attractions to a means of payment which does not rely on banks, which is not controlled by centralized institutions, and which creates complete trust between separate parties who are engaged in a monetary transaction.

But the real potential of blockchain goes far beyond the financial sector.

Today's market economies operate on the assumption that different players cannot trust each other without an accredited third party establishing that trust. But in a blockchain system, trust is intrinsic. It is native to all members of the network. All parties in a blockchain consortium can see the same certified information, at the same time. No single entity has more power than the others.

This has dramatic implications for all areas of economic activity. Any group of companies that share a common need to trace and record information, for example to manage shipments across a complex supply chain, can take advantage of the technology to develop new business models.

## The basics

Blockchain is often described as a distributed or shared ledger, to which all parties in the network have access.

Different parties around the world can track and trace information, in the assurance that everyone in the network has the same version of that information. When changes are made to one copy of the ledger, all other copies are automatically updated.

Inside this distributed ledger, transactions are encoded into blocks and then linked to each other cryptographically – hence the name, blockchain. It's not possible to tamper or delete information that enters the ledger. Any participant can verify the information at any time.

## Private vs. public

The best-known blockchain networks include Bitcoin, which uses the protocol to enable secure crypto-monetary transactions, and Ethereum, which uses blockchain to record smart contracts (Beyond just transactions, they permit execution of code on each node, leading to decentralized applications).

These uses of blockchain are public – anyone on the Internet can use them. This makes sense for mass blockchain applications such as bitcoin.

However, for commercial uses I believe that private, permissioned blockchain networks are more appealing. Only authenticated companies with the right credentials can access and participate in these consortia. There is no room for anonymity, and companies can have more control over the visibility of their data. Compared with public blockchain, these private networks also cost very little to run and consume much less power.

## On the road again

Permissioned blockchain networks can transform the efficiency of markets across all sectors. For instance, at Atos, we are working on an interesting blockchain project in the French used car market. Currently, when someone buys a second hand vehicle, there is no sure way of knowing whether the information contained in the car maintenance record or on the milometer is accurate.

Now, with our partners in the IRT SystemX institute and companies such as car manufacturers, we have set up a private blockchain network which can eliminate the potential for fraud.

When a car owner takes a vehicle into a garage for service or maintenance, all information about the car – including the distance it has travelled – will be entered into the shared, distributed ledger using blockchain. This cannot then be changed. Any potential buyer will just have to check the network to make sure that the information on the meter and in the maintenance book corresponds with the reality recorded using blockchain.

For the fraudulent, there will be no place to hide.

The implications of innovations such as these – not just for the used car market but all over the economy – are far-reaching. Yet these developments are only scratching the surface of the technology.

Over the next years, I believe we will see companies and governments begin to wake up to the full potential of blockchain to transform the world we live in.

**Thomas Domingos**
IoT Security & Blockchain Engineer

Thomas Domingos, Security engineer from Ensimag, has joined the Atos Group in 2014 as Smartcard solution developers. In 2015, he joined the cybersecurity transformation to IoT, where he lead the developments over the Security Server dedicated to IoT. He is now part of the Innovation team of IoT Security in BDS Cybersecurity, specialized in Blockchain and Artificial intelligence dedicated to Cyber Security.

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Let's start a discussion together



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