BLOCKCHAIN: MOVING FROM PROOFS TO SCALE

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The moment of truth is finally arriving for blockchain. After years of hype without any major go-lives, the technology is now gaining critical mass. Recently, Japan became the first major economy to launch a blockchain-led app – MoneyTap – that offers customers real-time money transfers.[1]

Japan's existing payment system, Zengin, is expensive and slow. MoneyTap is expected to re-define peer-to-peer and inter-bank payments. Mainstream blockchain deployments such as MoneyTap are allowing the technology to step out of the shadows of cryptocurrencies (and the associated negative undertones).

While financial services continue to be the current and near-term leader in blockchain deployments, industries such as energy and utilities, healthcare, travel and retail are also catching up.[2] A slew of innovative blockchain-led solutions across industries are signaling the transition of blockchain from Proof of Concepts (PoCs) to full-blown commercialization.

[1] https://www.ft.com/content/1a632afc-c35d-11e8-95b1-d36dfef1b89a
[2] https://www.pwc.com/gx/en/issues/blockchain/blockchain-in-business.html

MOVING BEYOND THE TEST ENVIRONMENT

Let's take a look at some of the blockchain-led solutions across industries. For example, loyalty and rewards company Loyyal has launched the latest version of its blockchain platform for loyalty and incentive programs.[3] The upgraded Blockchain-as-a-Service (BaaS) platform leverages Hyperledger Fabric and smart contracts to offer enhanced security, network resiliency and scalability.

The Canadian Border Services Agency (CBSA) recently piloted TradeLens, a blockchain-led shipping solution to create a secure digital supply chain for all shipments entering Canada.[4] CBSA expects the pilot to improve the quality and timeliness of commercial data, enhance visibility of cargo movement and optimize the number of transactions required to release shipments.[5]

The technology is also playing a crucial role in ensuring that customers receive diamonds that are authentic and conflict-free. The diamond company De Beers has digitally tracked 100 high-value diamonds from mine to retail using its blockchain platform Tracr™.[6] The platform created an immutable digital trail for each physical diamond assuring its provenance and traceability across the entire value chain.

CHALLENGES IN MAINSTREAMING BLOCKCHAIN

In PwC's global blockchain survey,[7] 84 percent participants revealed that their organizations were working with blockchain in some form. Nearly 32 percent companies had projects in the development phase, 10 percent had pilots running, while 15 percent had go-lives.

Despite the guarded optimism, certain barriers to blockchain adoption are holding back companies from extracting the technology's full potential.

INTERNAL BUY-INS

The initial setup costs for blockchain-based systems can be prohibitive due to the need for specialized hardware and software. The move to such systems may require complete overhauls of existing legacy systems or introduction of new systems compatible with the blockchain solutions.

Also, finding the strategic clarity to build a solid business case for blockchain can prove challenging. Since the technology is generally seen as unproven, garnering decision makers' support can be difficult.

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[3] https://www.prnewswire.com/news-releases/loyyal-announces-4th-generation-release-of-industry-leading-blockchain-platform-for-loyalty-and-incentive-programs-300680852.html

[4] https://www.newswire.ca/news-releases/the-canada-border-services-agency-pilots-ibm-maersk-tradelens-blockchain-solution-698521221.html

[5] Ibid

[6] https://www.debeersgroup.com/media/company-news/2018/de-beers-group-successfully-tracks-first-diamonds-from-mine-to-r

[7] https://www.pwc.com/gx/en/issues/blockchain/blockchain-in-business.html

SECURITY & PRIVACY CONCERNS

While blockchain is said to be immutable, it is technically prone to modification. If malicious user(s) wish to alter a chain, they'll have to take control of over 51 percent of computers in the distributed ledger. While it is believed that executing such an attack is nearly impossible, the security threat still remains.

Data privacy regulations such as the European Union's (EU) General Data Protection Regulation (GDPR) do not augur well for both public and private blockchains. For example, GDPR does not allow citizens' personal data from leaving the EU thereby giving them full control over their data.

This is problematic for public blockchains that do not control who hosts a node and private

blockchains where data cannot be deleted. GDPR's 'right to be forgotten' also conflicts with the immutable nature of transactions on the blockchain.

SPEED IS A CHALLENGE

Compared to traditional payment systems such as debit / credit cards, blockchain transactions can take longer to execute. This is due to their complexity coupled with their encrypted and distributed nature.

As blockchain networks grow, the number of computers accessing and writing to the networks also expand. Consequently, the networks become sluggish and unwieldy with some transactions taking up to several hours to finalize.[8]

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[8] https://www.forbes.com/sites/bernardmarr/2018/02/19/the-5-big-problems-with-blockchain-everyone-should-be-aware-of/#36d5024c1670

THE SCALABILITY TRILEMMA

Ethereum's co-founder Vitalik Buterin has noted the 'scalability trilemma,' which claims that public blockchains can attain only two of three fundamental properties – decentralization, security and scalability.[9]

For example, as the number of transactions increase, developers will need to increase the size of a block to accommodate them. As result, the volume of data will also multiply. As each node in the blockchain reaches full capacity, few companies will have the resources to run them. This will put decentralization squarely at odds with scalability.

THE REGULATORY CONUNDRUM

Regulations are seen as one of the major barriers to the deployment of blockchain-based solutions in business contexts. Blockchain's promise of anonymity and decentralization are in direct conflict with traditional regulatory norms.

Regulators across North America, Europe and Asia have taken diverse approaches to regulate the activities enabled by blockchain. However, each approach brings along its own set of uncertainties – EU's GDPR, for example.

Regulators also need to recognize the fact that the onus for creating regulatory environments to support innovative blockchain applications lies with them.

[9] https://www.weforum.org/agenda/2018/04/how-secure-is-blockchain/

CROSSING THE CHASM

Despite the formidable challenges, blockchain is moving out of labs and going mainstream. The technology currently sits within the innovators and early adopters' user groups of the technology adoption lifecycle.

However, many experts believe that it won't be long before the technology makes its way to the early majority user group. Here are some concrete steps organizations can adopt to take blockchain beyond the PoC stage:

SOLVE A SPECIFIC BUSINESS CHALLENGE

Since the technology is largely proven, companies need not test it further through pilots. They should focus on solving a long-standing business challenge using blockchain.

Often companies end up selecting an existing automated process for running a blockchain pilot. They should instead use a business process that can offer high Return on Investments (RoIs) if improved, but is currently not well-automated and delivers sub-optimal performance.

The key lies in starting small with a process where low volume of data is involved. Once the pilot is successful, it can be used as a robust business case to get organizational buy-ins for more ambitious projects.

BUILD A CONDUCIVE ECOSYSTEM

An increasing number of companies looking to deploy blockchain-based business solutions are chasing their goals as part of a consortium. In fact, companies, governments and regulators are collaborating through consortia to set standards, develop infrastructure and execute transactions.[10]

Joining a consortium allows companies to stay on top of latest blockchain trends, track competitors' activities in the area and adopt best practices for effective use of the technology.

RAISE AWARENESS

A recent IDC survey[11] revealed that nearly 80 percent of European enterprises haven't heard of blockchain or do not know the impact it can have on their business. As a result, companies cannot unlock the benefits made possible by blockchain. Moreover, the lack of understanding ironically leads to a trust gap.

While the public narrative is moving away from bitcoins, it is important to position blockchain as an enabler of broader digital transformation. Increased awareness of the technology's transformative potential can also help onboard more stakeholders.

[10] https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/emergence-of-blockchain-consortia.html
[11] https://www.idc.com/getdoc.jsp?containerId=EMEA43579918

THE FUTURE STATE

PoCs, pilots and go-lives of cross-industry solutions backed by blockchain have proved that the technology can deliver strategic value for companies. If barriers hindering the feasibility of blockchain deployments are addressed, the technology will reach a much larger user base. However, companies need to set realistic timelines to extract projected RoIs from such go-lives.

By 2030, blockchain is estimated to generate an annual business value of over USD 3 Trillion. Around 10-20 percent of global economic infrastructure will run on blockchain-based systems by then.[12] Clearly, the technology is showing signs of becoming the new Internet of transactions that is immutable, transparent and autonomous.

[12]https://www.pwc.com/gx/en/issues/blockchain/blockchain-in-business.html

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