Leading the pack in blockchain banking

Trailblazers set the pace

IBM Institute for Business Value
survey conducted by
The Economist Intelligence Unit

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Rapidly breaking through barriers

A breakout group of Trailblazer banks is leading adoption of blockchain solutions. Defying expectations, larger banks are leading the charge. Trailblazer banks have identified the business areas of reference data, retail payments and consumer lending where blockchains can help realise the greatest benefits related to time, cost and risk. Blockchains can help these early adopters open new business models for trade finance, corporate lending and reference data. Despite this, Trailblazers are investing in areas where they anticipate disruption - and the greatest benefit.

Executive summary

Banking organisations across the globe are investing resources in exploring how blockchains can impact their businesses. The IBM Institute for Business Value with the support of the Economist Intelligence Unit surveyed 200 banks in 16 countries on their experiences and expectations with blockchains. This executive report outlines what differentiates the early adopters and what we can learn from them.

Just a handful of banks are operating on blockchains today. In 2017, 15 percent of the banks in our study expect to have blockchains in commercial production. These Trailblazers are prioritising blockchain efforts to break through barriers to creating new business models and reaching new markets.

Trailblazers are prioritising blockchains to benefit time, cost and risk in three areas: reference data, retail payments and consumer lending. They also expect blockchains to yield the greatest effect in opening up new business models in three areas: trade finance, corporate lending and reference data.

Trailblazers see a significant wall of disruption heading their way in core business areas. They expect five out of nine core business areas to experience significant disruption and are investing in each.

Across the industry, banks are investing in international payments, other cash management, corporate lending, consumer lending, mortgages and deposit taking. These findings reveal that blockchain adoption is accelerating faster than originally anticipated, with organisations identifying key areas and benefits in which to explore solutions.

91 percent of surveyed banks are investing in blockchain solutions for deposit taking by 2018 to protect against start-up non-banks

A full 15 percent of banks surveyed -Trailblazers - expect to have a commercial blockchain solution in 2017

Seven in 10 trailblazers see blockchains as a means to creating new business models and accessing new markets.

First movers

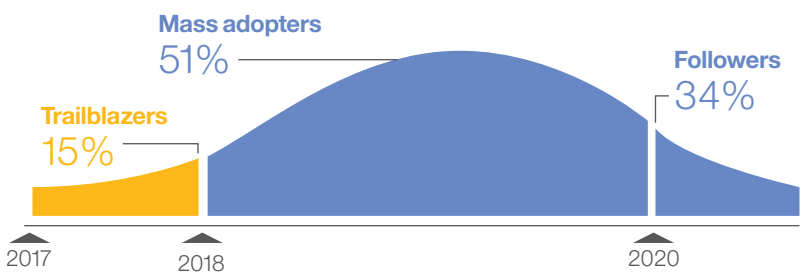
Trailblazers set a fast pace and new direction

When the first international payments on a blockchain crossed the wires, the transaction was completed in a matter of seconds instead of hours. One Speed of execution, of course, is one benefit derived from blockchains, but speed is also proving the operative word when it comes to blockchain commercialisation. Our survey of commercial and retail banks reveals that the industry is hurtling toward blockchain adoption far faster than many expected.

Commercial applications in banking are few in number today. In 2017, a full 15 percent of the banks in our study expect to have commercial blockchain solutions at scale (see Figure 1). We call this group the Trailblazers. In effect, 2017 looks to be the year banking on blockchains shifts from zero to sixty. First-mover advantages for this group include the ability to influence and set the business standards by which others will operate. Moreover, as start-ups take aim at incumbents and new business models expand beyond industry boundaries, first-mover banks will be well situated to get ahead of the consequent disruption.

Figure 1

First to finish: Respondents' expectation of when they will have blockchains in commercial production and at scale

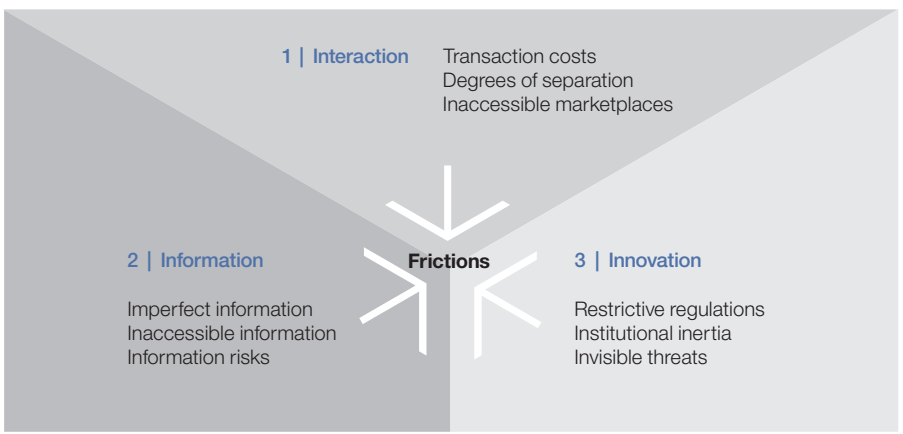


These Trailblazers aren't the small start-ups or fintechs many might expect to enter first. Instead, Trailblazers are made up of a disproportionate number of medium sized banks and are more than twice as likely to be large institutions that number more than a hundred thousand employees. Defying expectations, these larger banks are proving they have the agility to move fast in the face of change.

In our first blockchain study, 'Fast forward', **ibm.biz**/blockchainstudy, we examined the potential for blockchains to eradicate the frictions that hold companies back, limit their growth and constrain innovation. We identified nine frictions that challenge enterprises today (see Figure 2) and analysed the impact blockchains might have. This study asked for the views of bankers on these same frictions.

Figure 2

Frictions framework: Information, innovation and interaction frictions can be minimised by blockchains



We found that all banks expect blockchains to eradicate frictions across the board. But Trailblazers stand apart from other banks in one respect. They see the most substantial reductions in those frictions that bring down the barriers to creating new business models and entering new markets. Likewise, these bold banks are singularly focused on using blockchain technology to greatly improve the accuracy of the information they rely on to act on decisions (see Figure 3).

How individual banks respond to blockchain opportunities in the next few years will depend on their circumstances, capacity and ambition. How regulators respond - and where - will influence the evolution of blockchains. As with any new technology with the potential to transform, there can be no cookie-cutter approach. However, the plans, priorities and investments of the Trailblazers who are poised to enter the market today do illuminate a direction.

Figure 3

Path to growth: Trailblazers identify the three frictions that blockchains can most reduce

Opportunity seekers

Trailblazers prioritise key business areas for optimal benefits

By now, most banks have concluded that blockchains could greatly reduce the time, cost and risk of many transactions. As banks gain experience from pilots, this calculation grows sharper. We asked banks to weigh time, cost and risk benefits in nine core business areas and analysed their answers to calculate a blended score for each business area. Our analysis reveals near unanimity; blockchain benefits are compelling and can be gained in every aspect of banking. Trailblazers identified three business areas with the highest benefits - reference data, retail payments and consumer lending (see Figure 4).

Figure 4

Benefits for all: Blockchains' impact on time, cost and risk

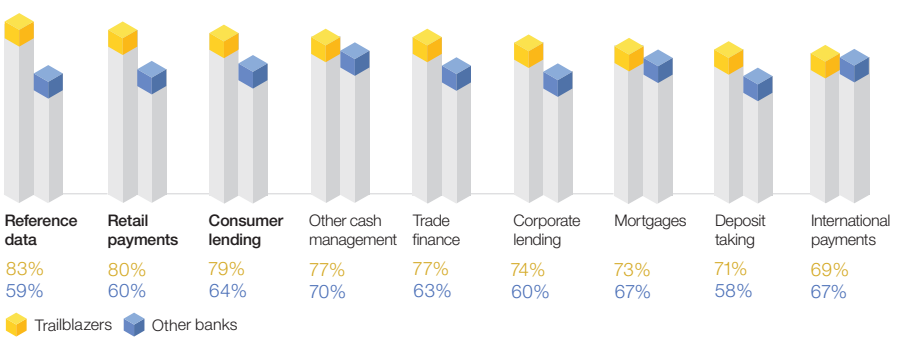


Figure 5

Key Trailblazer reference data benefits

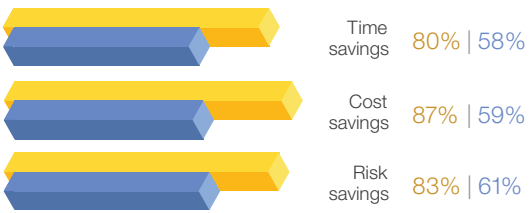


Figure 6

Key Trailblazer retail payments benefits

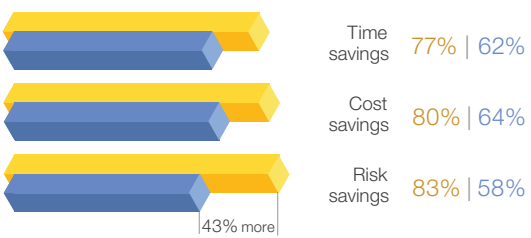


Figure 7

Key Trailblazer consumer lending benefits

As might be expected, reference data claimed the top spot (see Figure 5). On blockchains, reference data is automatically captured in real time, validated and shared as permitted across business divisions and institutions. It becomes in effect, an always up-to-date self-integrating system of truth.

As data siloes are connected to blockchains, benefits build up: Costly and time-consuming reconciliations are all but eliminated and an instantaneously verifiable audit trail discourages bad actors and potential for fraud. Data integrity is assured and banks gain a superior platform for up-to-the-minute analytics. Because reference data is integral to all of a bank's activities and isn't bound by the complex regulations found in other areas of banking, it's proving a good place to start.

Payments and lending on blockchains are a target-rich environment for efficiency. Transactions on blockchains not only eliminate the time and labor required for reconciliations, they minimise errors and significantly reduce the time needed for settlement, which in turn lowers risk and capital requirements. Trailblazers are 43 percent more likely than other banks to expect significantly less risk as retail payments move to blockchains (see Figure 6).

Cost savings are particularly attractive in consumer lending: nine out of ten Trailblazers expect significant results in cost savings alone (see Figure 7). For consumer lenders, access to new markets is another attractive proposition. Lack of credit history and identity fraud has made it difficult to grant loans to unbanked customers. On blockchains, as new kinds of verifiable transaction data is captured, enhanced identity and know your customer (KYC) data could open up emerging markets to banks.

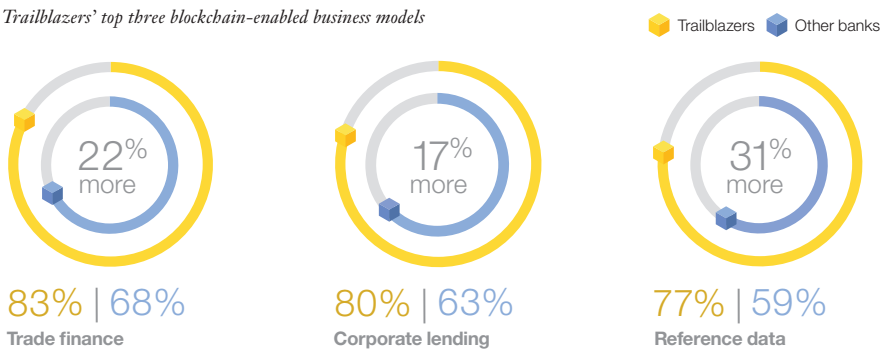
When the time, cost and risk benefits from blockchains are considered independently of each other, additional business areas stood out.

A platform for change

Blockchain enthusiasts, of course, promised something more than an Enterprise Resource Planning (ERP) upgrade; they promised a revolution. We asked bankers to share their expectations and experiences on the potential for blockchains as a platform for new business models. Trailblazers identified three areas where blockchain-based business models reach the most impact: Trade finance, corporate lending and reference data (see Figure 8).

Figure 8

Trailblazers' top three blockchain-enabled business models



Corporate lending ranked second in time savings; international payments took third place in cost savings and trade finance was the third highest in reducing risk.

"Blockchain is a transformative agent in our operational application, as proven by this project - the first of its kind in France. This pilot offers a complete view of customers' documents across our distributed network."

Frédéric Laurent, COO Innovation & Operations, Crédit Mutuel Arkéa

Trade finance modernised

Trade finance is one area where both Trailblazers and other banks agree that an entirely new business model should emerge. Mired in complexity due to the number of parties, handoffs, paper documents and manual processes involved in even a single shipment, trade finance appears long due for an overhaul. Blockchains make it possible to reinvigorate this large global market. Bank-intermediated short-term trade finance alone has been estimated to be USD six-eight trillion worldwide.[2]

Major institutions like Bank of America Merrill Lynch are innovating to reduce risk, streamline processes and improve financing.[3] Established banks as well as fintechs have pilots well underway in areas that include bills of lading and letters of credit, documents that haven't typically been shared or stored in digital form. These modernisation efforts are creating immediate efficiencies, but the bigger benefit may be to the heightened visibility that banks will have. With greater access to historical data and real-time trade transactions, banks stand a good chance to greatly improve the profitability of financing as well as the acquisition of new clients.

Banks won't be without new competition: Alibaba, China's largest e-commerce enterprise has set its sights on providing its own financial services including trade finance and is exploring blockchain-enabled financial services.[4]

Corporate lending unbound

Lengthy settlement periods - often 20 days or more - are a drag on corporate lending, tying up capital and exposing banks to new and nimbler competitors. Smart contracts on blockchains promise to dramatically reduce the time to settlement. As blockchains evolve to cross industries and more immediately verifiable data - including real-time access to assets and other forms of collateral - is captured and shared with banks, the pool of borrowers could expand to include the many small and medium sized enterprises that are locked out of credit today.

A more radical model, direct peer-to peer lending on a blockchain, is already being tested by microenterprises and could prove applicable to larger institutions that want to expand their customer bases. The peer-to-peer model, of course, could also threaten those incumbent banks that move too slowly.[5]

Reference data monetised

Real-time data synchronisation creates entirely new opportunities to monetise data and create new financial services. Credit Mutuel Arkea has already pulled data from multiple systems to integrate its identity and KYC data on a blockchain. It has identified operational benefits that it believes will boost the bottom line and also heighten customer satisfaction. Credit Mutuel Arkea expects that it will some day provide new proof of identity services to third parties, including utilities, retailers and other regulated service providers.[7] As blockchains become more common in other industries, the reference data that banks possess could drive the next generation of financial services.

New business models will take many forms and evolve as organisations work with regulators to establish new processes and platforms. One thing is certain: Disruptors have found a new platform; they're moving faster than most anticipated and they're poised to break new ground.

50%

of small and medium enterprises (SME) don't have access to the financing they need - a credit gap estimated at USD two trillion[6]

Shifting profit pools

New vectors for growth and disruption

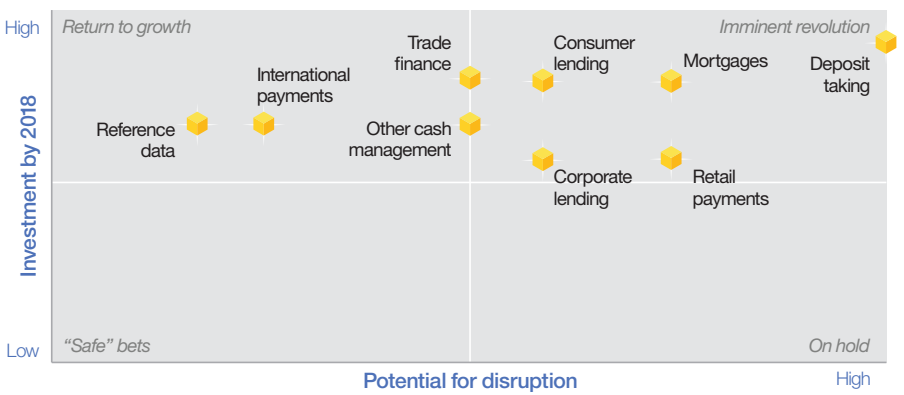
For some time, flat returns on equity have pressured banks to seek new sources of growth. First digital startups, then fintechs and non-financial institutions squeezed into the market, raised the bar on customers' expectations for ease, immediacy and cost - and began eroding share. Now, a leading group of banks, the Trailblazers, have their sights set on regaining ground.

When the Trailblazers, those banks with the most hands-on experience in blockchain technology, scan the horizon, they see something different than other banks - a wall of disruption heading toward them.

Trailblazers anticipate substantial disruption in five of the nine areas core to their business, including lending and payments, the bread and butter of traditional banking (see Figure 9). By contrast, all other banks we surveyed are counting on disruption in just two areas.

Figure 9

The great disruption: Areas of investment and disruption identified by Trailblazers



Defending disruption

Because blockchains encourage trust, organisations can expand the number of enterprises with which they transact. Smaller players and digital start-ups will have access to blockchain infrastructure that can make them more competitive and trustworthy. These new competitors include institutions other than banks and are a possible threat in two of the areas Trailblazers identified as most likely to be disrupted: deposit taking and retail payments.

Corporate and consumer lending may be particularly vulnerable to new blockchain models. Because blockchains are decentralised in form and governance they make possible direct transactions between parties, disintermediating some and increasing the viability of peer-to-peer networks.

As blockchains span industries, new cross-industry ecosystems are sure to emerge. Banks will need to determine which networks create the optimal opportunity to thrive - and acquire new customers, as well as new types of data. In China, Xinyuan Real Estate, a real estate developer and property manager, unveiled in July 2016 a new real estate finance blockchain platform that is supported by the Industrial and Commercial Bank of China. The platform will include a network of institutions to, among other things, register, assess and finance property. Developments like these portend a new approach to acquiring customers and financing mortgages.[8]

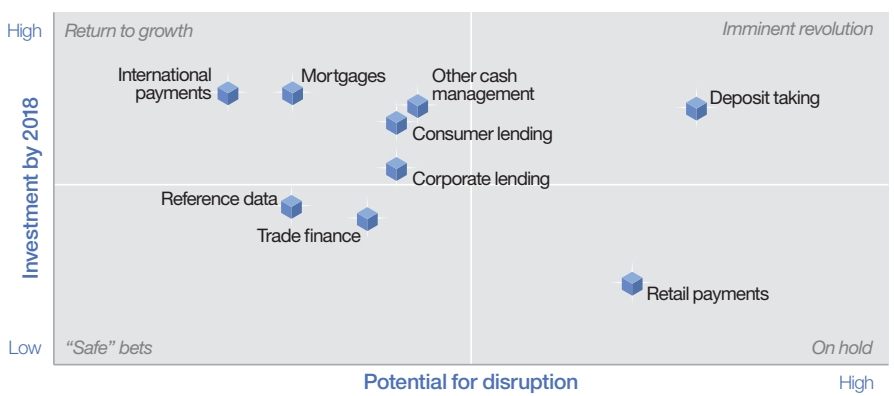
Investing for growth

Even those banks that anticipate little disruption are investing in areas where time and cost efficiencies, as well as reduced risk, could spur growth (see Figure 10).

All banks concur that deposit taking is primed for disruption. Most don't view the time, cost and risk benefits posed by blockchains to be as high in deposit taking as they might be in other areas, but they agree on the need to play defense and invest. The danger of disintermediation is being driven by fintechs and digital start- ups that can entice customers by delivering a superior digital experience. Blockchain-enabled deposit taking could prove to be pure defense - protecting the customer base - but like many activities in business, once a chain of data and transactions is established on a blockchain and connected to other blockchains, it could yield innovations as yet unimagined.

Figure 10

Set to spend: Areas of investment and disruption identified by all banks



Recommendations

To best extract value from blockchains, we recommend banks answer three questions:

How fast should we move?
Fifteen percent of those surveyed have already started. These Trailblazers are setting a fast pace and charting a direction for early advantage. Mass adopters can look to Trailblazers for lessons learned but they should be prepared to join them in real-world applications as soon as possible.

For many, regulatory complexity and constraints seem an impenetrable barrier to blockchain adoption (see Figure 11). Regulators and legislators the world over are already participating in consortia to determine how regulations might change - and regulators might benefit from blockchains. Leading banking institutions are collaborating with regulators on blockchain projects to earn approval for implementation. Collaborations like these are to be encouraged and regulators have on the whole been supportive in their responses. Banks have an opportunity to influence both the future regulatory environment and how fast new blockchain initiatives are approved to enter the market.

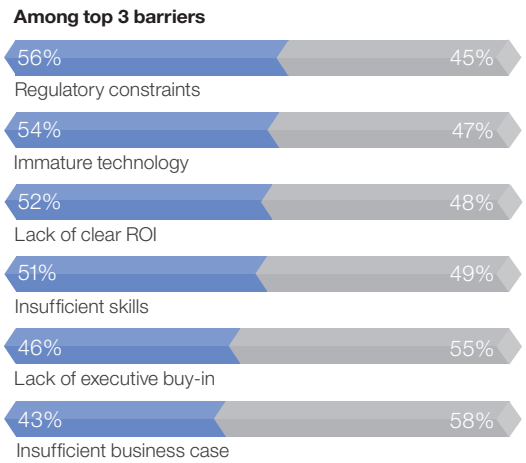
How can we scale across business networks?
Once blockchains have scaled across multiple parties, they can begin to achieve the kind of network effects that drastically reduce frictions that curb growth. Trailblazers are already working on the new business and technology standards that are required to scale. Mass adopters should join them and begin building strong partnerships, including consortia and other groups that have begun establishing business standards.

More than half of organisations still view immature technology as a barrier (see Figure 11) and seven in 10 cite the need for robust mechanisms to establish identity and a high degree of control over access. Security and privacy standards will bring more participants into blockchain networks and drive scale.

The Linux Foundation's open-source technology initiative, Hyperledger, has a core focus on identity and permissions. Institutions are working together on Hyperledger to set the technology standards that advance interoperability across blockchains and help ensure that blockchain platforms can evolve as conditions change.

Figure 11

Barriers to implementing blockchains today



How can we innovate with new revenue models?

As might be expected, our data shows that almost half of banks have already identified areas where a return on investment is probable (see Figure 11). Banks that haven't achieved this clarity of outcome should make it a priority.

Consortia lay the groundwork for a better understanding of blockchains' benefits, but many banks already recognise that more focused collaborations with a few key partners is also necessary to innovate business models. New revenue models must anticipate the potential for disruption in areas core to business today and in the future. Whether defending each area or just a few, the surest offense is to focus early and fast on the opportunity to implement new revenue models.

However the market evolves, blockchains will add at least one new revenue stream; the potential to monetise reference data looms large. Banks should factor that into their thinking from the outset.

Related publications

Cuomo, Jerry, Shanker Ramamurthy, James Wallis et al. 'Fast forward: Rethinking enterprises, ecosystems and economies with blockchains.' IBM Institute for Business Value. June 2016. **ibm.biz**/blockchainstudy

Pureswaran, Veena and Dr. Robin Lougee. 'The Economy of Things: Extracting new value from the Internet of Things.' IBM Institute for Business Value. June 2015. **ibm.biz**/economyofthings

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