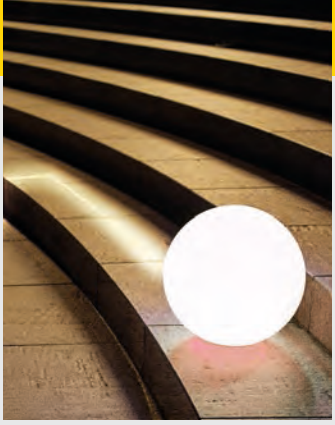
Blockchain innovation in wealth and asset management

Benefits and key challenges to adopting this technology

EY
Building a better working world

Contents



Introduction

Overview

Blockchain, the underlying technology of bitcoin, is drawing significant focus and investments from many financial institutions in the industry. Given the technology's potential to both disrupt and enhance processes and systems, many firms have recently dedicated resources to understand and integrate blockchain into their businesses.

This article will discuss how wealth and asset management firms are seeking out opportunities to harness the benefits of blockchain as well as key challenges to adopting this technology. Further, the article will highlight near-term practical applications for blockchain and how to approach blockchain innovation.

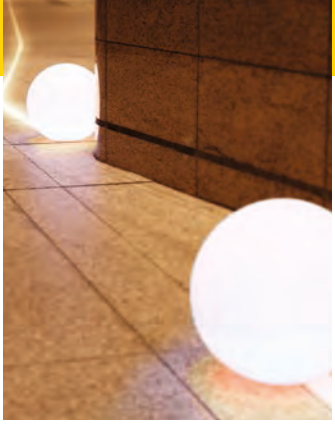
Evolution of blockchain technology

Blockchain technology as we know it today emerged in January 2009 as the underlying technology of bitcoin. While bitcoin created initial noise in the financial world, blockchain technology gained prominence as a hot topic of discussion by itself.

Continued development

As funding from venture capital firms continued to increase, what was considered the next generation of blockchain technology emerged in 2014 to include "smart contracts." The new programmable blockchains feature conditional logic, allowing contractual scenarios and terms to be coded.

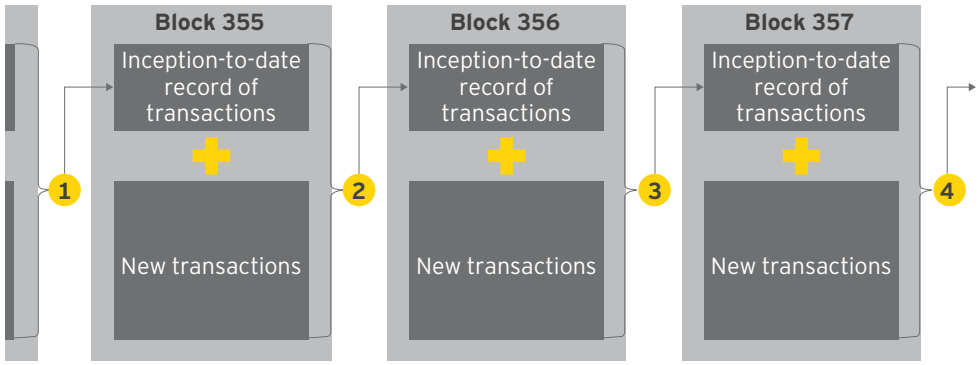
For example, a condition could be designed to release a defined amount of payment to participant A once participant B delivered a specific asset.

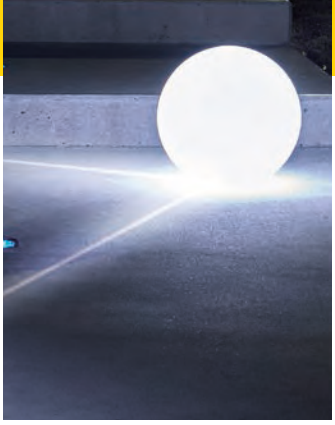


What is a blockchain?

A blockchain is a shared record of all transactions and related information for a particular entity. This shared record — a distributed ledger or database — is visible by all parties with permission to the record. A blockchain comprises an ever-increasing set of transaction data blocks (see diagram below) that are verified by members of the network, traditionally referred to as "miners."

Each block is a set of transactions between two or more parties (e.g., counterparty A pays counterparty B in exchange for an asset) and added to the existing chain of blocks, creating a complete history of transactions. With each additional block, the entire distributed ledger is synchronized and agreed upon by all participant nodes. All nodes are continuously validating the transaction history, resulting in a blockchain of immutable data.

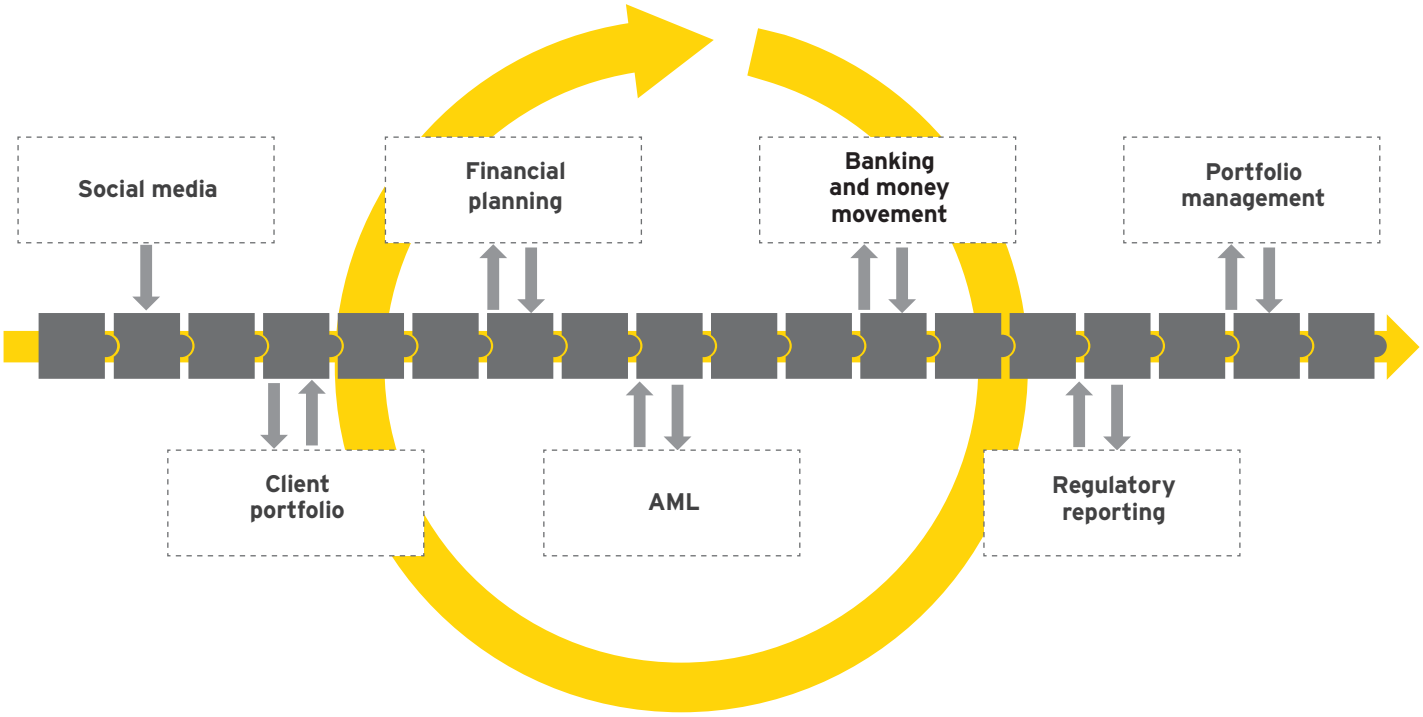




Applications of blockchain to wealth and asset management

Blockchain technology, also known as distributed ledgers, has a number of potential use cases within the wealth and asset management life cycle. Distributed ledgers are highly flexible; once implemented, they can be used to remove friction from the client onboarding process, streamline management of model portfolios, speed the clearing and settlement of trades, and ease compliance burdens associated with anti-money laundering (AML) and know your customer. The result is elimination of redundant functions, reduced operational expenses and increased opportunities to enhance the client experience. While blockchain technology is unlikely to replace current systems, it may be used to reconcile information across them or enable new infrastructure for new markets and products.

By extension, these concepts can expand to broader applications, such as rollovers, trusts, estates, insurance and other transactions where assets are moved between parties or contracts are executed. A distributed ledger supports the validation and execution of a transaction in near real time. The client experience is enhanced and the process streamlined, and costs are reduced.



Application of blockchain in wealth management

Blockchain can be leveraged to build a client profile in a much more efficient way. Storing client profile data on a blockchain allows for data points – profile data, preferences, net worth, account information, social media profiles – to be shared as needed, with each individual block of data being stored securely, but permissioned for access by the individual (read, write, edit) as needed.

Use case 1: client onboarding and profiling

Key drivers

Blockchain presents the possibility of revolutionizing client onboarding for wealth managers. In today's world, potential clients must provide proof of identification, residency, marital status, sources of wealth, occupation, business interests and political ties. Going through this process can take days or weeks to collect and verify the data.

Challenges

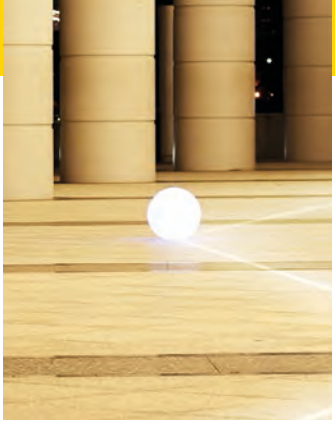
- Strict onboarding requirements
  - Proof of identification
  - Residency
  - Marital status
  - Sources of wealth
  - Occupation
  - Business interests
  - Political ties
- Complying with numerous reporting requirements
- Information security procedures
- Ongoing monitoring of profiles
- Automated clearinghouse (ACH) and automated customer account transfer (ACAT) systems take multiple days and involve manual processes using multiple systems and databases

Approach

- Profile stored on a blockchain/distributed ledger
- Trusted parties are granted access to all or part of the profile based on cryptography
- New relationships would be initiated by profile owner
- The system inherently enables an audit trail for tracking changes to the chain. As a result, processes requiring fact-checking, such as AML, are simplified
- Integrate blockchain technologies into onboarding and ACH and ACAT systems and processes

Benefits

- Can facilitate many key functions of onboarding:
  - Client and risk profiling
  - Financial planning
  - Anti-money laundering checks and money movement
- Can enhance or possibly replace traditional systems, such as ACH and ACAT
- Enables near-instantaneous transfers of assets between financial institutions with authenticated provenance of tracked changes



Use case 2: model management and trade order generation

Key drivers

The proliferation of open architecture investment offerings and the availability of third-party investment models in separately managed accounts have presented a number of operational challenges for wealth managers. Distributed ledger technology would allow portfolio managers to instantly communicate portfolio changes to all clients "subscribed" to the model, as well as enable real-time views of individual account performance, drift outside of tolerances and cash flows. Also, smart contracts would allow for the management of fees paid by the sponsors – essentially taking a payment every time the model is used or downloaded.

Challenges

- A wealth and asset manager using different platforms and data architectures causes difficulties in distributing, monitoring and updating third-party models.
- Firms must support redundant model management systems.
- Managers are often required to email models to program sponsors or use proprietary portals.

Approach

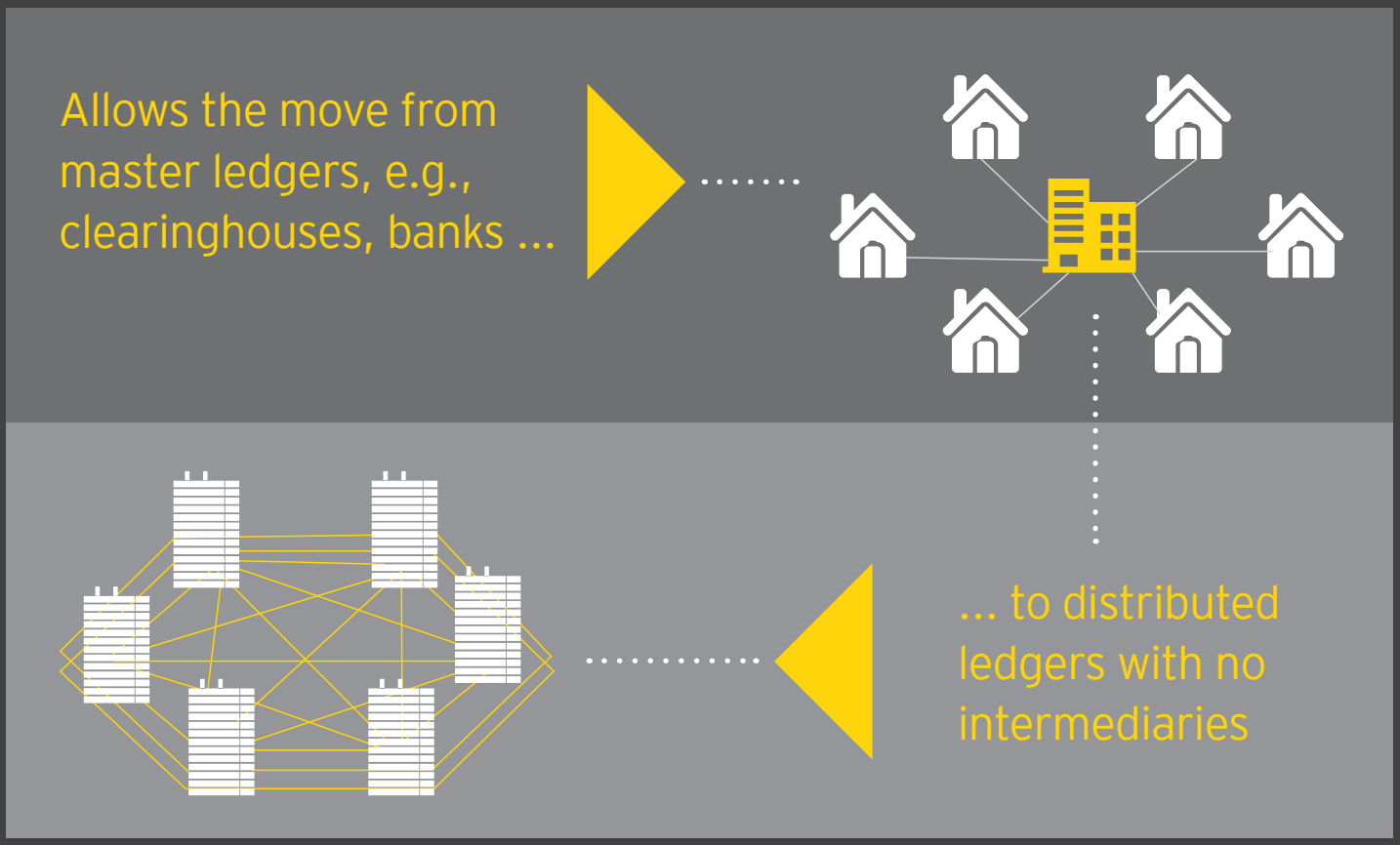
- Investment managers would create and maintain a model – similar to how they do it today.
- Models could be transmitted through a blockchain to various subscribed brokers.
- Individual accounts can be invested according to the model.
- Customization for restrictions and other account-level constraints can be stored and applied.

Benefits

- Will allow other account transactions and trades to be shared more easily
- Can provide near-real-time performance, portfolio risk and drift data, allowing managers to observe more easily and have greater insights
- Can reduce the amount of reconciliation needed by moving from the current segregated master ledger to a secure, distributed one
- Reduces the need for some intermediaries responsible for settling and executing trades

Distributed infrastructure

Technology allows the distribution of trusted value transfer and execution, allowing the disintermediation of intermediaries: **the network becomes the intermediary.**



What are some challenges to adoption?

Exploration of blockchain technology and its application to financial services firms is still in the early stages, and many wealth and asset management practitioners are not very familiar with how blockchain actually works or what the benefits might be. Additionally, there are many critics who claim that blockchain technology is "looking for a business problem to solve," and we agree that business cases should drive technology solutions, not the other way around.

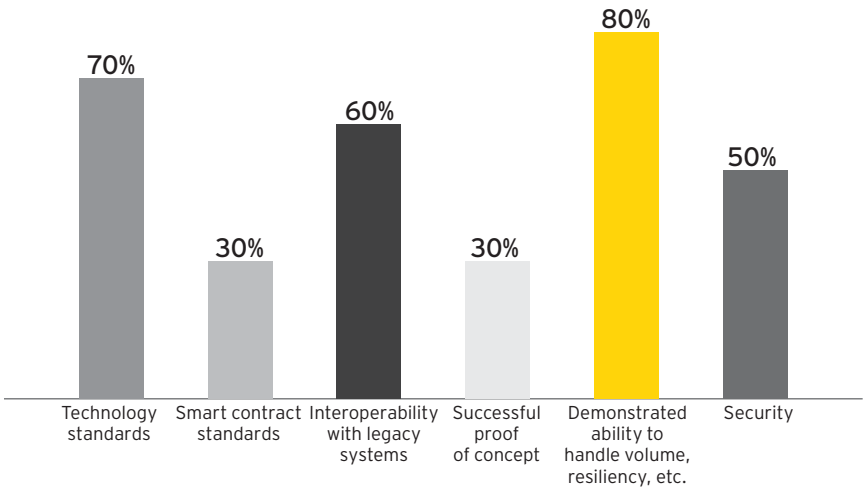
"Business cases should drive technology solutions, not the other way around."

The chart below is based on 2016 EY research and indicates that scalability is expected to be a hurdle to industry-wide adoption for many organizations. To date, blockchain has seen limited deployment in situations requiring large volumes of data, and the linear nature of the technology calls into question its ability to handle such a volume. In addition, firms face product complexity limitations, as initial rollouts of complex products can be difficult to change later on the distributed ledger.

This comes as no surprise when current institutions are able to handle billions of transactions with a high degree of reliability and security. Bitcoin blockchains, for example, can only achieve 7 transactions per second compared to Visa's VisaNet, which currently achieves 50,000+ transactions per second.[1]

There are also significant unknowns related to the regulatory and legal hurdles that exist in wealth and asset management, such as the custodial requirements if assets are held on a blockchain network at any point. Other barriers to widespread adoption include data privacy and the high cost of replacing legacy infrastructures. Despite these challenges, EY believes that blockchain technology can be applied to solve business needs for wealth and asset management firms' middle- and back-office internal processes first, before there can be widespread impacts to industry business models.

Which milestones must blockchain pass before broad adoption would be possible at your organization?



Source: 2016 EY Blockchain Capital Markets Roundtable.

A practical approach to blockchain

Blockchain is a difficult topic to understand, and determining a good business strategy for using it is even tougher. While many technologists can grasp the concept and the underlying algorithms, many business leaders are unsure of how it can benefit their business in a meaningful way, or where it can disrupt current models. To accomplish this, EY recommends breaking strategy development into three key phases: first, identify the opportunities for the technology; then, focus on developing innovative solutions to capitalize on the opportunities; and, finally, work with your technology partners to successfully implement the solutions.

The first step in developing a strategy is creating an opportunity framework to identify where the emerging benefits might exist and which areas of the business are the most vulnerable to disruption. There are a handful of firms finding some early successes, and the ones that are making headway are taking a strategy-focused approach.

We recommend that as firms examine the opportunities, they look internally first, as it is much easier to develop and gain adoption within your own firm. As smaller internal solutions begin to gain traction, firms should look to expand the solution internally — across functional groups and then across lines of business — to demonstrate efficacy and gain support and momentum. Finally, once internal support is obtained, business cases and development for altering existing revenue-generating business models should be examined.

With so many potential blockchain opportunities, establishing an effective framework to identify real business value is critical. As noted in the previous section, there are use cases that can be developed quickly to drive results. Firms should focus on those use cases that have the greatest opportunity with minimal risk, and use a framework to properly allocate time and resources. In addition to creating blockchain specific use cases, blockchain should be considered an enabling technology to the challenges of business-as-usual operations. To this point, firms should expect blockchain disruptors to emerge where operational overhead and data management issues exist or where potential revenue-generating opportunities are driven by transparency and ease of use.

An opportunity assessment strategy at a minimum should contain the following components:

- The establishment of a framework for identifying the areas of opportunity and threats and defining relevant use cases for analysis
- A team structure that includes key stakeholders, as well as select subject-matter experts in the areas of concern (e.g., operations, product management, technology, strategy)
- A communications plan for socializing findings and decision-making
- A prioritization matrix or framework for identifying key use cases for the execution road map

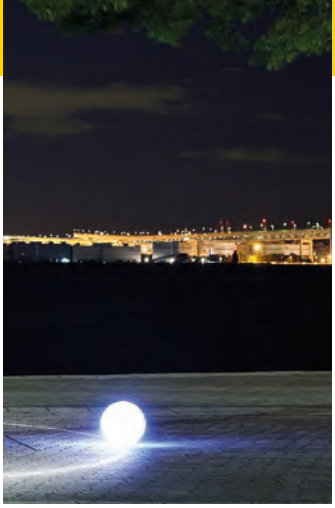
Sample opportunity framework approach

	Process	Business expertise	Use case solutioning
Objectives	▸ Establish a framework for use case assessment	▸ Define business requirements and document use cases identified during framework	▸ Review and validate use case assessment findings with key stakeholders
Key activities	▸ Define use case catalog ▸ Identify cross-functional team ▸ Perform preliminary review of use case opportunities ▸ Identify in-house and external workshop participants ▸ Socialize, review and seek approval from key stakeholders	▸ Conduct workshops with identified participants based on use cases identified from the preliminary opportunity review ▸ Group and categorize use case opportunities ▸ Socialize, review and seek approval from key stakeholders ▸ Identify use cases that warrant extended solutioning in the next phase	▸ Review and agree upon initial use case assessment with key stakeholders ▸ Conduct final workshops with identified participants ▸ Further define use cases with key participants ▸ Prioritize use case assessments and summarize them for leadership ▸ Identify and confirm with key stakeholders use cases that warrant extended solutioning
Output	▸ Target requisite workshop participants ▸ List of preliminary use cases/ assumptions	▸ List of key use cases/ assumptions for stakeholder presentation	▸ Presentation of key findings to stakeholders ▸ Detailed use case assessment document

The next logical step is to focus on developing solutions — first on a small scale internally, but gradually ramping up to larger, more impactful internal and client-facing solutions. Several firms have adopted this approach through an innovation strategy. This strategy is usually defined as the process for assessing the opportunities previously identified in your analysis, determining the impacts to current business models and strategies, and creating solutions to take advantage of those opportunities and impacts.

In several cases, firms have implemented an innovation strategy through an "innovation lab," where teams can focus on evaluating the opportunities and developing proofs of concept and working prototypes to explore the possibilities of blockchain. While some of these innovation labs start as individual, stand-alone groups, many are developed with the idea that the output will eventually be integrated into the organization's business lines. Most firms now realize that working in a vacuum can delay implementation, or possibly result in significant rework to integrate new solutions into existing systems and business processes. The most successful firms define the frameworks for innovation up front and then work within the prioritization set earlier to develop the solutions.

It is also possible that the technology solution may not need to be developed in-house. There are currently dozens of blockchain technology providers, and more are launching on a regular basis. Once the concepts have been detailed during the innovation phase, the next step involves aligning the solution to your technology strategy and competencies. Many firms — even some of the largest players in the wealth and asset management space — are collaborating to implement blockchain solutions; the largest consortiums in the space today (Hyperledger) include many firms that would normally build solutions in-house on their own.



"Innovation distinguishes between a leader and a follower."
– Steve Jobs

What to do next?

With so much confusion regarding FinTech and blockchain, many firms are unsure of where to turn next and how to spend their very limited strategic dollars. Given that the success of a blockchain solution rests in its distributed nature and the willingness of the participants in the chain to work together, many firms are shying away from an initial aggressive approach. However, to be successful within an industry such as wealth and asset management, a firm or set of firms must take the lead and begin the innovation process. Ultimately, these are the firms that will stand to benefit the most, as they will reap the initial rewards of the technology.

EY is currently working with its clients on blockchain strategy development and impact assessments, innovation lab build-outs, and proof of concept creation and management. The approach is simple but effective:

- Get the business to understand the basics of blockchain technology
- Determine how it can impact its industry and specific businesses
- Contextualize the concept by identifying specific use cases that can be implemented in a short time frame with minimal risk
- Harness the technology in small, incremental steps (e.g., proofs of concept) by first working to develop and use blockchain internally, and then working to expand the solutions internally until they are incorporated into your business model
- Work with a partner to accelerate the process as needed

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[1] "The next big thing," *The Economist website*, http://www.economist.com/news/special-report/21650295-or-it-next-big-thing, May 9, 2015.