



# HYPERLEDGER

BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

Introducing Hyperledger: How Open Source  
Blockchain Technology Will Change Everything

# Brian Behlendorf, Executive Director

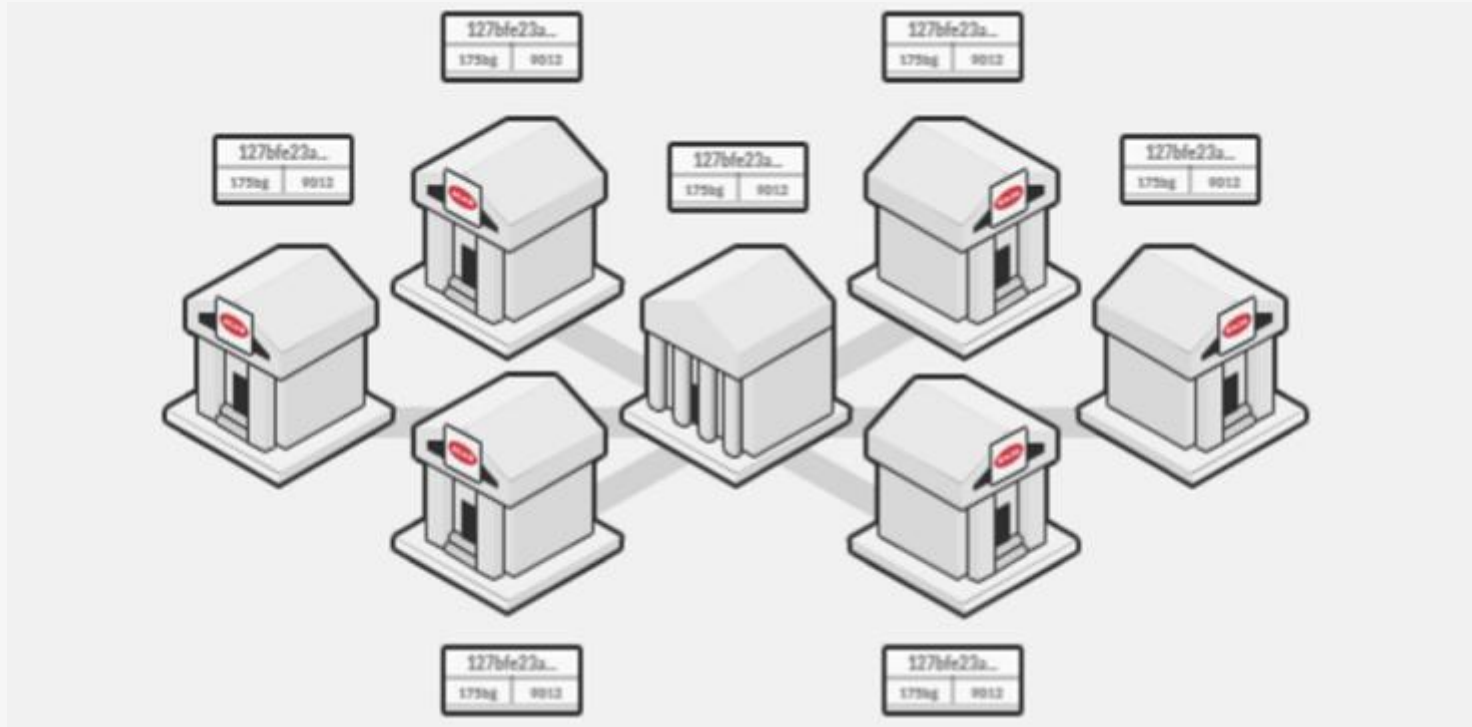
Behlendorf was a primary developer of the Apache Web server, the most popular web server software on the Internet, and a founding member of the Apache Software Foundation. He has also served on the board of the Mozilla Foundation since 2003 and the Electronic Frontier Foundation since 2013. He was the founding CTO of CollabNet and CTO of the World Economic Forum. Most recently, Behlendorf was a managing director at Mithril Capital Management LLC, a global technology investment firm.



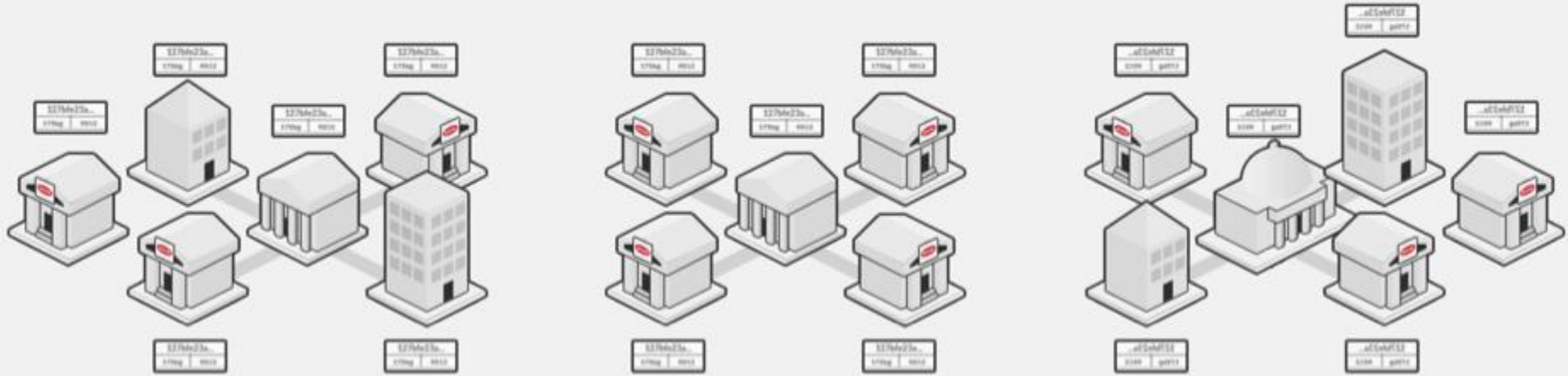
**HYPERLEDGER** PROJECT



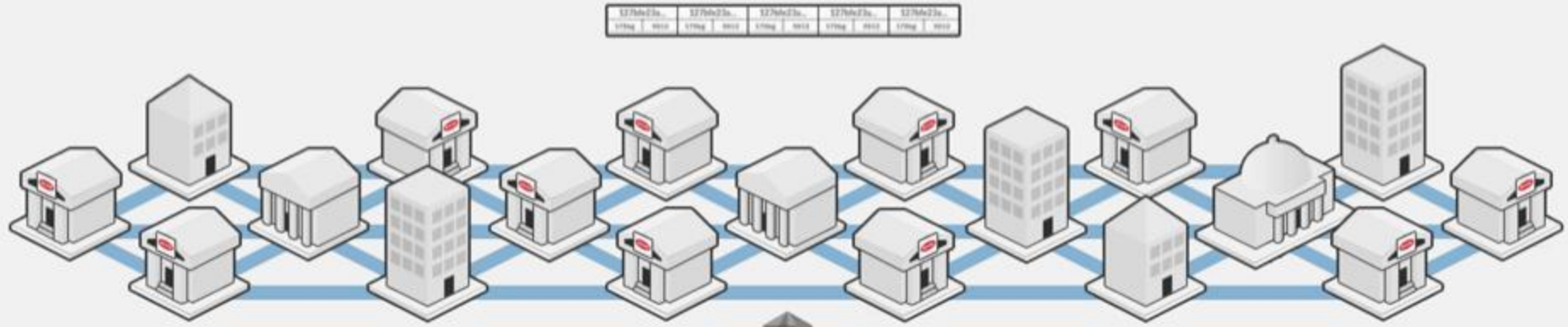
# The Problem with Traditional Databases



# The Problem with Traditional Databases



# The Blockchain Solution



# Blockchain In The News



[Walmart, IBM and Chinese Academics Explore the Use of Blockchain for Supply Chain to Help Bring Safer Food to Dinner Tables Across China](#)



[Acronis Offers Immutable Blockchain Data Authenticity Verification and Universal File, Block and Object Support With Acronis Notary and Acronis CloudRAID](#)



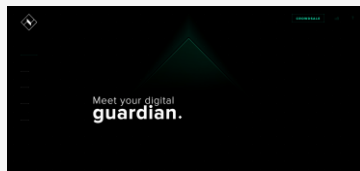
[Chinese Government Unveils Blockchain Paper – at Major Blockchain Summit](#)



[Korea Looks to Blockchain for New Digital Currency](#)



[Disney Releases Blockchain Platform 'Dragonchain'](#)



[Ukrainian Startup Nodio Introduces Blockchain-powered Wifi Router](#)



[EY Startup Challenge Blockchain Pilots Set to Shake up Media and Energy industries](#)



[UNICEF Makes Venture Capital Investment in Blockchain Project in South Africa](#)



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# Blockchain In The News



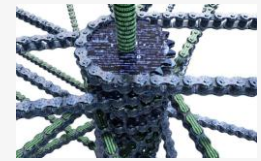
[Insurers Launch New Blockchain Consortium – B3i](#)



[Ethereum-based Inchain – a Blockchain Insurance Platform Raises \\$130,000 in First Week of ICO](#)



[IBM Helps FinTechs and Banks Address Blockchain Know Your Customer \(KYC\) Challenge](#)



[Banking Blockchain Consortium R3 Tests Interbank Cross-Border Payments With Ripple](#)



[Synechron Wins Global Insurance Industry Innovation Award for Blockchain](#)



[China's Leading Online Insurer ZhongAn Aims At Blockchain and Launches ZhongAn Technology](#)



[China Foreign Exchange Trade System joins R3 blockchain consortium](#)



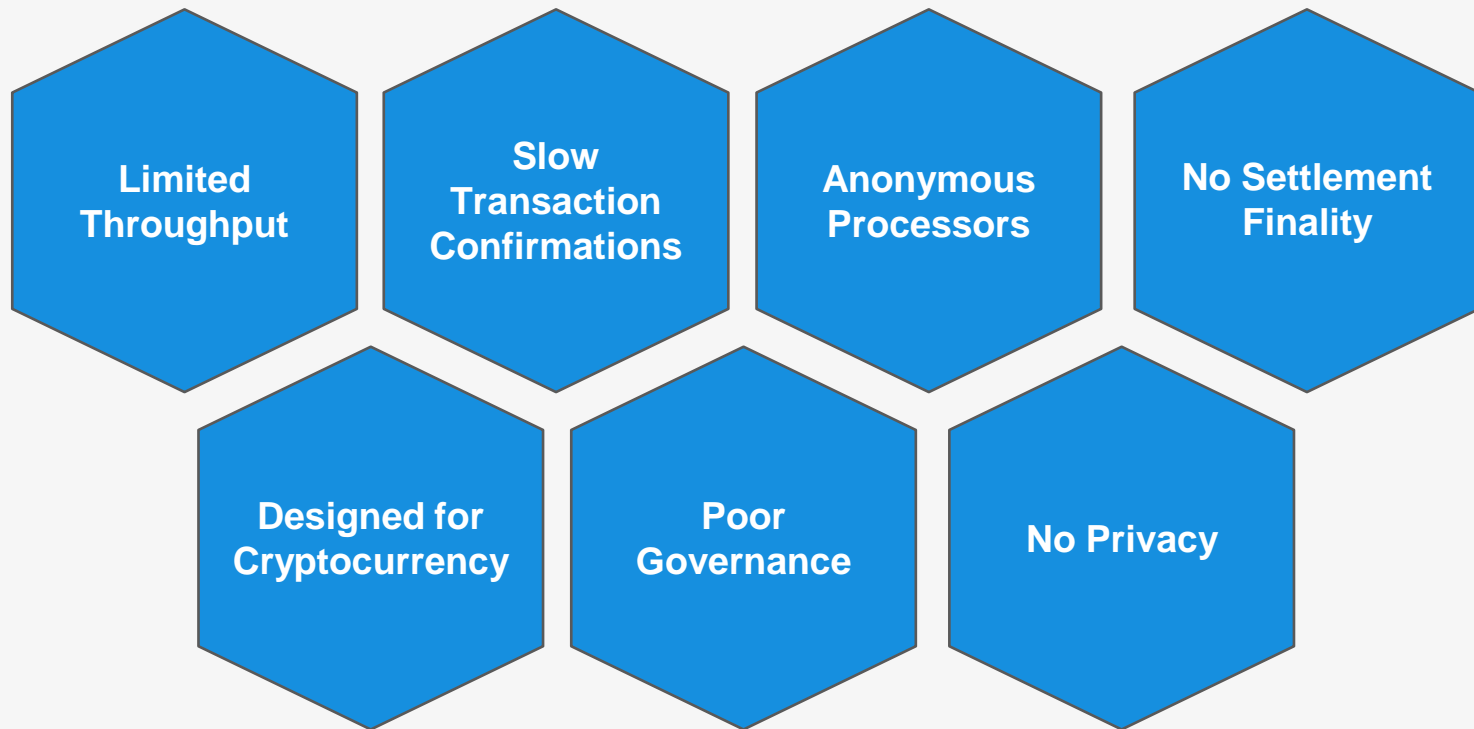
[Fluent partners with Euler Hermes to Explore Blockchain Use-Cases in Trade Finance](#)



**HYPERLEDGER PROJECT**



# Existing Blockchains





# Introducing Hyperledger Project

**Open source** collaborative effort to advance cross-industry **blockchain technologies**.

Hosted by  
**The Linux Foundation.**

**Global collaboration** spanning finance, banking, IoT, supply chains, manufacturing and technology.



# Project Goals

Build an Open Source developer-focused **community of communities** to benefit an ecosystem of Hyperledger-based solution providers and users, focused on blockchain-related use cases that will work across a variety of industry sectors.

Through this, create a family of enterprise grade, open source blockchain **frameworks, platforms, and libraries**, upon which anyone can build and run their own applications to meet real business needs.

**Involve** developers, service providers, solution providers and end users in the development and promotion of the software, using the best practices of a multi-stakeholder Open Source community.

**Host** the collaboration environment for the community, establishing a neutral home for community infrastructure, meetings, events and collaborative discussions and providing structure around the business and technical governance of Hyperledger.





The Linux Foundation® is the organization of choice for the world's top developers and companies to build ecosystems that accelerate open technology development and commercial adoption. Together with the worldwide open source community, it is solving the hardest technology problems by creating the largest shared technology investment in history. Founded in 2000, The Linux Foundation today provides tools, training and events to scale any open source project, which together deliver an economic impact not achievable by any one company.

The Linux Foundation has **16 years** experience of providing **governance structure** and infrastructure to support the development of large scale, successful open source projects such as:

CLOUD  FOUNDRY



**HYPERLEDGER** PROJECT

# A World of Many Chains

There will not be only one blockchain, or a chain-of-all-chains.

There will be many public chains and millions of private chains, potentially each with a different consensus mechanism, preferred smart contract language/mechanism, and other characteristics.

The more common code underlying these chains, the better for everyone.

This is still early days – perhaps like 1994 and the Web?



# A Community of Multiple Communities & Projects

A project at Hyperledger involves:

- a team of volunteer developers,
- building code in the open,
- managing their own roadmap and release schedule,
- responsible for following HL policies and requirements,
- encouraged but not required to align their code with other projects.

Across projects, we have:

- common software license: the Apache License v2,
- common IP framework: the Developer Certificate of Origin,
- common collaboration tools (Gerrit, Jira, Slack, email),
- promotion and branding as an equal to other projects,
- security processes and practices.



# Hyperledger Projects in Incubation

1

**Fabric:** Blockchain Implementation intended as foundation for developing applications or solutions. Modular architecture allows components, such as consensus and membership services, to be plug-and-play

2

**Iroha:** Distributed Ledger Project designed to be simple and easy to incorporate into infrastructural projects requiring distributed ledger technology.

3

**Sawtooth Lake:** Distributed Ledger Technology with potential in many fields, from IoT to Financials and an architecture that recognizes the diversity of requirements across that spectrum. Support for both permissioned and permissionless deployments.

For complete list of Blockchain Framework projects in incubation, including sub-projects, visit [www.Hyperledger.org/community/projects](http://www.Hyperledger.org/community/projects).



# Why Hyperledger?

Collaboration is hard.

It's even harder when competing efforts have different licenses, different brands, different user bases and different egos.

In 1994, who thought web advertising might help build a company like Google?

In 1994, who thought Microsoft would become a major contributor to the Linux kernel?

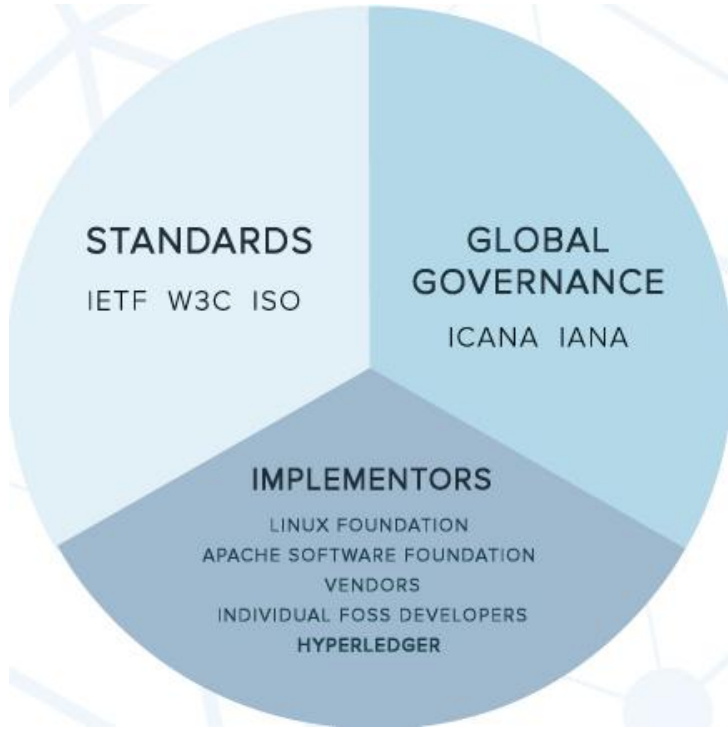
Getting the social dynamics of a community right is as important, and as challenging, as getting the code right.

And if the community is fragile, so is the project, so is user confidence, so is its future.





# Implementations, Standards, and Global Governance



There is usually a division in Internet technology communities between standards, global governance, and implementations.

This allows communities to scale to meet challenges, find ways to collaborate with competitors, and fight better battles.

Because of this, you will never see a “HyperCoin”, at least not from HL/LF

But yes to currency-driven platforms!



# Hyperledger By The Numbers

**95+**

Members

**115+**

Contributors

**6**

Projects in  
Incubation

**2.3K**

Membership  
Requests

**5X**

More requests than  
next largest in LF  
history

**6**

Hackfests

**8**

Community Working  
Groups

**<\$6M**

Membership  
Investment



“The most valuable role Hyperledger can play is to serve as a trusted source of innovative, quality-driven open source software development community; creating modular, open source components and platforms; all focused on distributed ledger and smart contract technologies. If Hyperledger can forge a brand that is widely seen as the accepted default ‘safe’ deployment platform for enterprise teams, and be seen as a great home for active collaboration around new technologies, then I think we can say ‘mission accomplished’.”

– Brian Behlendorf,  
Executive Director,  
Hyperledger Project



# Modular “Umbrella” Approach

Requirements for blockchains vary greatly across different use-cases. There will not be a one-size-fits-all solution.

Hyperledger serves as home and incubator for multiple implementation efforts, with a consistent approach to intellectual property, community collaboration standards, overall branding (“Hyperledger \_\_\_\_”) and an encouragement to either work together or usefully differentiate.



# 8 Community Working Groups

<b>Technical Steering Committee (TSC)</b>	<b>Requirements Working Group</b>	<b>Whitepaper Working Group</b>	<b>Protocol Working Group</b>
<b>Architecture Working Group</b>	<b>Fabric Technical Planning</b>	<b>Identity Working Group</b>	<b>Fabric SDK Working Group</b>



# Use Case Inventory

A snapshot from the Hyperledger Requirements Working Group (WG) - <https://wiki.hyperledger.org/groups/requirements/use-case-inventory#inventory>

Category	Use Case
Capital Markets	Credit Default Swaps, Custody, Syndicated Loan, Trade Capturing, Trade Finance Letter of Credit, Corporate Action, Equity Contracts, Asset Depository, Currency Swap, Interest Rate Swap, Post Trade - Settlement - Delivery versus Payment (DvP), Client Onboarding Of Institutional Customers Into Investment Banks, Commodities, Fixed Income, Foreign Exchange, Gold Bullion Title And Trading, Money Markets, OTC Bond Options, OTC MBS Options, Trade Matching Smart Contracts, US 144a Style Private Shares, US Treasury Repos Sovereign Bond Repurchase Agreements
Financial Services	Financial Reference Data, Micro Lending, Payments – interbank, Credit Cards, Cross Border Remittances, Escrow
Government / Legal / Regulatory	Citizen ID Tracking, Global KYC Database, Property Ownership, Charity, Commonwealth Countries Shared Id System, Cross Border Capital Controls, Cross Border Data Transfer, Fair Trade and Fair Labor Supply Chain, Federation Lifecycle, ICANN / TLD / DNS, Identity Theft, Key Management Private Key Loss, One Entity One Vote, Panama Papers, Property Titles and Land Records, Right To Be Forgotten, Right To Participate, RSA - The Firm Getting Hacked, Secure Hardware, SWIFT - Bangladesh Unauthorized Transfer, SWIFT - Ukraine Crisis Sanctions, Voting
Healthcare / Medical	Clinical Trial Results, Counterfeit drug prevention and detection, Electronic Health Records
Internet of Things	Internet of Things
Publishing	Sensitive Record Tracking, Music Publishing
Supply Chain / Logistics	Luxury Goods Tracking, Shipping Manifests, Supply Chain Logistics, Diamonds Physical Identity And Title
Travel / Hospitality	Airline Miles





# Community and Ecosystem Engagement

Brian Behlendorf keynoting multiple events across the globe with Hyperledger exhibition at key events in 2016.

[hyperledger.org/news/events](https://hyperledger.org/news/events)

Global Meetup structure to launch in 2H '16 to organize grass-roots engagement.

Active engagement with technology and finance journalists and analysts to continue educating the market on Hyperledger.

[hyperledger.org/news](https://hyperledger.org/news)

Technical Steering Committee hosts regular online and face-to-face hackathons – join our mailing lists to learn about these and other technical activities. [hyperledger.org/community](https://hyperledger.org/community)



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# Hyperledger In The News

**WIRED** **THE WALL STREET JOURNAL.** **FINANCIAL NEWS** **FORTUNE**

[Tech and Banking  
Giants Ditch Bitcoin  
for Their Own  
Blockchain](#)



[Blockchain Project  
Hyperledger Unveils  
Iroha – a Bridge for  
Web and Mobile  
Developers](#)

[How Blockchain Will  
Save Your Life](#)



[R3 Blockchain  
Consortium to Open  
Source Corda Platform  
– Make Available to  
Linux Hyperledger](#)

[Another day, another  
blockchain consortium  
update –  
this time from the  
Hyperledger Project](#)



[Hyperledger's Next  
Act: A Blockchain  
Bridge to China](#)

[IBM, J.P. Morgan, and  
Others Build a New  
Blockchain for  
Business](#)



[Huawei, the World's  
Largest Telco  
Manufacturer, Joins  
Linux's Blockchain  
Open Source Project  
Hyperledger](#)

# Recent Hyperledger Finance POCs

<b>Projects and POCs</b>	<b>Financial Institutions and partners</b>
<b>Thai Kasikornbank, IBM join forces on blockchain network</b>	Kasikornbank
<b>UBS Unveils Blockchain for Trade Finance at Sibos</b>	UBS
<b>CLS uses Hyperledger for FX</b>	CLS
<b>R3, eight banks successfully test Intel blockchain platform for bond trading</b>	R3, Intel, CIBC, ING Bank, HSBC, Scotiabank, Societe Generale, State Street, UBS and UniCredit
<b>IBM, China UnionPay Complete Block Chain Pilot Project</b>	China UnionPay
<b>IBM and Bank of Tokyo-Mitsubishi UFJ Collaborate on Hyperledger based Pilot</b>	Bank of Tokyo-Mitsubishi UFJ
<b>Banks pilot blockchain to simplify trade</b>	Bank of America Merrill Lynch, HSBC, Infocomm Development Authority of Singapore (IDA)
<b>Credit Mutuel Arkea applies blockchain tech to verify customer IDs</b>	Credit Mutuel Arkea
<b>Mizuho, IBM Partner to Test Digital Currency Settlements</b>	Mizuho Financial Group
<b>The Moscow Exchange Joins HyperLedger</b>	The Moscow Exchange



# Hyperledger Premier Members



# Hyperledger General Members



# 24 Hyperledger Members Based in China

Premier Member:



General Members:



HYPERLEDGER PROJECT

# Hyperledger Associate Members



# Governing Board



Blythe Masters

GOVERNING BOARD CHAIR



Chris Ferris

TSC CHAIR



Chad Cascarilla



Charles Cai



Craig Young



Dan Middleton



Dave Treat



Jerry Cuomo



Kireeti Reddy



Robert Palatnick



Stefan Teis



Thierry Chevalier



Todd McDonald



Toshiya Cho



Umar Farooq



Yoshinobu Sawano





# Hyperledger Staff



Brian Behlendorf  
EXECUTIVE DIRECTOR

Brian Behlendorf is the Executive Director of Hyperledger Project.



Todd Benzies  
SR. PROGRAM MANAGER

Todd Benzies is the Sr. Program Manager of Hyperledger Project.



Greg Wallace  
DIRECTOR OF MARKETING

Greg is the Director of Marketing at Hyperledger Project.



Julian Gordon  
VP ASIA PACIFIC

Julian is the VP Asia Pacific at Hyperledger Project.



Ray George  
SENIOR DIRECTOR OF PR

Ray is the Senior Director of PR at Hyperledger Project



Jessica Rampen  
SR. PR MANAGER

Jessica is the Sr. PR Manager at Hyperledger Project.



Min Yu  
CLIENT SERVICES  
COORDINATOR

Min Yu is the Client Services Coordinator at Hyperledger Project.



Meredith Solberg  
MARKETING MANAGER

Meredith is the Marketing Manager at Hyperledger Project.



Ry Jones  
RELEASE ENGINEER

Ry is the Release Engineer at Hyperledger Project.



Rebecca Goldberg  
MEETING AND EVENT  
PLANNER

Rebecca is the Meeting and Event Planner at Hyperledger Project



# Technical Steering Committee



Arnaud Le Hors



Binh Nguyen



Chris Ferris



Dan Middleton



Greg Haskins



Hart Montgomery



Mic Bowman



Murali Katipalli



Richard Brown



Sheehan Anderson



Tamás Blummer



# Join Us!

Ensure the strength and longevity of a core technology to your business.

Publicly proclaim your leadership in the blockchain space.

Work with other blockchain leaders to develop and promote Hyperledger.

Visit [hyperledger.org/about/join](https://hyperledger.org/about/join)  
or email [info@hyperledger.org](mailto:info@hyperledger.org).



# More Information

<https://www.hyperledger.org>

An abstract graphic on the right side of the slide, featuring a complex network of white dots connected by thin blue lines, set against a dark blue background with faint geometric shapes.