

HOW IS BLOCKCHAIN UNFOLDING IN INDIA?

AND WHY THE COUNTRY IS
SUCH A UNIQUE TESTBED
FOR THE REVOLUTIONARY
TECHNOLOGY

By Shyamanuja Das



It is immensely unfair today to introduce blockchain as the technology behind bitcoin. While it is a fact—and everybody knows it—that it is indeed is the technology that powered the most successful cryptocurrency in circulation, blockchain, today, as a phrase, is far more ‘respectable’ than bitcoin itself.

The world of business—led by banks—have overwhelmingly embraced blockchain even while many of them are openly skeptical and/or critical about bitcoin and cryptocurrency.

Many even call blockchain the biggest innovation since the Internet itself. But those are lofty definitions. The World Economic Forum’s description is far more apt and business-like. The Davos-based think tank simply calls it ‘The future of financial infrastructure.’

And why not? According to a new research by Infosys, one of the leading global vendor of core banking software, half the banks that it surveyed

said they have either invested in blockchain or will do so in 2017. “Banks have collectively invested more than a billion dollar on blockchain already,” says Rajashekhara V Maiya, AVP & Head – Finacle Product Strategy, EdgeVerve, an Infosys company.

Summary: We are not talking of the future here. Blockchain is today’s technology.

But there’s a catch. It does not mean that it has covered the path other technologies traverse to reach where it has reached. It has skipped one significant step. Most other enterprise technologies are tested at the lab conditions before being taken to the users.

Blockchain, from day one, has never followed that path. First, it was running bitcoin. And now, it is shaping up in the real business world through numerous proofs of concept, not in vendor labs. Yes, vendors are involved; they are working on it in their labs. But the real progress, even in basic technology, is happening in the real world.

So, few talk of the bits and bytes. It is all about ideas and use cases. That is both good news and bad. It means it will evolve to be far more robust. At the same time, in the connected world, that may lead to some really, really big hiccups on the way.

Well, that is how the Internet itself evolved. Now, the comparison does not look too odd, though only time will tell how big it becomes. For the time being, it is sufficient to make it clear that it is becoming a far broader technology than just a banking technology.

WHAT EXACTLY IS BLOCKCHAIN?

To the uninitiated, at the conceptual level, blockchain is just an enabler of trusted transactions.

In practice, it ensures the trusted transactions through a shared ledger with access given to multiple entities that have traditionally maintained their own ledgers, and often compete with each other. In the last few years, as the ledgers have been automated, these are maintained on multiple IT systems, which send some kind of messaging to each other about a transaction.

Once they share a ledger, with adequate privacy, a transaction does not have to be recorded multiple times by multiple entities. Based on their permissions, a participating entity can initiate, modify or just see the transaction. What is really different

is that traditionally, the competing entities have required a trusted third party to secure those transactions. But blockchain – or distributed ledger technology (DLT) as it is also called – removes the need for that third party, by making transactions transparent.

In essence, DLT is differentiated from traditional systems in just two ways. One, the control of read/write access is not logically centralized; it is decentralized. Two, it allows secure transactions in competing environments, without trusted third parties.

While enabling trusted transactions is the concept, it can create business value in multiple ways, two primary means being enhancing efficiency (cutting time and cost) and reducing/removing risk.

But how does it enhance efficiency?

Take a supply chain transaction where multiple entities--typically, a financier, a supplier, and an OEM and logistics provider—work together. Though there is one conceptual business transaction, in reality, it is broken into multiple intermediate transactions, such as invoicing, discounting, pricing and movement of money.

The reason today it takes so much time is because these individual entities which take part in this conceptual business transaction are all in individual IT systems. Those

IT systems are connected through messages and do not have shared space and common infrastructure.

“In a business network,” explains Sriram Raghavan, Director, India Research Lab, IBM, “in the absence of trust, you start putting in additional controls.”

Now, this is how trust enhances the efficiency.

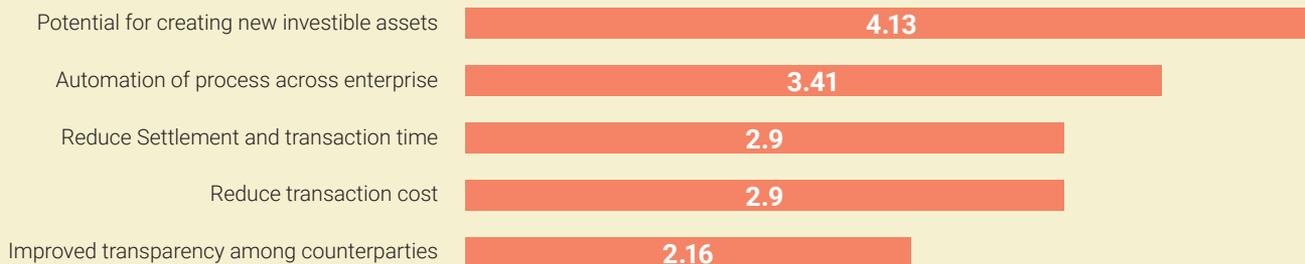
One, it lets this business run in a single infrastructure and everyone sees the same verifiable step, that is, invoices pending/invoices cancelled/invoices discounted/invoices approved. So, these individual steps in the workflow move faster.

Two, certain steps can be automated and even be omitted.

While reduced time and hence reduced cost (resulting in enhanced efficiency) is the low-hanging fruit, there are many benefits. Take trade finance systems. They deal with payments but the physical goods are moving. Today, they are unable to track the goods and don't know if there is some fraud happening and are unaware about currency fluctuations. There is so much unknown and the only way is to bundle all the risks into the financial products. Now, trusted transactions give them better visibility and therefore, they can make these financial products reach a wider community.

“So now you have moved away from cost and time efficiency into new

Top Benefits of Blockchain



Source: Infosys Research, Blockchain Technology: From Hype to Reality, February 2017

BLOCKCHAIN TRIALS BY CENTRAL BANKS

Country	Initiator	Others participating entities	Types of other entities	Use Case
Canada	Bank of Canada	Bank of Montreal, CIBC, Royal Bank of Canada, Scotia Bank, TD Bank	Commercial Bank	Digital currency
Singapore	Monetary Authority of Singapore	The Development Bank of Singapore, HSBC, Bank of America, JPMorgan, Credit Suisse, Bank of Tokyo-Mitsubishi	Commercial Bank	Digital currency
China	People's Bank of China	Industrial and Commercial Bank of China, Bank of China, WeBank	Commercial Bank	Digital currency
India	Reserve Bank of India	State Bank of India, Punjab National Bank, HDFC, Citibank, Deutsche Bank	-	Trade finance
Germany	Deutsche Bundesbank	Deutsche Börse	Transaction service providers	Payment settlement, Transferring securities, Simultaneous delivery and payment for securities purchases, coupon payments on bonds and redeeming maturing securities

products and new innovation. This is the task we see in every industry. It may start with time and cost but gradually move into new products that are possible today but weren't possible before," explains Raghavan of IBM.

Banks know that better than anyone else. It is not surprising that banks identified 'potential for creating new investible assets' as the top benefit accrued from blockchain in a new report *Blockchain Technology: From Hype to Reality*, published by Infosys in February 2017.

MAINSTREAMING FAST

According to a report published by World Economic Forum in August 2016, there were 24 plus countries working on blockchain. There were more than 2,500 patents filed in the area and there were more than 90 companies that had joined global consortia.

Today, that number has risen significantly. There are more than 200 companies that have joined more than

“Initially, everyone is going for time and cost benefits. The next level of innovations will really come with new products, because you have taken away risk”



Sriram Raghavan
Director, India Research Lab, IBM

25 consortia globally. Some of those are broader while some are industry specific; yet others are geographical region specific. India may see its first consortium soon.

There are alternate technologies too. R3CEV, promoted by R3 consortium partners, was creating its own technology; Digital Asset Holding, another consortium promoted company was creating its own. So were many technology vendors like IBM and

Intel. Then there were cryptocurrency entities like Bitcoin and Ripple who had their technologies.

Many of them (DigitalAssets, R3, IBM, Intel, Blockstream) have come together under the aegis of Hyperledger project, started by Linux Foundation in December 2015. Its platform, Hyperledger Fabric, is gaining a lot of currency. Even in India, most trials, including one by RBI research unit, IDRBT.

“Central banks don’t jump to alternatives unless they find them to be secure, strong and sustainable”

The Institute of Development and Research in Banking Technology (IDRBT), the research and academic unit of RBI, recently conducted a blockchain trial involving multiple banks and has come up with a whitepaper on blockchain opportunities and challenges for Indian banks. Dr A S Ramasastry, Director of IDRBT shares his perspectives...



Banks have largely shrugged off cryptocurrency but have gone for blockchain. Why?

Bitcoin was a big instance of adoption of blockchain. Bitcoin is not a legally accepted currency and therefore has issues in acceptability. Though blockchain technology is suitable to currencies, in view of the background of its introduction for bitcoin and associated concerns of its acceptability, it has not yet been used for cryptocurrency. Recently, there have been initiatives by central banks for studying the feasibility of using blockchain technology for the legal currencies issued by them. As sole authorities of currency issue in most of the countries, it is a call to be taken by central banks. Central banks do not jump to alternatives unless they find them to be secure, strong and sustainable.

Which are the areas where blockchain can make maximum impact in banking?

In the inter-bank segment, centralized KYC can be of great benefit. Similarly,

syndication of loans can be a potential area of application. Trade finance, an area for which a PoC was done, can make a difference in banking. The whitepaper published by us identifies possible areas in both intra-bank and inter-bank segments.

Where do you think DLT/Blockchain will fit in the most for Indian banks?

It is too early to discuss the actual roadmap of blockchain adoption by Indian banks. We have just released the whitepaper indicating the concerns and issues in its adoption in the areas of banking and finance. There are likely to be discussions among banks on the pros and cons of its adoption. We ourselves will be holding a few workshops bringing bankers and solution providers together to have further deliberations on the points and pointers indicated in the whitepaper.

What policy/regulation areas need to be worked on for blockchain to be implemented?

As I mentioned earlier it is just a beginning. It is too early to look at policy and regulatory changes. The

Reserve Bank of India has always been in the forefront of technological adoption by Indian banks and they will take appropriate steps when needed.

Any learning about challenges from the blockchain trial that you would like to share?

It is reported in the whitepaper. What was attempted was just a PoC in a very small way to see the potential of use of blockchain in the area of trade finance. A proof of concept is some kind of demonstration and not full scale deployment. It has its limitations. It served the purpose of PoC.

What are your next steps on blockchain?

As an academic institution, IDRBT is focussed on looking at alternate technologies suitable to banking in India. Blockchain has potential for adoption in some areas. As mentioned earlier, we will continue to bring banks and solution providers closer to explore the possibilities of adoption where it benefits most with least disturbance to the existing systems.

While many are creating their own blockchain technologies, going forward, interoperability among them may become an issue.

According to Infosys report, banks are fairly excited on blockchain.

The report found

- 50% banks surveyed have already invested on blockchain or will do so in 2017.
- Average investment in 2017 will be in the tune of USD 1 million
- One in every three bank will see commercial blockchain adoption by 2018 while one will two would have done by 2020
- Almost seven out of ten banks plan to invest in permissioned blockchains while 21% want to use hybrid variants
- Cross-border payments, digital identity management, clearing and settlement, invoice financing and letter of credit process are top five use cases that banks have gone for in their trials.
- Readiness of ecosystem and the need for cooperation among banks have been found as the top challenges in blockchain adoption.

Some regulators are fairly proactive to test out blockchain. While some have taken a field trial route, some others are studying the impact on regulation. In countries like Germany, China, India, Singapore and Canada, regulators have gone for trials.

So, what is the India story?

BLOCKCHAIN AND INDIA

With the idea of blockchain as a disruptive technology gaining ground, each country is looking to chart its own path—based on both global learning and domestic ground reality. India is no exception.

India has a number of unique factors that will influence—they are already doing—how blockchain gets deployed. Broadly, they can be divided into three buckets

“We have just made a beginning with Mahindra Finance. We will see where else can it create an impact within the entire group”



Jaspreet Biindra

Sr Vice President, Digital Transformation,
Mahindra & Mahindra

Macro-economic factors

There are various macro-economic factors that potentially influence how a new high impact technology—that too something as disruptive as blockchain—gets deployed in an economy.

In case of India, the first and foremost factor that pulls everyone here is the sheer size of the market. Even in times when ease of doing business was tough, this factor alone attracted scores of business to India.

Secondly, India still stands as a hope in the not-so-exciting global economic environment, with growth predicted to be close to 8% in the next couple of years. This may impact certain technologies in both positive ways—as there will be a lot of new ideas and new investment—and negative ways—since in a high-growth environment, thrust on efficiency takes a backseat. However, India n businesses have learnt from their past experience and everybody is now looking for a profitable and sustainable growth.

Another extremely important reason, as pointed out by Jesse Chenard, co-founder and CEO of MonetaGo, the fintech firm that was associated in the trial conducted by IDRBT, is India’s diversity and challenges associated therewith. India has the fifth-highest number of billionaires in the world as well as the highest number of people below poverty line. “The idea is, if you are

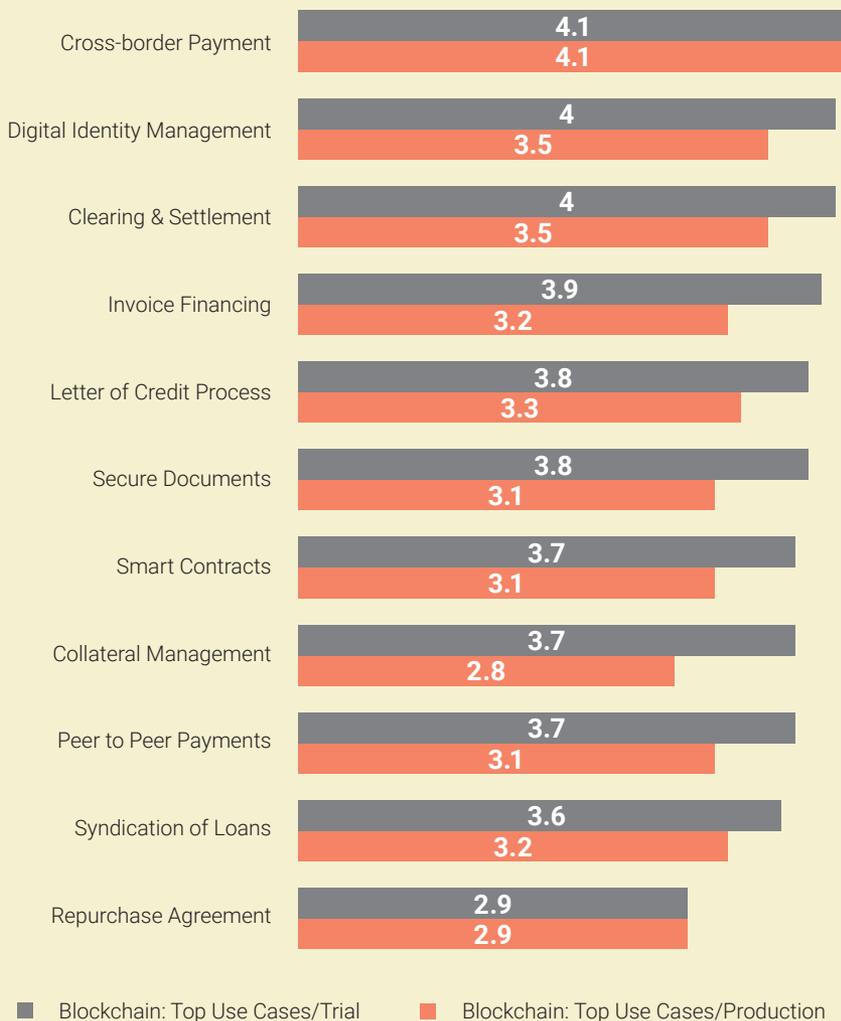
successful in India, you can virtually do it anywhere,” quips Chenard.

India is also the world’s top remittance receiving country. According to the *Migration and Remittance Factbook* published by the World Bank, India received USD 72.2 billion worth of remittances in the year 2015, though that is estimated to come down a bit in 2016. According to the recently published Infosys research, global financial services organizations have identified cross-border payment as the top priority use case of blockchain. No country will gain as much from a more efficient execution of cross-border payments as India will.

India’s large unbanked population and the recent government thrust to bring them to the financial system is another factor that would force financial institutions and the central bank to look at any efficiency enhancing technology that can effectively address the challenge. Blockchain, which is being tested for digital identity management purpose by many banks around the globe can be a potential winner.

And finally, there is the overall thrust on digital in general and digital payments in particular by the current regime in Delhi. The prime minister’s thrust on digital governance and efficiency will surely be a catalyst for most disruptive technologies that are secure and reliable.

Blockchain: Top Use Cases by Banks



Source: Infosys Research, *Blockchain Technology: From Hype to Reality*, February 2017

Industry/market-related factors

Traditionally, financial services has been India’s strength. In World Economic Forum’s Global Competitiveness Ranking, that is the area where India always scores better, often ranking ahead of many developed economies. New private Indian banks have been known to be early movers when it comes to leveraging technology in general and Internet in particular.

The balanced approach followed by Indian central bank, Reserve Bank of India, is another major factor in any

new technology adoption in Indian banking sector. In the last few years—especially during the governorship of Raghuram Rajan and his successor Urjit Patel—RBI has taken a cautious but pragmatic view of embracing new technologies, often forcing technology adoption on banks through regulation, wherever it has seen scope to enhance customer experience and efficiency using a particular technology. RBI’s proactive push of new technology adoption has not just been restricted to creating policy frameworks. It has used a mix of regulation, evangelism

and even worked with the industry to make things easier and effective. The creation of National Payment Corporation of India (NPCI) which has significantly brought down the cost of electronic transactions is a case in point. The regulator also has an academic/research unit, Institute of Development and Research in Banking Technology (IDRBT) which keeps studying the opportunities and challenges in new technology areas. It is not a coincidence that both these units have been actively involved in testing out blockchain as a proof of concept.

However, despite all the proactive stance of the regulator and a few banks, Indian banking sector has not been able to cut cost of banking services drastically. This is something that prompted former governor Raghuram Rajan to openly express his disappointment. Speaking in an IDRBT conference in late 2014, Rajan said the cost structure in the banking system was still “significantly high” despite use of all the information technology.

“We can see the effect of the IT revolution everywhere in the banking system, except on the expenses side,” he said. “Why aren’t the expenses coming down?” he asked. “It is only by reducing the cost of transactions (that) we can reach all,” he said. This came after his criticism of the hasty rollout of Prime Minister’s Jan Dhan Yojana. Virtually, he was challenging short term government push without having a long-term plan to make the initiative sustainable.

And he had a point. All that banks have done is to do the things the old way, but a little more efficiently and with more convenience to the customer but have not rediscovered the model itself to leverage the new technology era.

Blockchain comes as a perfect godsend to achieve this objective.

Tech/supply side ecosystem

The third important aspect—and

India's position is quite unique here—is the fact that India is a tech-hub. Apart from being a large technology outsourcing destination, India is also the home to vendors with large core banking market share globally. Two of the top three core banking solution vendors—Infosys and TCS—are headquartered in India.

Of late, India has also seen a lot of activity in the fintech arena. The country has become one of the global fintech hubs. While in many developed markets fintechs and banks have enjoyed an uneasy relationship, in India, most progressive banks like ICICI Bank, Axis Bank and HDFC Bank have proactively gone to fintechs, creating contests and hackathons to get the best of innovations, sometimes even sharing their APIs with these fintechs.

In short, India is today a vibrant powerhouse of fintech. That will—and the early signs only confirm the trend—impact blockchain trials, rollout and deployment in a unique manner in India, making it a global learning testbed.

BALANCED APPROACH, DID YOU SAY?

RBI, which has been praised for its balanced approach, started with a customary note of caution.

In a press statement dated 24 December, 2013 RBI cautioned against the use of virtual currencies 'including Bitcoins'. "The creation, trading or usage of VCs including Bitcoins, as a medium for payment are not authorised by any central bank or monetary authority. No regulatory approvals, registration or authorisation is stated to have been obtained by the entities concerned for carrying on such activities," the statement said.

However it also clarified that RBI was "examining the issues associated with the usage, holding and trading of VCs under the extant legal and regulatory framework of the country, including Foreign exchange and payment

systems laws and regulations."

Exactly two years after that, in December 2015, RBI's Financial Stability Report went all out for blockchain. Devoting a full section to blockchain titled Implications of disruptions –Blockchain technology, it said, "Regulators and authorities need to keep pace with developments as many of the world's largest banks are said to be supporting a joint effort for setting up of 'private blockchain' and building an industry-wide platform for standardizing the use of the technology, which has the potential to transform the functioning of the back offices of banks, increase the speed and cost efficiency in payment systems and trade finance."

The intent was quite evident. In less than a year, Indian banking industry was ready with some trials. RBI, continuing its proactive stance, asked its academic and research unit, IDRBT to work on the area. And soon, the institute had taken multiple steps. While it was getting ready to do a field trial, it had studied the technology and its broader applicability to Indian banking system.

"India provides a lot of learning because of its diverse market structure"



Jesse Chenard
Co-founder and CEO, MonetaGo

It has also formed a Blockchain Working Group, with representatives drawn from RBI, commercial banks and tech companies.

"We will be holding a few workshops bringing bankers and solution providers together to have further deliberations on the points and pointers indicated in the whitepaper (on blockchain)," says Dr AS Ramasatri, director of IDRBT.

POCKETING LEARNING

With stakes high and with a supportive regulatory regime and technology ecosystem, it is natural that Indian companies have decided to take a dive. Half a dozen organizations have successfully completed proofs-of-concept, many more have initiated the efforts.

In the last six months—and that is when the action started—most of the new private sector banks have initiated blockchain PoCs.

In October 2016, ICICI Bank announces successful completion of pilot transactions via its blockchain network with Emirates NBD on a custom-made blockchain application, co-created with EdgeVerve Systems, a wholly owned subsidiary of Infosys. One transaction was executed to showcase confirmation of import of shredded steel melting scrap by a Mumbai-based export-import firm from a Dubai-based supplier. The other one on the blockchain application was a transaction that enabled an ICICI Bank branch in Mumbai to remit funds to an Emirates NBD branch in Dubai in real time.

January this year saw a series of announcements of successful completion of PoCs by a few banks.

Yes Bank announced implementation a vendor financing solution which allowed its anchor client Bajaj Electricals to digitize the process for discounting and disbursal of funds to its vendors by integrating seamlessly with the bank's systems. The blockchain-based smart contract

BLOCKCHAIN TRIALS IN INDIA						
Time	Trial Owner	Type Of Entity	Other Partners	Platform	Implementation Partners	Use Case
October 2016	ICICI Bank	Commercial Bank	Emirates NBD	EdgeVerve Blockchain Framework	EdgeVerve Systems (Infosys)	Trade Finance, Cross-border Remittance
October 2016	Kotak Mahindra Bank	Commercial Bank	NA	NA	NA	Trade Finance, Cross-border Remittance
November 2016	Mahindra & Mahindra	Non-bank financial co	NA	Hyperledger Fabric	IBM	Trade Finance
January 2017	Yes Bank	Commercial Bank	Bajaj Electricals	Hyperledger Fabric	Cateina Technologies, IBM	Trade Fiance
January 2017	IDRBT	Regulator promoted research/ Academic institution	SBI, PNB, HDFC, Citibank, Deutsche Bank (Commercial banks), NPCI (Payment Co)	Hyperledger Fabric	MonetaGo	Trade Finance
January 2017	Axis Bank	Commercial Bank	NA	Ripple	NA	Cross-border Remittance

has been written by fintech start-up Cateina Technologies and leverages IBM Watson Conversation, a cloud-based cognitive service and is built on Hyperledger Fabric supported by IBM.

Axis Bank, India's third largest private sector bank, also announced a trial using an alternate blockchain technology, Ripple. It is testing the PoC to try out cross border payments.

Though not officially announced, according to media reports, Kotak Mahindra Bank too initiated a blockchain pilot, for transactions in cross-border remittances and trade settlements.

That means there's news from four of the top private banks in India about blockchain trials.

But there's a non-banking company too. And it is an interesting case. In November 2016, IBM and Mahindra & Mahindra announced development of a blockchain. The pilot, to enable supplier-to-manufacturer trade finance transactions through a permissioned

distributed ledger, was completed in December 2016. The blockchain for Mahindra & Mahindra is designed to transform supplier to manufacturer trade finance transactions. According to Jaspreet Bindra, Sr Vice President, Digital Transformation, Mahindra & Mahindra, who spearheaded the pilot in the company, the current invoice discounting application of blockchain in group company Mahindra Finance is just a beginning. "We will see where else can it create an impact within the entire group," Bindra says explaining why a non-banking company like Mahindra went all out for the trial. He says production deployment can happen anytime now and does not rule out the possibility of making it available as a solution to others.

Apart from commercial organizations, IDRBT, the research unit of Indian central bank, RBI, too has conducted a successful, using the Hyperledger Fabric platform. New York-based fintech firm MonetaGo was

involved in implementing it. While NPCI provided the payment inputs, five banks were involved for providing inputs on business processes and test scenarios and were involved in the review. The trial involved domestic trade finance letter of credit as a use case. Like all such trials, the thrust was on testing that it actually works – and with transparency. IDRBT published the results in a whitepaper released in February.

EARLY TRENDS

It is just the beginning. Yet, early signs do indicate some definite—and perhaps logical—trends.

The most important and most visible is the use cases that Indian organizations have gone for. While most of the central banks, including Bank of Canada, People's Bank of China and Monetary Authority of Singapore have gone for testing digital currency applications, Indian central bank has chosen to take a cautious approach and

go for use cases “where it benefits most with least disturbance to the existing systems”, as the IDRBT chief points out. The famous ‘balanced approach’ of RBI is clearly visible here too.

In the Infosys research released recently, globally banks have identified cross-border payments, digital identity management, clearing & settlement, invoice financing and letter of credit process, in that order, as the priority. India has seen test cases for all, other than digital identity management. That is because with a system like Aadhar in place, the low-hanging fruits in digital identity management do not require an untested technology like blockchain. Aadhar itself can handle that.

While clearing and settlement and smart contracts may take a while, peer to peer payments is not going to happen anytime soon, till people at large and the regulator are convinced about security.

In terms of technology, Hyperledger Fabric clearly seem to be leading, though Ripple has made an inroad.

WHAT'S NEXT?

Needless to say newer use cases will be tried. “In the inter-bank segment, centralized KYC can be of great benefit. Similarly, syndication of loans can be a potential area of application,” says Dr AS Ramasastry, director IDRBT.

As organizations move from trials to productions, there are indications that serious investment is being planned in trade finance and cross-border payments. But it is a question of first few days. Once the system gets tested and internalized, the growth will be far more rapid.

Blockchain is a technology which, by definition, works on the principle of sharing—sharing the ledger. It requires interbank collaboration to really move forward. With regulation still restricted to national boundaries, it is difficult to expect that operational collaborations involving banks in different

geographies will become a reality soon, except where it is a basic need, such as cross-border payments.

Many countries such as Australia, China, Canada and Japan have formed regional consortia of banks. Reportedly, India may see such a consortium soon. State Bank of India, India’s largest bank, has reportedly started a consortium of banks and other organizations to create a multi-party permissioned blockchain, called Bankchain. It is reported that 10 commercial banks such as ICICI Bank, Axis Bank, Central Bank of India, DCB, Deutsche Bank, HDFC Bank, IDBI Bank, Kotak Mahindra Bank and Saraswat Bank are likely to be part of the consortium that include IBM, Microsoft, KPMG and Skylark.

What India may well lead in—Mahindra & Mahindra’s case is just one example—is the application of blockchain into non-banking areas such as public services. Land records and the planned property database are ideal testbeds for a shared ledger. If done successfully, they could pave the way for many such applications around the world.

While opportunities are immense, there are challenges that remain. These challenges could be operational, technological as well as regulatory. Initially, they will be operational as no commercial company will get into something while testing out a new technology where current regulation

may not be adequate/relevant.

Infosys research among global banks identified six key challenges, with top three being readiness of ecosystem and need for cooperation within banks, integration of blockchain applications with existing enterprise applications, lack of governance model among stakeholders.

In India, cooperation among banks may not be too much of a challenge because RBI usually takes a proactive step to bring them together and does not shy away from making its hands dirty, if required, as it has done in payment systems by actively promoting NPCI. IDRBT has been mandated to do that for blockchain.

Another possible regulatory change could be how transactions get reported to the RBI. In a consortium-based permissioned blockchain, significant governance function will remain with the consortium and not the individual banks. Since the transaction will be recorded on the distributed ledger, logically, it is the consortium that should report to the regulator. That requires significant changes to regulation.

Today, consortiums do not even have their own governance models. Global lessons will be important.

Once a distributed ledger is implemented, the question arises is if the regulator will have access to the transaction level information. Some experts, including Rajashekara V



Dr AS Ramasastry
Director, Institute of Development and Research in Banking Technology (IDRBT)

“We will explore adopting blockchain where it benefits the most with least disturbance to the existing systems”

Top Challenges of Blockchain



Source: Infosys Research, *Blockchain Technology: From Hype to Reality*, February 2017

Maiya of EdgeVerve say, the regulator may possibly have access to read but not modify. Nevertheless, for the user, it could be a privacy issue that needs to be tackled by the bank.

How the current technology investment of banks gets protected may also emerge as a technology challenge. Whether blockchain can work with the existing core banking, and if yes, what changes will be required, will be important questions. But we expect that banks will first leverage blockchain in areas other than traditional consumer and corporate banking. They may well satisfy the criteria of Dr Ramasastri, “where it benefits most with least disturbance to the existing systems.”

So, by the time they are confident with blockchain as a technology, some of the questions on technology integration would probably have been adequately addressed.

Lest we forget, the current enthusiasm and feel-good is based on success of PoCs. But as Dr Ramasastri clarifies, “A proof of concept is some kind of demonstration and not full scale deployment. It has its limitations.”

None of the non-functional requirements have been tested in the PoC as the objective was to test that the technology works and can

deliver the functional requirement without any hiccups. In fact, very recently, RBI deputy governor R Gandhi warned that the potential of blockchain may be overstated, though he was speaking mostly in the context of virtual currencies.

But there is no denying that there are certain applications/use cases that

“In the next 6-8 months, all the banks that have gone for PoC, will go for production”



Rajashekhar V Maiya
AVP & Head – Finacle Product Strategy,
EdgeVerve

can be moved to blockchain right away without much disturbance to the rest of the business and with significant efficiency gains.

Initially, most of the use cases are looking for efficiency gains but once the system matures and if blockchain actually delivers on its promise of being a more trusted platform, business organizations will be able to bring down the risk considerably.

That will help them try newer things. Says Sriram Raghavan of IBM, “The next level of innovations will really come with new products, because you have taken away risk too.”

It may create completely new business models. As with any new technology, it is always applied to enhance the existing processes before people begin to realize that they can do things completely differently, or part of the process becomes redundant in the new scenario and so on. Blockchain will obviously see all of that, so fundamental is its impact.

And we do not need to wait for long to see how it shapes up. Going by the prediction of Maiya of EdgeVerve, all those banks that have done their PoCs will go for production in next six to eight months. That is this year.

So, 2017 may well become the year of the blockchain ■