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# Unblocking the blockchain

IBM Institute for Business Value

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# Regulation and innovation in the financial services ecosystem

There is no doubt that blockchain is about bringing trust to transactions. For almost any supply chain – be it food, medical records, precious gems and minerals, real estate or credit default swaps, to name a few – success depends on the promise of transparency and auditability for all participants. In this sense, we can view financial products as supply chains of primary and secondary markets – a supply chain of cash in one direction and of shares, CDs or derivatives in the other.

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## Transparency that engenders trust

Jessi Baker, the Founder and CEO of Provenance, recently said: “At its heart, a blockchain is a system that allows people who don’t trust each other, to trust each other.”<sup>1</sup>

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Blockchain is designed to deliver on that promise, and to do so transparently. It seems to be a regulator’s dream come true.

For financial markets, the 2008 global financial crisis was a nadir for market opacity and trust. As a result, the financial services industry still carries the sting of increased scrutiny and regulation. And while digitalization has made a difference to the client interface, it has not changed the supply chain. So participants are increasingly looking at distributed ledger technology to become an open, secure, scalable, transparent way to imbue transactions with trust and confidence.

Regulators are continually seeking to:

- Reduce systemic risk
- Ensure fairness by helping willing buyers meet willing sellers
- Complete transactions accurately, without disputes that block supply chains
- Settle trades quickly and transparently so as to avoid settlement risk.

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## Regulators are engaging on blockchain

Now, realizing they have driven up costs, regulators are happy to promote technology that lowers costs if it increases transparency. We are encouraged by the enthusiasm of regulators, not traditionally viewed as being particularly innovative – or even concerned with innovation. Around the world, they are becoming increasingly proactive about blockchain. For example:

- The U.S. Securities and Exchange Commission (SEC) has formed a Distributed Ledger Technology Working Group to build expertise, identify emerging risk areas, and coordinate efforts among the SEC's divisions and offices.<sup>2</sup> Approximately 75 members of the working group also assist in coordination with federal, state, and local law enforcement and regulatory partners, and liaising with industry.
- The Bank of England, working with a consulting firm, built a multi-node scalable blockchain environment that contained several “smart contracts” to illustrate the applications of the technology.<sup>3</sup>
- The general secretary of the Financial Stability Board disclosed in November it is considering the financial stability implications of distributed ledger technology, and continues identifying key issues that market participants and policy-makers need to address.<sup>4</sup>
- The European Securities and Markets Authority has recently published the results of its 2016 market consultation exercise, and in the U.S., the Financial Industry Regulatory Authority is in a similar market exercise.
- And the Hong Kong Monetary Authority launched its “Fintech Supervisory Sandbox” in September, allowing banks to conduct pilot trials in a controlled production environment, without the need to achieve full compliance. A few banks are in discussions for projects in areas such as blockchain and artificial intelligence.<sup>5</sup> Regulators in the UK, Australia and Abu Dhabi are looking at “blockchain sandboxes,” too.

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## Blockchain as a convergence point for regulation and technical innovation

In financial markets, there has been significant momentum behind a blockchain project known as Hyperledger to create a blockchain standard.<sup>6</sup> The Hyperledger project is an open source, open governance global collaboration including leaders in finance, banking, supply chains and manufacturing, among others. Hyperledger is being developed under the auspices of The Linux Foundation.

According to a recent study by the IBM Institute for Business Value (IBV) that surveyed 200 financial markets executives, blockchain adoption is being led by just 14 percent of firms surveyed – we call them Trailblazers.<sup>7</sup> That group expects to implement commercial solutions at scale this year. More than twice as many, 30 percent, have no plans to have a commercial solution until at least 2020.

Among the reasons for the deliberate pace of commercializing blockchain are the considerable tasks of designing databases, methods, services

and governance approaches. Nonetheless, judging by the number of proofs of concept, social chatter, and even firms joining multiple initiatives, interest and confidence in blockchain are rising.

Make no mistake, the Trailblazers are not merely interested in technology research. They intend to disrupt the status quo for powerful competitive advantage. And Trailblazers may not be whom you expect (see sidebar, “Pioneering large-scale blockchain implementation”).

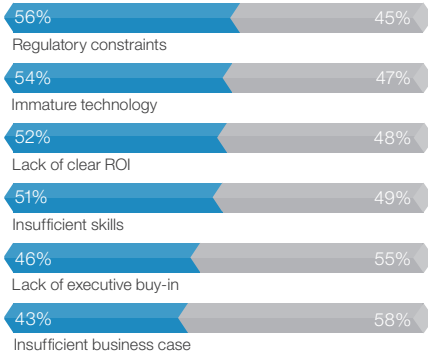
Similar to the DTCC example noted in the sidebar, CLS Group is working on a Hyperledger Fabric blockchain bilateral FX trade netting service (a way to hedge currency risk).<sup>8</sup> It will be for buy-side and sell-side institutions’ FX trades that are settled outside the regular and major CLS settlement service. The company expects its wide customer base of 21,000 institutions worldwide and its global presence give it an edge in bringing a new blockchain-based solution to the market.<sup>9</sup>

### Pioneering large-scale blockchain implementation

The Depository Trust & Clearing Corporation (DTCC) has brought together many of the world’s largest participants in the credit default swap markets to collaborate on selection and implementation of blockchain-based approach for its Trade Information Warehouse, which will be built on DTCC’s leading role in the Hyperledger Project. We see this as not only an industry standard for an “at scale” deployment of blockchain in financial markets, but a major statement of confidence to the market for the value that blockchain approaches can bring to such critical market infrastructure.

**Figure 1**

Barriers to implementing blockchain today

**Among top 3 barriers**

Source: "Leading the pack in blockchain banking: Trailblazers set the pace." IBM Institute for Business Value and the Economist Intelligence Unit. <https://public.dhe.ibm.com/common/ssi/ecm/gb/en/gbp03467usen/GBP03467USEN.PDF>

Indeed, you would be hard-pressed to find a major financial services firm that is not experimenting with – or joining a consortium doing testing on – blockchain. Still, for such a promising technology, the financial services industry seems to be tiptoeing forward rather than leaping ahead. So, what is keeping blockchain from greater industry participation and acceptance?

In the IBV study, 56 percent of respondents cited regulatory constraints among their top three barriers (see Figure 1). Once regulators believe a change will support or extend their core security and transparency mandate, we believe they will support change. Of course, the cost drivers have to be clear and the cost of change has to be well understood.

Moreover, except in cases where an enterprise owns a significant network, such as CLS or DTCC, there should be consensus on standards. Regulators are not inclined to arbitrate between competing standards. They would prefer open or multi-mode approaches that allow users to move at their own speed.

So regulators are rightly nervous of exercising their power, but see merit in allowing greater trust and transparency. They walk a narrow path, trying to make rules that are technically sound, but vendor-neutral. There is a failure ditch on one side of the path and a wall of cost on the other. And with open issues such as the legal and regulatory question of settlement finality in a blockchain context, they are likely right to use a mix of enthusiasm and caution.

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## Heading toward market impact in financial services and beyond

If regulators and participants can come to a consensus on the use of blockchain, it could be a cost-saving boon to worldwide financial markets. And, with cost savings and reduced operational risk as shared desires of both regulators and participants, no longer would each firm require its own archaic ledger system.

With regulators and financial markets firms converging on blockchain, it seems only a matter of time before electronic ledgers become industry pervasive. You can expect to see blockchains embryonic in clearing and settlements, wholesale payments, equity and debt issuance, and “know your customer.”

We also see blockchain having a significant impact in areas such as property and other forms of collateral, where transactions are often complex, and require manual and multi-party intervention. Even in commodity markets, where

there are numerous variables or grades (think of crude, West Texas Intermediate, Brent, Dubai, sweet and sour oil), blockchain shows real promise.

On six continents, regulated firms are bringing forward multiple proofs of concept. Regulators are engaging in the testing, selection and application of blockchain with unprecedented ardor so the solutions that emerge are robust, tested and scalable. This will likely be the focus for 2017 for regulated firms as they seek to cut costs.

Commercial blockchains and shared regulatory burdens are expected to usher in an era of innovation in business, operating and revenue models. Trailblazers are getting ready to launch commercial solutions to scale within the year. It’s time to choose: Will you be a disruptor or be disrupted?

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