

Blockchain basics...

What is “blockchain”?

Technically, “blockchain” is software technology which enables the creation and operation of a shared, decentralized database on which data entries can be made by multiple participants (the **nodes**) and are, after verification and once embedded in the blockchain, irreversible except by **consensus** and are made confidential by cryptography or “hashing”. The virtual immutability of a blockchain is created by the layering structure where the data in a new block is embedded in the preceding block so that each time a block is added it locks in the data in preceding block. This type of technology is also referred to as “distributed ledger technology”. The consensus is the set of rules or protocols which governs interaction with the nodes.

Structurally, A blockchain can be private, often referred to as “permissioned” (ie where it operates on a closed network – such as consortium of banks) or public where it is open to anyone to access. Processes for verification of entries can differ and are set out in the consensus protocols for the blockchain – in the original form of Blockchain which underpins the bitcoin virtual currency, transactions are verified before being added to the Blockchain by a network of “miners” - anyone can become a miner by downloading the relevant software. The verification work done by a miner is rewarded by the issue of bitcoin to the miner. Depending on the consensus protocols which are agreed, verification can be done in different ways either by a network of authenticators or potentially by a centrally appointed authenticator. A permissioned blockchain can operate independently or as a “side-chain” to a public blockchain.

Metaphorically, “blockchain” is becoming a code-word for a transformative process development made possible in a range of sectors by the evolution of the shared or distributed ledger technology which underpinned the launch of bitcoin.

Why is everybody talking about it?

Opinion on the likely impact of blockchain differs.

Some believe it will be as revolutionary in terms of transferring value as the internet was in terms of transferring information. Indeed it is sometimes referred to as “the internet of transferred value”. Others think it is over-hyped and as a result it will under-deliver.

But there is already a vast amount of energy and money being applied across industries to finding out who is right. On 26 May 2016, the European Parliament noted that whilst distributed ledger technology (DLT), also commonly referred to as blockchain, is most notably used for virtual currencies the nature of the technology, creating shared databases with varying levels of trust and resilience, has transformational capacity in fintech more broadly, including in clearing and settlement, as well as beyond finance, for example for proof of identity and property. It also noted that it had attracted investment totalling more than EUR 1 billion to date, from both venture capital funding and corporate investment.

Even the doubters appear to believe that it offers opportunity and it is only the scale of transformation which they question.

It may evolve in predicted or unpredictable ways but it seems reasonably certain that elements or derivations of this technology will be part of business and our everyday lives going forward.



What will it be used for?

There are a wide range of potential use cases across a range of sectors which are being explored. There will be use cases which have not even been contemplated yet.

It has been described as the “internet of value transfer”. Essentially it could help ease “pain points” in current processes for transferring and recording ownership of value. Some believe that it could release additional liquidity into the market through reducing settlement times or increasing operational efficiencies. Budgets are being found to secure that prize!

There are also potential applications for related technology referred to as “smart contracts” essentially code which can perform pre-determined functions, such as the purchase or sale of an asset when the market price hits a specified price by linking to an external market reference. But the term “smart contract” can be misleading as it is increasingly accepted that this technology creates a need for a new type of contract rather than constituting a contract of itself.

Blockchain it comes with its own “pain points”. The race is on to find a way to solve those in order to release its potential.

Legal and regulatory issues will be integral to developing blockchain solutions. We can contribute to the thinking on those and help to navigate them. Our technical knowledge of the regulated environments in which blockchain solutions may operate enables us to identify which blockchain use cases offer solutions which will be compliant with the current legal environment and help us to identify what new legal solutions may be needed. Just as the internet needed new legal rules to be developed on who was responsible for “publishing material” or mechanisms for dealing with domain name squatting.

It helps to think of the current state of “blockchain” as being like the early days of the internet when it was clear that it would impact business but not how. The recommendation then was to register domain names for your brand and every common spelling mistake for your brand so that people could still find your site. Search engines, such as Google, had not been imagined then but they evolved quickly to solve a new issue

created by the internet – how to sort all the information which had suddenly been made accessible across the globe. Blockchain will probably solve and create issues in similar measure – and create new business opportunities for those who can develop solutions to the new issues.

Who will use it?

It originated in the financial services sector but it has application across most sectors. Understanding of “blockchain” is currently better in the financial institutions sector but that sector faces regulatory barriers which some other sectors do not. Use cases have also been identified in the energy, government, media and pharmaceutical sectors.

For example, the ability to make nano-payments may have particular application in relation to generating income from digital content or enabling the peer-to-peer transactions may be transformational in the retail energy sector – perhaps peer-to-peer exchange of energy through solar panels will be the next AirBnB.

When will it happen?

Blockchain has been used for bitcoin since it was launched in 1994 but there are a huge wave of new use cases under development. The last six months have seen a huge increase in investment and progress on developing the alternative use cases so practical applications are getting closer but commentators are still estimating that this year will remain development phase with growth and widespread adoption being measured in years rather than months.

But with all the “blockchain labs” racing to market, timing is just another unpredictable feature of blockchain.



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