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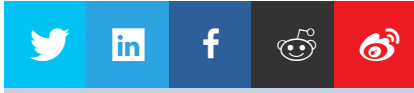
Lester Coleman on 24/01/2017

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True blockchain-led transformation is still many years away, according to an article, "The Truth About Blockchain" in the Harvard Business Review, because it does not deliver a truly "disruptive" business model which can attack an existing model with a lower cost solution, rather it is a "foundational" model since it can create new foundations for economic and social purposes.

The article was written by Harvard business administration professors Marco Iansiti and Karim Lakhani.

Blockchain technology promises a lot of benefits and for good reason, the article noted. It can provide contracts embedded in digital code and stored in transparent, shared databases that are protected from tampering and deletion. Every agreement, task, process and transaction can have a digital record and signature that can be identified, shared, validated and stored. Intermediaries like bankers, brokers and lawyers may no longer be necessary.

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Barriers To Overcome

However, for this potential to be realized, many barriers— organizational, governance, technological and even societal—need to fall. It would be a mistake to rush into blockchain innovation without understanding how it will likely take hold.

Blockchain technology's impact will be gradual rather than forcing immediate disruption, according to the authors.

Blockchain is not a "disruptive" technology that can undermine traditional business models with a lower-cost solution and quickly replace incumbent firms. Instead, it is a foundational technology. It can create new foundations for social and economic systems.

While the impact will be great, it will take decades for blockchain to seep into the economic and social infrastructure. Adoption will be gradual, not sudden.

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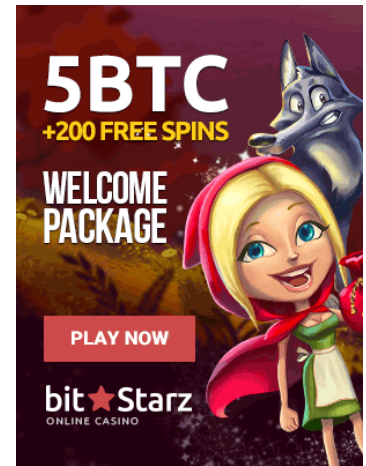
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Parallel Technology: TCP/IP

A parallel foundational technology is distributed computer networking technology, seen in the adoption of TCP/IP (transmission control protocol/internet protocol), which established the foundation for the internet.

TCP/IP was introduced in 1972 and gained traction in a single-use case: as the basis for e-mail among the researchers at the U.S. Department of Defense.

TCP/IP transmitted information by digitizing it and breaking it into small packets. Sending and receiving nodes could disassemble and reassemble the packets and interpret the encoded data.

Traditional telecommunications and computing sectors were skeptical of TCP/IP. But in the late 1980s and 1990s, firms, such as Hewlett-Packard, Sun, NeXT and Silicon Graphics used TCP/IP to build localized private networks within organizations.

TCP/IP came into broad public use with the emergence of the World Wide Web in the mid-1990s.

Once the basic infrastructure achieved critical mass, companies took advantage of low-cost connectivity by creating internet services that were substitutes for existing businesses. CNET took news online. Amazon offered more books than book stores. Expedia and Priceline made it easier to buy airline tickets and brought transparency to the process.

Transformative Applications Emerge

The next wave of companies used TCP/IP to create transformative applications that changed the way businesses created value. Such companies were built on a peer-to-peer architecture and created value by coordinating distributed networks of users. But it took more than 30 years for TCP/IP to move through all these phases and reshape the economy.

Just as e-mail allowed bilateral messaging, bitcoin permits bilateral financial transactions. The development and maintenance of blockchain is shared, distributed and open, just like TCP/IP's.

Blockchain could reduce the cost of transactions significantly. It could become the system of record for all transactions. As a result, the economy could once

again experience a radical shift, as blockchain-based sources of control emerge.

While one can't predict how long the transformation will take, it's possible to determine which applications will gain traction first and how the technology's broad acceptance will come about.

Two Key Dimensions To Consider

Two dimensions impact how a foundational technology and its business use cases evolve. The first is novelty. The more novel, the more effort needed to ensure users understand the problems it solves. The second is complexity, the number and diversity of parties that have to work together to produce value with the technology.

The professors developed a framework to map innovations against these two contextual dimensions, dividing them into quadrants.

Each quadrant represents a stage of development. Identifying which stage a blockchain innovation falls into will help executives grasp the challenges it presents, the level of collaboration needed, and the regulatory and legislative efforts required. The map will

also suggest processes and infrastructure needed to facilitate adoption. Managers can use the map to evaluate the state of blockchain development in any industry, and to assess investments in their own blockchain capabilities.

Also read: BBVA cites 7 regulatory challenges facing blockchain technology

Where Executives Should Start

For executives to decide how to best use blockchain technology, the easiest place to start is single-use applications, which minimize risk since they aren't new and have little coordination with third parties.

Bitcoin could work as a viable payment mechanism, according to the report.

One strategy is to add bitcoin as a payment mechanism. The infrastructure and market for bitcoin are already well developed, and adopting the currency will require a variety of functions, including IT, finance, accounting, sales and marketing, to create blockchain capabilities.

Another low-risk approach is to use blockchain technology as a database for managing physical and digital assets, recording internal transactions and verifying identities.

Developing substitute applications requires planning because existing solutions can be hard to dislodge. One way is to be to focus on replacements that don't require end users to change behavior much but offer alternatives to expensive solutions.

Traction Emerges In Some Use Cases

To get traction, substitutes need to deliver functionality as good as a traditional solution's and be easy for the ecosystem to adopt. First Data's foray into blockchain-based gift cards is an example of a well-considered

substitute. Retailers can significantly lower costs per transaction and improve security by using blockchain technology to track currency movement within accounts without relying on external processors. These gift cards even permit transfers of balances and transactions between merchants via a common ledger.

Transformative applications remain far away. It nonetheless makes sense to evaluate possibilities and invest in technology that can enable them. The technologies will be most powerful when tied to a new business model in which the value creation departs from existing approaches.

Two areas where transformative scenarios could have a major impact are large-scale public identity systems for such things like passport control, and algorithm-driven decision-making in the preventing money laundering.

These applications, however, won't reach broad adoption for at least another decade and probably more.

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