

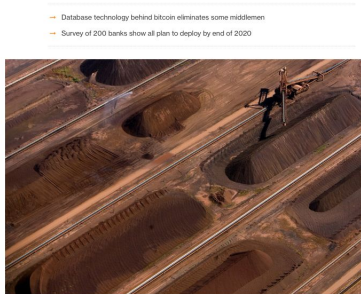
# ENTERPRISE ETHEREUM ALLIANCE

# Ethereum: Most Popular Blockchain Globally

With a global developer community of more than 30,000 contributors, Ethereum is one of the most popular blockchains and the technology of choice for many Enterprise blockchain developments.



# Enterprises are Already Deploying Ethereum Networks

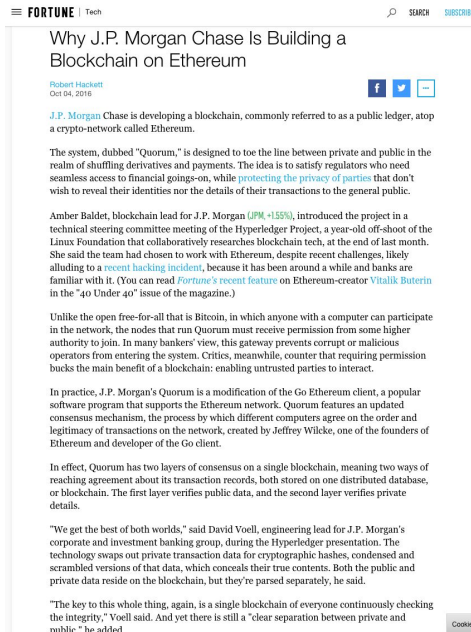


Iron ore awaits loading at a BHP Billiton loading facility in Port Hedland, Australia. (Photograph: Andrew Chapp/Bloomberg)

Vendors of mining giant BHP Billiton Ltd. typically keep track of rock and fluid samples and analyses with e-mails and spreadsheets. A lost file can cause major and expensive headaches since the samples help the company decide where to drill new oil wells.

**BHP's solution:** Early next year, it will start using the blockchain, a new, shared database technology that can't easily be changed or erased. A technician taking a specimen can attach data such as collection time, a lab researcher can add reports, and all will be immediately visible to everyone who has access. No more lost samples or frantic messages.

BHP is one of many large businesses putting the blockchain to use. For several years after it emerged in 2008, the technology behind the digital currency bitcoin held court on the fringes, attracting attention mostly from startups. Then in the past year or so, several large companies, including Nasdaq Inc. and Standard Chartered Plc, began testing it. Now comes the next phase: actual deployment of the blockchain in their operations, with the first major wave expected in 2017.



J.P. Morgan Chase is developing a blockchain, commonly referred to as a public ledger, atop a crypto-network called Ethereum.

The system, dubbed "Quorum," is designed to toe the line between private and public in the realm of shuffling derivatives and payments. The idea is to satisfy regulators who need seamless access to financial goings-on, while protecting the privacy of parties that don't wish to reveal their identities nor the details of their transactions to the general public.

Amber Baldet, blockchain lead for J.P. Morgan (JPM, +1.55%), introduced the project in a technical steering committee meeting of the Hyperledger Project, a year-old off-shoot of the Linux Foundation that collaboratively researches blockchain tech, at the end of last month. She said the team had chosen to work with Ethereum, despite recent challenges, likely alluding to a recent hacking incident, because it has been around a while and banks are familiar with it. (You can read Fortune's recent feature on Ethereum-creator Vitalik Buterin in the "40 Under 40" issue of the magazine.)

Unlike the open free-for-all that is Bitcoin, in which anyone with a computer can participate in the network, the nodes that run Quorum must receive permission from some higher authority to join. In many bankers' view, this gateway prevents corrupt or malicious operators from entering the system. Critics, meanwhile, counter that requiring permission bucks the main benefit of a blockchain: enabling untrusted parties to interact.

In practice, J.P. Morgan's Quorum is a modification of the Go Ethereum client, a popular software program that supports the Ethereum network. Quorum features an updated consensus mechanism, the process by which different computers agree on the order and legitimacy of transactions on the network, created by Jeffrey Wilcke, one of the founders of Ethereum and developer of the Go client.

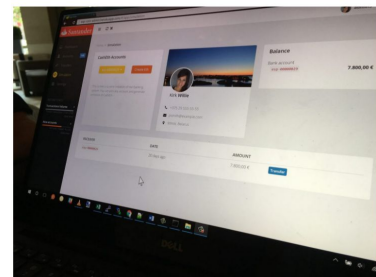
In effect, Quorum has two layers of consensus on a single blockchain, meaning two ways of reaching agreement about its transaction records, both stored on one distributed database, or blockchain. The first layer verifies public data, and the second layer verifies private details.

"We get the best of both worlds," said David Voell, engineering lead for J.P. Morgan's corporate and investment banking group, during the Hyperledger presentation. The technology swaps out private transaction data for cryptographic hashes, condensed and scrambled versions of that data, which conceals their true contents. Both the public and private data reside on the blockchain, but they're parsed separately, he said.

"The key to this whole thing, again, is a single blockchain of everyone continuously checking the integrity," Voell said. And yet there is still a "clear separation between private and public," he added.

## Santander Vies to Become First Bank to Issue Cash on Blockchain

Pete Rizzo (@pete\_rizzo) Published on September 25, 2016 at 04:43 GMT



Spanish banking giant Santander is working on a project that explores how it could digitize customer cash using the public ethereum blockchain.

Revealed today during a panel talk at Devcon2 by Etherbase founder and ethereum Java client developer Roman Mandelci, the news was confirmed by representatives of Santander. In statements, Santander said its goal is to open up its bank-issued funds to a community of innovators as a way of tapping additional efficiencies.

Given the recent deluge of proofs-of-concepts and consortium announcements, Santander's move to potentially issue digital cash on a live public blockchain emerges as one of the more unique projects globally. Running for more than a year, the ethereum network has a market cap of more than \$1bn and nearly 40,000 in daily transactions.

In interview, Mandelci explained that the Santander project envisions how the bank's customers could convert money from their real bank accounts into a 'tokenized' online currency called 'Cash ETH' that would be redeemable for paper currency.

Mandelci told CoinDesk:

"These tokens are backed by real money in Santander. At any moment you can get them back and get the dollars."



# Why Ethereum For Enterprise Blockchain

- ✓ **Open Source and widely available**
- ✓ **Easy to learn and high development productivity**
- ✓ **Rapidly growing ecosystem**
- ✓ **Public chain provides innovation and scales developer community**
- ✓ **Proven ability to tokenize complex assets**



# Why the Enterprise Ethereum Alliance

- ❗ The public Ethereum protocol is not optimized for private, permissioned networks.
- ❗ The current Ethereum Improvement Process is dominated by public network issues.
- ❗ Corporate users of Ethereum have been forced to tweak / fork open source implementation or rely on vendor extensions to meet their infrastructure.
  - => code base fragmentation
  - => lack of application portability and vendor lock-in
  - => duplicated efforts requirements



# Introducing Enterprise Ethereum



Enterprise Ethereum is an initiative to create a standard for private deployments of Ethereum networks, building upon the public Ethereum roadmap and retaining public Ethereum compatibility.



This initiative is driven by some of the largest corporate users of Ethereum, enterprise technology vendors and leading blockchain start-ups, with oversight from Vitalik Buterin and the Ethereum Foundation.



# Launching Enterprise Ethereum Alliance

The Launch Partners included 30 companies, representing many of the largest corporate users of Ethereum, Enterprise technology vendors and blockchain start-ups



# Guiding Principles

Enterprise Ethereum is a community of industry experts developing features and enhancements to Ethereum driven by the needs of enterprises adopting the technology.

- ◆ Development of a standard not a product
- ◆ Horizontal technology and general purpose platform
- ◆ Maintain compatibility with public Ethereum
- ◆ Leverage other existing standards (ISO/Swift/etc) and infrastructure

EEA also provides resources for businesses to learn about Ethereum and understand how to leverage this groundbreaking technology for increased efficiency, security, and profit.





# Goals

- ⊗ Governance and standards body for Enterprise Ethereum protocol
- ⊗ Retain compatibility with and enhance public Ethereum
- ⊗ Rapid technical innovation and enterprise-grade governance



# Short Term Technical Objectives

- ⊗ Modularized Ethereum implementation with pluggable consensus.
- ⊗ Benchmarked PBFT (or comparable) consensus algorithms.
- ⊗ Configurable privacy implementation, including permissioning (auth/auth) and data privacy.



# Short Term Governance and Development Objective

- ⊗ Foundational legal structure, funding model, and technical improvement process
- ⊗ Core working groups for governance, technical, and industry collaboration
- ⊗ Establish membership model to scale while retaining 'builder mentality' and essence



# Long Term Objective

To realise the potential of Ethereum in Enterprises, it is critical to make rapid progress on core technical issues and establish the appropriate structure and governance model, while taking into account the long-term requirements to insure stewardship of the protocol



# Governance

Enterprise Ethereum is a member-led organization and an open forum to create technical standards for private Ethereum networks, compatible also with the public Ethereum blockchain.



# Governance

Enterprise Ethereum will be incorporated as a non profit where governance is decentralized and member-led, this means:

- ◆ No top down decision making
- ◆ Voting based on contribution in building the technology or resources
- ◆ Member led proposals

Various member run committees reporting to the board, the executive leader and under the supervision of the advisory board and the governance board lead the way to the development of the technical standards.

Individual projects and collaboration can also be initiated by the members.



# Why Enterprise Ethereum



**A community of Ethereum early adopters and innovators**



**Key Enterprises from diverse sectors and global reach**



**Participants from the most innovative fintech companies and the Ethereum foundation / Vitalik**



**Focused objectives and weekly engagement**



**Public and private Blockchain**



**Option to build and expand applications on top of the open source code**



**Open source**



# Launch Members

accenture



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BBVA



J.P.Morgan



string





# Press coverage

The Press coverage of the launch event was unique. 300 guests attended in person and over 2000 followed the live stream event.

New York Times - <https://www.nytimes.com/2017/02/27/business/dealbook/ethereum-alliance-business-banking-security.html>

Reuters - <http://www.reuters.com/article/us-ethereum-enterprises-consortium-idUSKBN1662K7>

Fortune - <http://fortune.com/2017/02/28/ethereum-jpmorgan-microsoft-alliance/>

Business Insider - <http://www.businessinsider.com/r-jpmorgan-microsoft-intel-and-others-form-new-blockchain-alliance-2017-2>

Wall Street Journal - <https://www.wsj.com/articles/the-newest-bank-blockchain-will-this-be-the-breakthrough-1488285211>



# How To Get Involved

- 🔄 **Enterprise Ethereum Alliance launched on February 28 2017**
- 🔄 **Replay of the launch day is available on the [entethalliance.org](https://entethalliance.org) website**
- 🔄 **We will be adding additional members on an ongoing basis**

Interested parties should contact [info@entethalliance.org](mailto:info@entethalliance.org)

We are keen to add interested corporates, enterprise technology vendors and blockchain start-ups.



THANK YOU

