

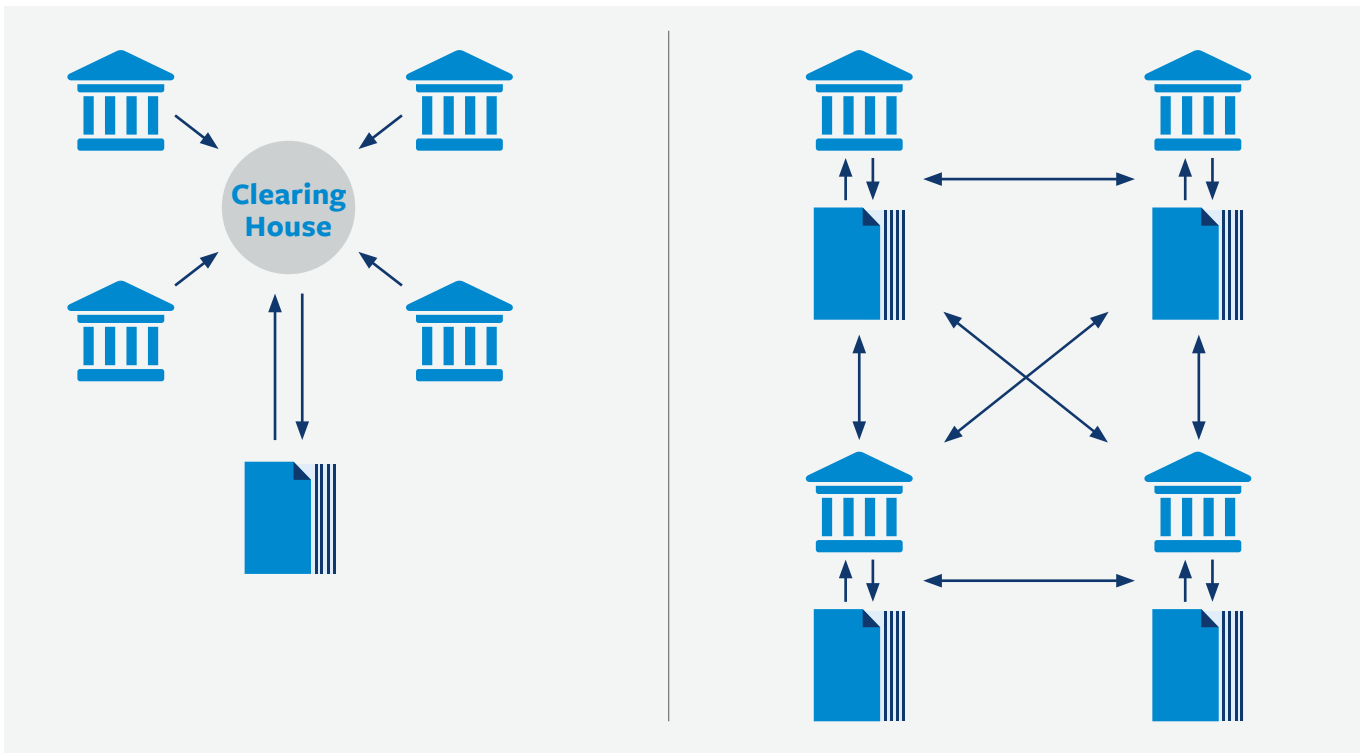
Beyond Blockchain

Distributed Ledger Technologies and the Mayer Brown link



Transforming the Future

Blockchain and other distributed ledger technologies (“DLTs”) have great promise to transform the recording and management of transactions in a variety of areas. DLTs employ a shared, verified database that multiple users can view and record transactions permanently. Cryptographic algorithms validate the recorded transactions and ensure no record is duplicated and that the permanent record is updated on each node of the network. DLTs eliminate the need for a trusted central database manager and allow for any ledger to be decentralised between network participants, which can create significant efficiencies.



Left: A centralized database acting as a single point of control and a single point of failure.

Right: A distributed ledger recording ownership through a shared registry.

The blockchain distributed ledger was originally deployed as the infrastructure for bitcoin, a peer-to-peer digital payment system. However, according to the World Economic Forum, “[d]ecentralised systems, such as the blockchain protocol, threaten to disintermediate almost every process in financial services”. DLTs have potential applications for securities settlement, trade finance, voting, records sharing, database management, asset title registration and IP rights management, among others.

The combination of distributed ledgers with “smart contract” technology promises to be an especially potent combination that could reduce costs in a wide range of transactions. Currently a number of projects supported by leading global financial institutions have demonstrated prototype distributed ledger platforms that employ smart contracts to automate payments and settlement transactions in a number of financial instruments.

Thought Leadership

Mayer Brown lawyers are thought leaders of emerging technologies, such as DLTs, regularly contributing articles in key publications and have actively participated in recent industry forums, including:

- *ACI’s Blockchain and Distributed Ledger Technology conference, at which Washington, DC., partner David Beam was a speaker on a panel entitled Consumer Protection on the Blockchain;*
- *The Utilising Blockchain in Banking forum held by the British Bankers Association and hosted by Mayer Brown’s London office. London-based partners Guy Wilkes, Mark Compton and Mark Prinsley convened a panel discussion examining regulatory approaches in respect of DLTs;*
- *The SFIG D.C. Symposium on Blockchain Technology, at which partner David Beam was a member of the panel; and*
- *The Annual Capitol Perspectives conference hosted by Mayer Brown’s Washington DC office at which a panel discussion took place entitled Bitcoin, Blockchain and Related Technologies: A Primer on Legal Issues and Potential Market Impact.*

Substantive Experience

Because the possible applications of DLTs are so diverse, they potentially touch on a broad range of substantive legal areas. Many DLT applications are by their nature global, which means that their developers, operators and users must consider the laws of multiple jurisdictions. Mayer Brown's global platform is well poised to help clients navigate the complex and novel legal issues that DLTs present. Our lawyers collectively have the breadth and depth of expertise to identify, analyze and resolve the plethora of issues that DLTs present in nearly every area of substantive law. Below is a discussion of our expertise in some key areas.



Payments

Launched in 2009, bitcoin was the first application of the blockchain distributed ledger and DLTs continue to hold great promise to provide a mechanism for payments and value transfers. Mayer Brown's Payments team advises digital currency service providers, including providers of services for bitcoin and other DLT-based digital currencies, on regulatory requirements in the United States and globally.

Our team regularly advises companies on money service business laws. They help companies structure transactions and operations to limit licensing requirements, and assist companies with the state-by-state licensing process when licensing is unavoidable.

Mayer Brown lawyers also advise clients on the full range of laws regulating payments transactions, including UCC Article 4A, the Electronic Fund Transfer Act and Regulation E, Regulation II (the regulation implementing the Durbin amendment) and Financial Crimes Enforcement Network regulations under the Bank Secrecy Act.



Intellectual Property

DLTs hold great promise to streamline and improve the registration, transfer and licensing of intellectual property assets and to aid ongoing measures to detect counterfeiting of physical and digital goods. Developers of DLT platforms are also seeking to protect new intellectual property assets they have established with the launch of the technology.

Mayer Brown's award-winning Intellectual Property group is renowned for handling cutting-edge technologies, making new law and taking an interdisciplinary approach to derive creative solutions to novel issues. Our group has patent lawyers whose backgrounds are particularly well-suited for blockchain technologies, such as computer science degrees, computer network expertise, database backgrounds and experience in the financial services industry. About half of our 100 intellectual property attorneys have degrees in computer science and engineering, including many with advanced college degrees.

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Securities

Perhaps one of the most promising applications of DLTs is in the area of securities trading and settlement. DLTs may greatly improve the efficiency of the post-trade process by ensuring that the counterparties share the same records, eliminating the need for reconciliation for certain transactions, and may also offer platforms for securities issuance.

Any application of DLTs related to securities will implicate the complex body of securities laws throughout the world. Mayer Brown's globally recognized securities practice is positioned to help companies navigate the application of securities laws to evolving blockchain applications.

By Q2 2016 a number of post-trade settlement operations incorporating DLTs had been successfully tested by institutions including Goldman Sachs and ICAP plc and other groups led by The Depository Trust & Clearing Corporation and Digital Asset Holdings, involving single-name credit default swap (CDS) transactions, spot/forward FX trades and other types of securities. There has also been issuance of new securities via DLTs by t0.com (an Overstock.com subsidiary) and Chain Inc.

Securities regulators have begun to examine the impacts of DLTs. Following its approval of the issuance by t0.com in 2015, SEC Chairman Mary Jo White announced that the Commission is actively exploring the application of existing regulatory regimes to DLTs. In Europe, the European Securities and Markets Authority launched a consultation into the development of DLTs in the securities markets in June 2016.



Bank Regulatory

Bank regulators throughout the world have begun to consider the deployment of DLTs in principle and are considering the potential that the technology has to transform many banking functions. But DLTs pose complex regulatory and supervisory challenges for bank regulators.

The Governor of the Bank of England, Mark Carney, has spoken positively of the Bank's engagement with emerging financial technology ("fintech") and that the Bank is exploring the use of DLTs in its "core activities," including the operation of the Real-Time Gross Settlements System (RTGS). What DLT

applications are appropriate for banks and the safety-and-soundness considerations are important for banks to consider.

As at the time of writing, financial regulators in the United Kingdom and Singapore had established modified regulatory regimes for the testing of new fintech businesses (regulatory sandboxes) including those involving DLTs, with Australia due to follow, and regulators in those jurisdictions have signed agreements to support fintech companies that enter each others' markets.

Mayer Brown's financial services team advises banks and other regulated financial institutions throughout the world on prudential and other regulatory requirements. Members of the team routinely work with banks and bank regulators to address complex issues that novel business practices raise.

The team has advised a number of financial institutions on legal and regulatory issues related to various DLT applications.



Investments

As the sector has matured, established businesses and venture funds have begun to make significant investments, with an aggregate of VC investments of \$1.2 billion by mid-2016 (Coindesk, Moody's Investor Service). Mayer Brown's interdisciplinary team provides legal advice at every stage of the JV and strategic alliance life cycle, from formation, growth and exit. Recent representative experience includes:

- advising a global professional services company in its investments in a blockchain technologies company.



Business Technology Sourcing

With many established financial institutions teaming up with new startups to develop permissioned DLTs, the need for effective collaboration and technology sharing has become important, particularly as institutions seek to establish scaled platforms for DLT business. At the time of writing many service providers have begun to launch new platforms offering environments for customers to build and deploy their own DLTs (often referred to as "Blockchain as a Service").

As part of its wider Fintech practice, Mayer Brown advises technology and financial institution clients on establishing consortium projects, including for the development of DLT platforms. Recent representative experience includes:

- advising a global bank on its participation in a multi-bank consortium to develop blockchain technology for use by the financial services industry.
- advising a consortium of fourteen banks on the US aspects of the creation of and investment in a utility to manage collateral margining functions to be outsourced by the banks.

Insurance

It is anticipated that DLTs will have a significant impact on the insurance sector as the technology will offer scalable solutions for cost reduction but also offer new efficient processes to facilitate placement, and streamline claims management, accounting and customer identification.

Attention has been given to the role that self-executing smart contracts may play in automating the claim evaluation and adjustment process. Global Insurer Allianz recently announced it has successfully transacted a natural catastrophe swap on a blockchain with smart contracts that will automatically execute payments under the contract once predetermined parameters (e.g., natural disaster and weather data) are received.

Mayer Brown has one of the leading global insurance industry practices, representing nearly 400 insurers and insurance-related entities in transactional, regulatory and dispute resolution matters globally. The firm takes a team-oriented and interdisciplinary approach to give informed, practical advice on all manner of sophisticated regulatory matters.

Trade Receivables Finance

International trade and supply chain transactions have long been considered an ideal “use case” for DLTs, with the prospect of better coordinated payments and logistics, reductions in risk and greater availability of financing, as multiple parties record and verify transaction details on DLT platforms.

In July and August 2016, a number of major international institutions announced successful tests of DLT platforms to conduct trade transactions and issue letters of credit (including employing the Hyperledger, Ripple and Corda distributed ledgers).

Mayer Brown has been a leader in the global trade receivables market and has extensive experience with all manner of trade finance matters, including the structuring of sophisticated structured trade finance transactions and documentation. The firm is particularly well-known for being at the forefront of developing and implementing ABL structures, receivables finance products and Supply Chain Finance Programmes. With one of the strongest structured finance teams in both Europe, the Americas and Asia, the firm is regularly engaged on major projects in jurisdictions across the globe.

Real Estate and Mortgages

While some projects are underway to explore the use of DLTs to record ownership of real estate (including by the governments of Georgia, Honduras and Ghana), it is not anticipated that many governments will consider replacing existing land registry systems with DLT platforms. DLTs however can be used to track beneficial ownership in real estate in tandem with an existing centralised registry, such as via a nominee system (whereby a party is recorded as the legal owner of a real estate interest in the official government database, but holds the property interest on behalf of a beneficial owner). The beneficial interests could be recorded and tracked using a distributed ledger.

Mayer Brown lawyers have extensive experience working with issues related to the Mortgage Electronic Registration Systems, Inc. (“MERS”) and other nominee systems. Representative experience includes:

- Served as special mortgage banking counsel to Intercontinental Exchange in its purchase of MERS Holdings, Inc.
- Participated in initial drafting meetings of the Federal Reserve Bank of New York’s draft National Mortgage Note Repository Act, which is designed to create a book entry system for promissory notes evidencing residential mortgage loans.

Mayer Brown is at the forefront of emerging technologies to ensure our clients are prepared for the future.

Please contact a member of the team or your usual Mayer Brown contact to discuss this subject further.

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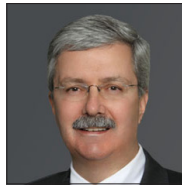
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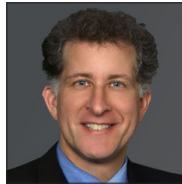
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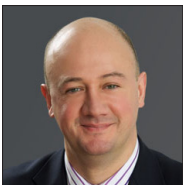
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About Mayer Brown

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We are noted for our commitment to client service and our ability to assist clients with their most complex and demanding legal and business challenges worldwide. We serve many of the world's largest companies, including a significant proportion of the Fortune 100, FTSE 100, CAC 40, DAX, Hang Seng and Nikkei index companies and more than half of the world's largest banks. We provide legal services in areas such as banking and finance; corporate and securities; litigation and dispute resolution; antitrust and competition; US Supreme Court and appellate matters; employment and benefits; environmental; financial services regulatory and enforcement; government and global trade; intellectual property; real estate; tax; restructuring, bankruptcy and insolvency; and wealth management.

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