



Seizing new potential

KPMG's Digital Ledger Services



kpmg.ca

Explore the real possibilities

Blockchain has sparked a new wave of digital innovation throughout the industry, primarily in the financial services sector. And it is easy to see why. Using a decentralized technology approach, blockchain's distributed ledger technology offers the potential to drive significant efficiencies and execute real-time transactions in discreet, secure, and highly cost-effective new ways.

And that is just the beginning...many other potential use cases continue to be identified and explored.



How do you know if blockchain is right for your organization?

Whether blockchain is right for you at this time may depend on various factors such as your business model, the services and products you offer, the profile of your automation, and the volume of your offerings. By using a scorecard for prioritizing use cases, we can provide a clear assessment of how blockchain can best address the needs of your organization.

Data



- Which data needs to be shared with whom and when?
- What kind of assets will be transferred?
- Where should the data be stored?
- Does it need to be authenticated and notarized?

Technology



- What does the underlying existing technology landscape look like and in which way would it be impacted?
- What is the underlying technology cost?

Industry



- Is there an industry-driven event requiring a refocus on current operations, to do things faster, with more trust?
- Which factors need to be considered?

Process



- How is the process done today versus a DCL application?
- How is agreement/consensus reached on the business level/data level?
- Who is allowed to validate transactions?

Performance/Security



- Can the solution scale to my needs?
- Are my security requirements met?
- Does the transaction record need to trigger further events (smart contract)?

Business Case



- What is the overall business case including the consideration of implementation cost?
- What is the ROI?
- Is there sufficient scale effect?

Counterparties



- Which entities create and post transactions?

People



- Which skills and organizational changes would be needed?

Regulatory



- Does that solution help to address my regulatory requirements in a more efficient way?

Source: KPMG Research

How do you know if blockchain is right for your organization?

Do not get left behind. As blockchain momentum continues to build, now is the time to explore the potential use of blockchain capabilities within your organization. Not sure where to start?

Approach					
Current-State Review	Future-State Definition	Business Case and ROI	Proof of Concept	Prototyping	Implementation Road Map
<ul style="list-style-type: none"> Obtain analysis and documentation supporting current state for mid office and back office Hold review sessions with key mid-office and back-office personnel to understand and analyze pain points and process inefficiencies Obtain an understanding of current-state technological architecture and interfaces Asses current-state processes, capabilities, technologies, and constraints in the context of candidate use cases 	<ul style="list-style-type: none"> Based on initial review of current state documents and analysis of mid-office and back-office functions, define future-state architecture Define investments in people, process, technology, and approaches required to achieve future state Define changes to future-state mid-office and back-office functions based on the introduction of blockchain. 	<ul style="list-style-type: none"> Validate relevancy of initial use case-based on current and future-state analysis Identify high-level requirements and investments Discuss with key personnel and/or stakeholders to validate assumptions, risks, costs, and metrics Draft business case and ROI and socialize with key stakeholders. Determine if findings warrant pursuit of POC 	<ul style="list-style-type: none"> Develop detailed business process and transaction scenarios to support use cases Develop a detailed set of requirements and design documents Document architecture, document data sources and data flow and scope of POC Identify hardware requirements, hosting location Build Virtual Machines, load Ethereum blockchain, build POC 	<ul style="list-style-type: none"> Choose the technical tool kit to be used depending on requirements for scalability, security, performance, etc. Setup Mock/Test Environment Develop usable data set Develop prototype based on architectural design Test, evaluate, and allow for at least two prototype iterations 	<ul style="list-style-type: none"> Review Business Case and ROI based on results of POC and prototyping Determine scope and viability to implement Provide recommendations, and identify dependencies and risks that will transform current state to future state

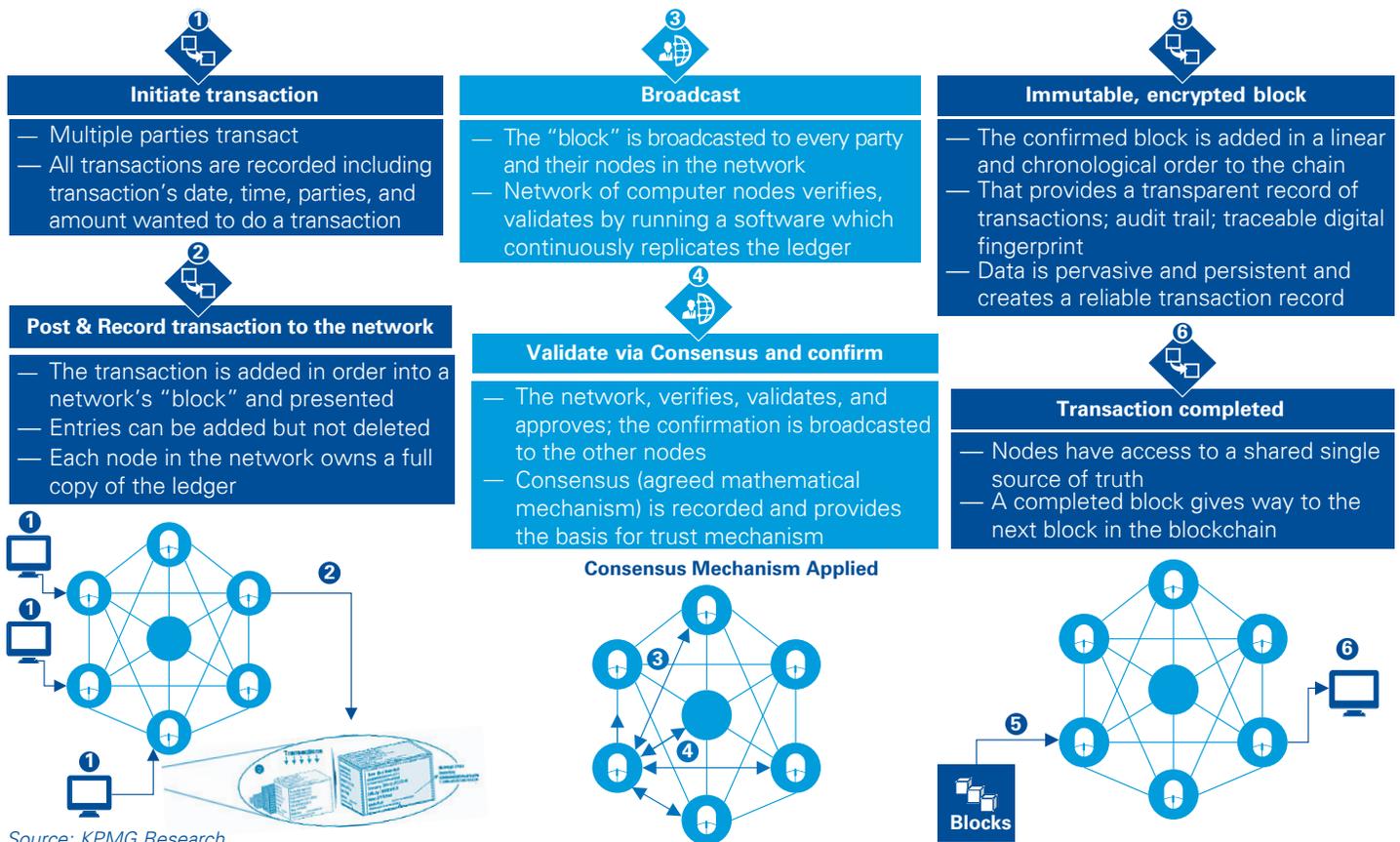
KPMG Digital Ledger Services can help

KPMG Digital Ledger Services can help. We offer a suite of services designed to provide full support at every stage of development—from proof of concept to designing relevant use cases and integrating systems and operations through to ongoing management of a company’s blockchain infrastructure.

	Proof of Concept (PoC)	Strategy	Business Case Justification	Requirements Development	Use Case Solution	Business Case Realization	Managed Service
Activities	<ul style="list-style-type: none"> Define the objectives and scope of the pilot program Determine if the solution meets the business needs Develop a prototype for testing Establish the success criteria for the pilot, with input from all stakeholders and users Assess hardware and software, system and database design, and procedures 	<ul style="list-style-type: none"> Determine business objectives and drivers Define project scope Identify stakeholders and assess solution providers Determine business case assumptions Evaluate related business rules Review current-state systems, controls, and reporting 	<ul style="list-style-type: none"> Identify and analyze the strategic options Perform opportunity analysis Justify why the investment will return the initial commitment Show where there will be costs savings Recognize stakeholder impacts 	<ul style="list-style-type: none"> Develop technical and functional requirements Evaluate system needs, business processes, and organizational change needs Identify and interview system end users Recognize quality attributes, external interfaces, and constraints Validate requirements and performance expectations 	<ul style="list-style-type: none"> Develop a detailed use case solution Define actors and project priority Identify constraints, assumptions, triggers, rules Define conditional threads and pre-conditions Explain and design the architecture framework Develop process flow(s) using collaboration, sequence, class, and activity diagrams 	<ul style="list-style-type: none"> Analyze existing (including legacy) and emerging systems for integration Review current policies and procedures for updates as necessary Generate and cross-validate consensus models Perform UAT and stress tests for work flow conformance and integration 	<ul style="list-style-type: none"> Governance and ongoing management Create delivery project plan Define roles and responsibilities Establish communication protocols Develop service agreements and KPIs Build a comprehensive compliance strategy Status reporting
Deliverables	<ul style="list-style-type: none"> PoC testing results report 	<ul style="list-style-type: none"> Revenue enhancement models Business case development Target Operating Model design Solution Provider Assessments 	<ul style="list-style-type: none"> Recommendations and next steps Possible risks and mitigations 	<ul style="list-style-type: none"> Business Requirements Documentation Functional Requirements Specification 	<ul style="list-style-type: none"> Architecture design Cross chain operability 	<ul style="list-style-type: none"> Regulatory integration Work flow conformance Integration with legacy systems Operations optimization Consensus model validation results 	<ul style="list-style-type: none"> Integrated governance framework Repeatable audit and testing Consensus and/or audit node validation

What exactly is blockchain?

As a distributed ledger database, blockchain is able to maintain a continuously-growing list of transaction records that are considered immutable, and it is increasingly becoming the destination platform for financial services companies.



Recognize the potential benefits

Blockchain has far surpassed its previous reputation as the technology underpinning the digital currency, Bitcoin. Today, blockchain generates its own excitement and inspires innovation due to the sheer magnitude of its disruption potential within financial services and beyond.

Some of the many potential benefits associated with blockchain include the ability to:

- **Gain increased efficiencies** by automating and streamlining back-office operations, enabling peer-to-peer solutions, removing intermediary services, and reducing post-transaction latency and counterparty exposures.
- **Increased efficiency in real-time settlements worldwide** with greater transparency and increased liquidity.
- **Reduce costs** through automation and by leveraging the cloud and eliminating the need for additional servers, simplifying infrastructure and solving significant system integration issues.
- **Increase security** with cryptography. With blockchain, all data is imprinted and immutable. The ledger creates a trail of financial DNA that lowers the possibility for fraud, theft, or compromising sensitive data.
- **Enhance regulatory compliance** by offering detailed, factual evidence and reliable documentation at a lower cost and creating a concrete audit trail. As a result, auditors and regulators will be able to rapidly monitor the flow of financial data and avoid after-the-fact verification.

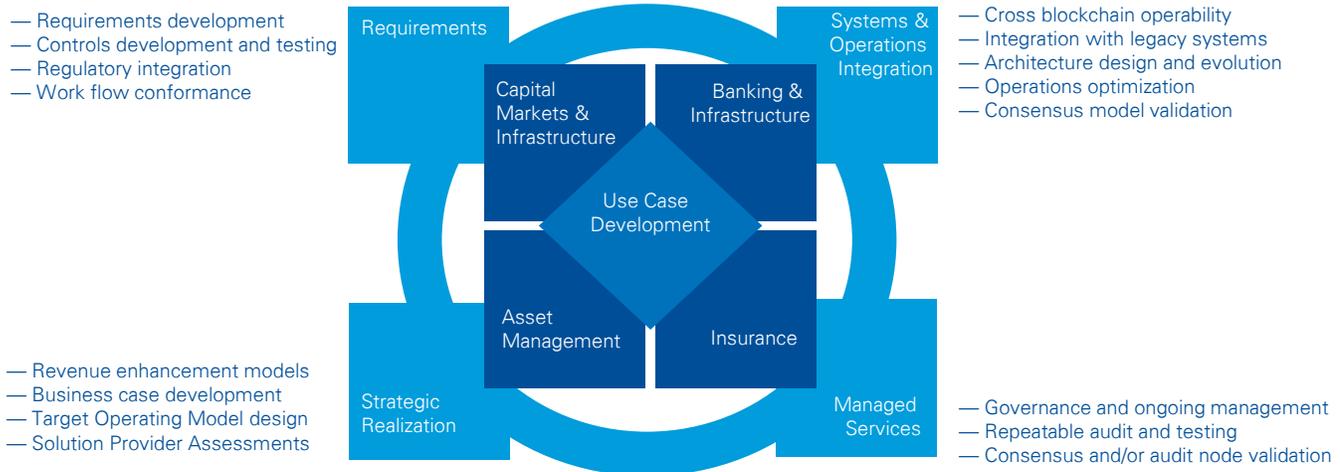


KPMG Digital Ledger Services

KPMG Digital Ledger Services focuses on helping clients derive the maximum benefit from blockchain technology. We can help you identify and define an effective strategy to determine, construct, and manage relevant use cases that integrate into other blockchains as well as any existing legacy systems and operations within your organization.

Our services incorporate strategic realization, requirements guidance, systems and operations integration, and managed services with the potential to address data governance and potentially conventional audit services such as platform audit and tax services.

KPMG Digital Ledger Services for Financial Services



KPMG offers specialized services in the areas of:

- Strategic realization
- Requirements guidance
- Systems and operations integration
- Managed services.



Realize the KPMG advantage

KPMG's Digital Ledger Services focuses on providing client support from conceptualization to ongoing management. We have approximately 160 executives and developers worldwide throughout our various KPMG member firms dedicated to blockchain. And we are anchored with a blockchain coding and development group that addresses proof-of-concept, prototyping, and integration. This group, in combination with other practice support, provides a single point of delivery for our clients.

Unlike some of our competitors, we are not beholden to proprietary blockchain solutions and are well-positioned to provide the necessary objective guidance and specialization required to make use cases successful. In addition, KPMG is joining forces with some of the top technology providers, such as Microsoft. Through its strategic alliance, KPMG and Microsoft will jointly work on blockchain initiatives—with Microsoft providing the blockchain and cloud technologies and KPMG providing its broad suite of services—which will help clients efficiently and securely move to the cloud, while adopting disruptive technologies.

Currently, we are working with clients on a wide range of global blockchain projects, including the qualification of a blockchain solution for a major U.S. Bank for global payments and the development and prototyping of a use case for uncleared Swaps for a global banking and markets client, among many others.



Seize the blockchain opportunity now

Embracing a rapidly-advancing new technology that disrupts business as usual is not always easy. KPMG will help keep you educated on the growing blockchain ecosystem, informed of new blockchain developments, and aware of the evolving regulatory landscape. By designing a tailored approach, we can help you focus on ways blockchain can benefit your organization. We incorporate strategy, security, cost, privacy, performance, risk management, and more. The purpose is to work with you to create relevant use cases that enable real, scalable solutions that help drive value for your organization.





Contact us

For more information on how KPMG can help you seize new potential with digital ledger technology, contact:

United States

Eamonn Maguire
U.S. and Global Digital Ledger Services Leader
Managing Director, Advisory - Capital Markets
T: 646-489-2073
E: emaguire@kpmg.com

David Montes
Managing Director, Advisory - Banking
T: 404-979-2115
E: dlmontes@kpmg.com

Michael Adler
Principal, Advisory - Insurance
T: 212 954 1795
E: michaeladler@kpmg.com

Jeff Kollin
Principal, Advisory - Alternative Investments
T: 917-438-3946
E: jkollin@kpmg.com

Sigrid Seibold
Principal, Advisory - Capital Markets
T: 212-954-1843
E: sigridseibold@kpmg.com

Canada

Mark Smith
National Industry Leader, Financial Services
T: 416-777-3395
E: marksmith@kpmg.ca

Lian Zerafa
Partner, National Consulting Financial Services Industry Leader
T: 416-777-8271
E: lzerafa@kpmg.ca

kpmg.com/socialmedia



Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act upon such information without appropriate professional advice after a thorough examination of the particular situation.

The KPMG name and logo are registered trademarks or trademarks of KPMG International.

© 2016 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. The KPMG name and logo are registered trademarks or trademarks of KPMG International. NDPPS 593394