

# Understanding Libra: Facebook's foray into cryptocurrency

In June 2019, social media giant Facebook announced it would be launching a cryptocurrency called Libra, which could be used to transact within Facebook's various applications including Messenger, Whatsapp and a standalone application.

The stated aim was to 'bank the unbanked', facilitating access to financial services in the poorest cohorts of global society and creating new economic opportunities by making "microtransactions" feasible.

It was immediately met with scepticism and a US presidential tirade, and it may yet fall foul of various regulatory bodies, but it is still the most substantial project using blockchain technology since bitcoin launched a decade ago.

So, what exactly is it and how will it work?



## Is it a blockchain?

**The Libra blockchain doesn't follow the more traditional blockchain designs of Bitcoin and Ethereum, but it does draw on the technologies of these systems, including a distributed ledger, hashing, public/private keypair encryption, smart contracts and Merkle Trees.**

The Libra blockchain is chiefly different to Ethereum and Bitcoin because it is permissioned rather than public. This means participants must be "invited" onto the system, rather than it being open to all. However, the Libra Association hopes to transition to a permissionless proof-of-stake system within 5 years.

With Libra, only approved 'validators' can verify transactions, whereas in a public blockchain this is typically done by miners, which could be any participant.

The Libra blockchain is also different because the ledger history is built at the transaction level, rather than at the block (or grouped transaction) level. This means transactions are initially collated into blocks and chained together, but once the transactions are validated they are stored individually, but within hashed Merkle Trees like traditional blockchains. This storage structure ensures the transactions are safe and immutable.

### How is Libra different from a traditional blockchain like Bitcoin?

- 1 It is a "stablecoin" backed by real money.
- 2 It is permissioned rather than public.
- 3 Only approved validators can verify transactions.
- 4 When transactions are validated they are stored individually, rather than grouped into blocks.



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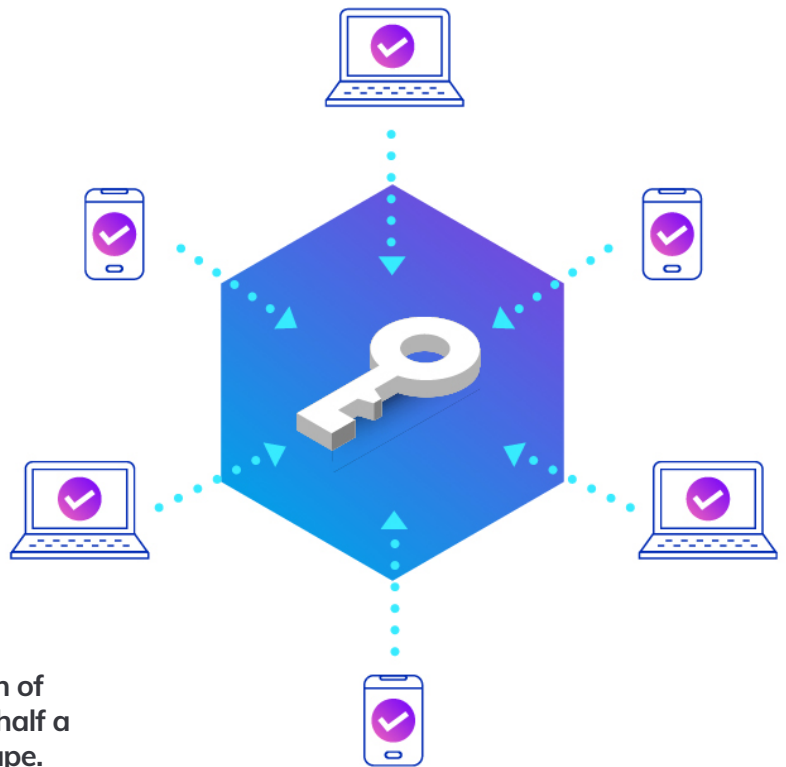
## Who's in charge?

When Libra was formally announced in June 2019, there were 28 "Founding Members" of the Libra Association (LA) based in Geneva.

The role of LA members is to act as validators for transactions in the system and form the governance body for the overall Libra enterprise.

In addition to Calibra, Facebook's new subsidiary which will handle its Libra-related business interests, Libra Association members include Uber and Spotify (Technology and marketplaces), PayU (Payments), Vodafone (Telecommunications), Coinbase (Cryptocurrency Exchange), as well as various Venture capital firms, academic institutions and non-profits.

With 20+ validators, Libra claims the distribution of power is already more even than Bitcoin where half a dozen mining groups now dominate the landscape.



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## How does it work?

**Your Libra Wallet, Calibra, will be secured with the same type of private and public keypair encryption method as the Bitcoin blockchain.**

When you want to transact with another person using Libra, your transaction will be originated and encrypted using the public/private keypairs and digitally signed to maintain the security of the transaction. Transactions are executed via transaction scripts or "Modules" which are similar to smart contracts.

The transactions via Libra are then grouped together into a block and authenticated by validators who are part of the Libra Association. Once validated, the transactions are then individually added to the chain of transactions in the Libra blockchain and stored away as hashes within Merkle Tree structures, making the record of transactions effectively immutable.



## Is it safe?

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**“When it launches, Calibra will have strong protections in place to keep your money and your information safe.**

**We’ll be using all the same verification and anti-fraud processes that banks and credit cards use, and we’ll have automated systems that will proactively monitor activity to detect and prevent fraudulent behaviour.”**

### Facebook at Libra’s launch

**Theoretically, using blockchain technology should provide a level of safety to the transactions. Transactions require the agreement of 67% of validators to be added to the ledger. Assuming 67% of validators are trustworthy, attacks on the system should be avoided.**

The Libra blockchain also uses hashing and Merkle Trees, technology that keeps the data manageable, secure, and very difficult to hack. As with the Bitcoin blockchain, the use of Distributed Ledger Technology adds to the security of the system as attackers would need to simultaneously and individually hack all of the participating nodes’ servers and rehash the transaction data without any of the participants noticing.

## Possible Impact of Libra

**Unlike most public cryptocurrencies available today, Libra will be backed by real money, initially sourced from investments by founder members, but later on an on-going basis through the conversion of fiat currencies into Libra Coin as users carry out transactions.**

This makes it a so-called “stablecoin” which is fully backed by reserves of assets denominated in major currencies such as US Dollars, Euros, Yen and Sterling. One of the important objectives of stablecoins is to reduce cryptocurrency speculation, particularly where volatility and an increase in value could undermine the socio-economic purpose of acting as a low cost, reliable means to transfer value.

**Facebook says it intends to keep transaction costs low. The company is expected to generate its return by being able to increase advertising sales and revenue making it more effective via easier conversion into purchases.**

**Low transaction costs and high transaction speeds would put Libra in competition with current international payments and transfer systems, like SWIFT (which is in fact just an instruction of transfer rather than the process of the money being moved). The Libra blockchain can carry out the actual transfer of value at much lower cost and in a much shorter time than conventional banking and payments systems, particularly for cross-border transactions.**

Libra could relatively seamlessly move into lending, for example carrying out credit assessments via the monitoring of Libra activity combined with other “Big Data” sources and the use of Artificial Intelligence.

Disruption could also extend to local currencies, particularly in emerging markets with high inflation. In these markets, Libra could provide savers with a conduit to exchange local currencies into the cryptocurrency which, even though it carries no interest, would not suffer from high inflation. Having taken this step, funds could subsequently be more easily converted into “hard” currency such as US Dollars, since the funds would effectively already be “offshore”. The disruptive impact of this could be profound for developing economies by undermining capital control systems.

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## The backlash

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**Whilst Libra's ambition has been cautiously welcomed in some quarters, it is fair to say that the initial response has not been entirely favourable.**

Underlying the hyperbole in the press are a number of genuine concerns, including (but not exclusively):

- Libra being viewed as a surreptitious manoeuvre to take over financial services whilst staying under the regulatory radar.
- General anti-trust sentiment which looks to avoid the concentration of economic power via control over money and transaction systems. This concentration could mean ending up with less competition in financial services, rather than more.
- Financial stability concerns – including if Libra became a major currency linked to other major currencies and backed by reserves held in the form of a very large portfolio of government securities. This could result in fluctuations in the value and liquidity of the securities in the portfolio, and could create instability in both currency and securities markets as well as across the global real economy.
- Calibra could become a very large owner of government securities via the Libra Reserve, with potential influence as a major creditor to sovereign states.
- Untrustworthiness with respect to client data (think Cambridge Analytica) which would extend to personal financial data from Libra transactions.

**Many of these concerns have been expressed by the Senate, House of Representatives, ECB and the US Treasury Secretary, and will need to be monitored by regulators and central banks if the currency grows in popularity.**

Others such as Mark Carney, Citi and JP Morgan are more circumspect – perhaps reflecting a sentiment that it really is time for payments, banking and currency systems to move into the 21st century and serve more of humanity.

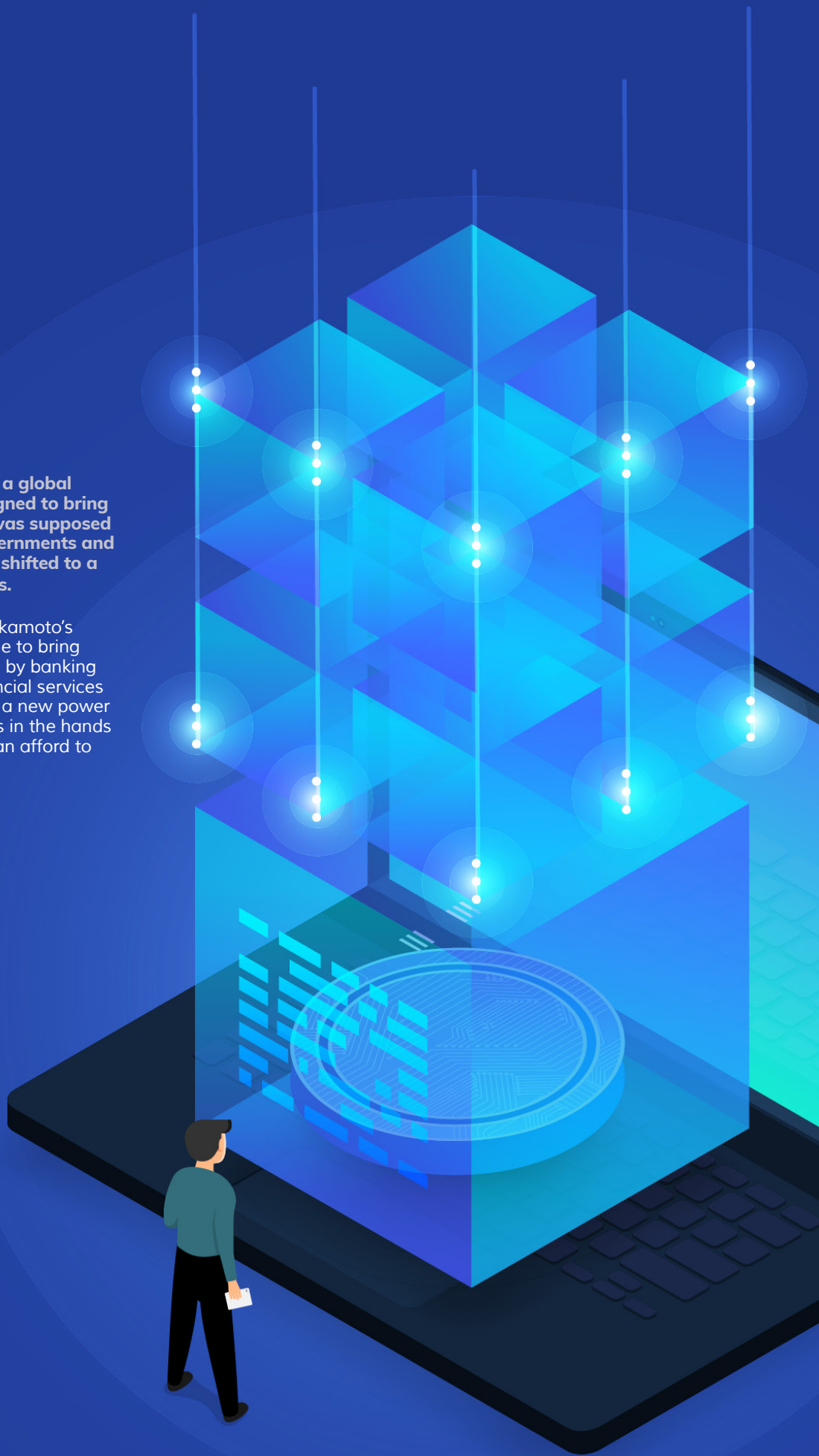
Banks are reluctant to join the Libra Association due to uncertainties surrounding regulation and feasibility, a concern that also drove initial LA members PayPal, eBay, Mastercard, Stripe, Visa and Mercado Pago to leave the Association before the first Libra meeting on October 14 2019.

## The end of the beginning

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Blockchain laid the foundation for a global decentralised cryptocurrency designed to bring about socio-economic change. It was supposed to wrest financial power from governments and banks, but instead this power just shifted to a few wealthy mining conglomerates.

Now, ten years on from Satoshi Nakamoto's vision, Facebook's Libra may be able to bring about that socio-economic change, by banking the unbanked and opening up financial services to everyone. Or it may concentrate a new power to monitor and control money flows in the hands of private-sector tech giants who can afford to build their own private blockchains.





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