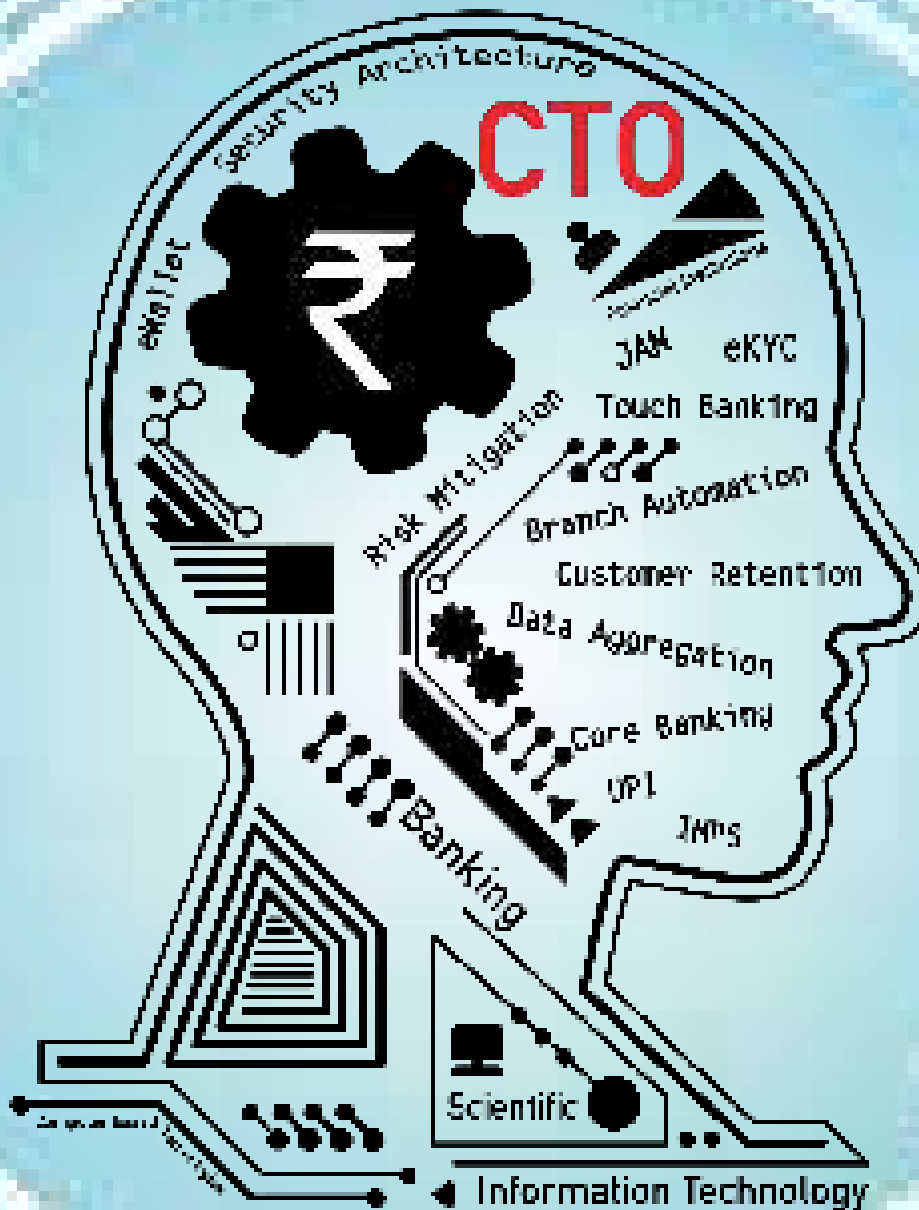Flashback

BFSI
2nd Annual
Leadership Summit
DIGITAL MONEY - THE FUTURE OF BANKING
3 June 2016
Vivanta by Taj- President
MUMBAI

Security Architecture

CTO

eWallet

JAM   eKYC
Touch Banking
Risk Mitigation
Branch Automation
Customer Retention
Data Aggregation
Core Banking
UPI
IMPs

Banking

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Information Technology

HARBINGERS
of Hi-Tech Banking

Technology officers are redefining banking experience by making it convenient and cost-effective through the use of right technologies

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*Hon'ble Chief Minister
Rajasthan*

**Shri Rajendra Singh
Rathore**
*Hon'ble Minister of
Medical, Health & Family
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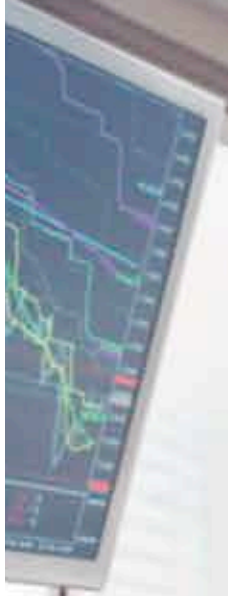Kartik Sharma - 8860651635 | Priyanka Singh - 8860651631 | hlf@eletsonline.net

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Banking on Technology

E ver bothered to recall when was the last time you visited your bank for conducting routine transactions? Many of us won't be able to, I bet. After all, where is the need to take pains to visit the brick and mortar bank branches when you have the luxury to carry your bank in your pocket! All you need to do is to take your smartphone out and complete the transactions just by pushing a few buttons. And, it's done!

The presence of technology is all pervasive now, and the banking sector has been among the leaders in adoption of technology as it makes advancements with each passing day. From the times of taking half-day leave from your office only to withdraw money from your bank account to visiting an ATM point at your convenience round the clock to pull cash, to making bill payments online, to making cashless eCommerce transactions… The way we did banking earlier has changed once and for all.

And, the one person responsible for planning and execution of technology in the banking ecosystem is the Chief Technology Officer (CTO), also referred to as Chief Information Officer (CIO) at some places. In the present-day cut-throat competition, mainly driven by the adoption of right technologies, any wrong decision by the CTO can put the business prospects of a financial institution in jeopardy.

That is the kind of transformative power attached to the profile of a CTO — from being just the technology advisor to a bank, today he is looked upon as the business driver for the financial institution he serves.

In view of the ever-growing role of CTOs, evolving in sync with the evolution of technology, Elets Technomedia has organised "BFSI CTO Summit" in Mumbai on 23rd August 2016. The Summit will bring together the CTOs of leading commercial banks across India, senior executives, technology innovators and solution providers. They would discuss and deliberate on the emerging trends of technology being adopted by banks, share innovative ideas and solutions and build network, and of course, talk about the changing profile of CTOs in financial institutions.

The day-long national-level Summit is tailored to converse and collaborate through a series of informal conversations led by the attendees themselves. They would also deliberate on the issues facing IT heads of various banks today and the opportunities lying therein. The BFSI CTO Summit is also aimed at helping the people at large learn from the top IT practitioners as they share their varied experiences.

We dedicate this CTO Summit Special issue to those who have influenced technology adoption in the Banking & Financial Services and Insurance Sector in general.
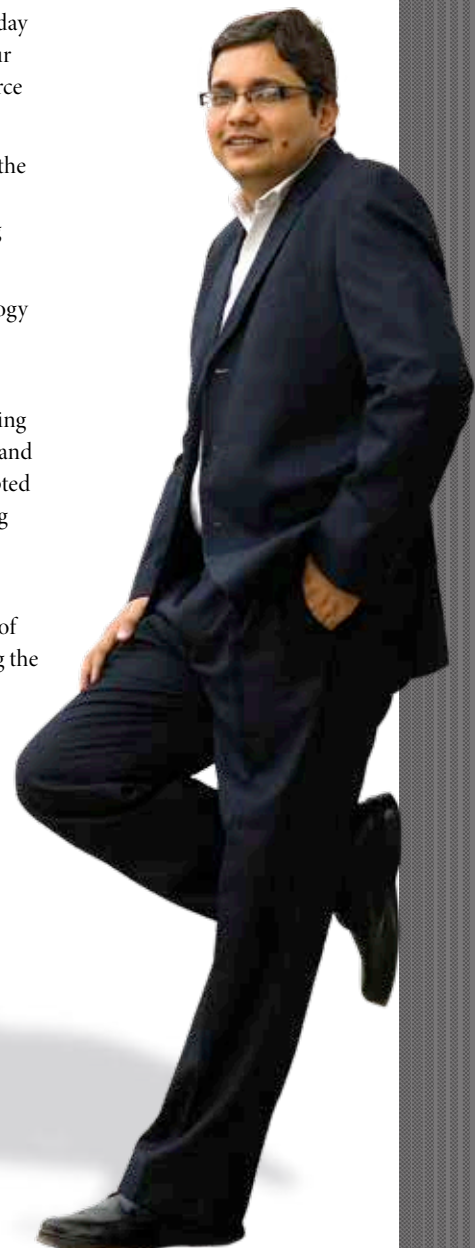
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CTOs

Harbingers of Hi-Tech Banking

The role of CTOs in the banking ecosystem has never been as critical and powerful as it has evolved into in the present times. The scope of their responsibilities has widened and they are now looked upon as the business facilitators rather than being just the tech experts to their organisations, writes **Sandeep Datta** of Elets News Network (ENN)

In the times of smartphone-weilding consumers constantly looking for convenient banking services and the threat perception from cybercrime groups and even state actors, the role of Chief Technology Officers (CTOs) is turning out to be more critical than ever.

EVER-EVOLVING BANKING SYSTEM

Over the past 10-15 years, there has been a noticeable shift from traditional to channels-based banking. While introduction of ATMs gave customers anytime access to their money, the cards-based banking unleashed a revolution by enabling cashless transactions.

Affordable technology infrastructure, like inexpensive but powerful computers and other handheld gadgets and higher Internet bandwidth at a low cost, have facilitated easy access to banking products and seamless banking transactions. Call centres and phone banking services have furthered the customer convenience.

By directing banking transactions through different electronic channels and offering customers direct access to their accounts, banks can now offer quick service and transparency as well.

Introduction of mobile banking, primarily through SMS, was another milestone. Launch of smartphones brought about a revolution of sorts in the banking world. As the number of mobile phone users in India grows rapidly, banks are exploring the feasibility of using the ubiquitous device as an alternative channel for delivery of full-fledged banking services.

ROLE OF CTOs

In such scenario, the role of CTOs or Chief Information Officers (CIOs) acquires an altogether new dimension– apart from being the technology experts, they are also the present-day business facilitators for their organisations. A section of banking industry experts, meanwhile, feels that today's disruptive landscape holds a big opportunity even for small institutions with the right technology to compete and swiftly achieve a scale on par with the Goliaths of the

sector. Hence, a large institution's CTO carries even a bigger challenge to enable the firm protect its market share and grow as well.

"In addition to ensuring the best technology for the firm, if the CTO is able to leverage recent developments and create technical options for both -- existing businesses as well as for new businesses, it will help fulfil a critical mandate of that role," says K G Subramaniam, Director-Technology, Barclay's Bank.

"In particular, the CTO would need to partner with the business development in incubating new businesses for the firm that exploits technology breakthroughs, giving an invaluable head-start and thus mitigating the risk of being left behind," he adds.

As the banking industry is in the midst of an IT revolution, banks are now becoming a one-stop supermarket. The focus is shifting from Mass Banking to Class Banking with the introduction of value-added and customised products.

According to Samuel Joseph, CTO & CGM, Export-Import Bank of India, technology allows banks to create what looks like a branch in a business building's lobby without having to hire manpower for manual operations.

"The branches are running on the concept of 24X7 working hours, made possible through the use of tele-banking, ATMs, internet banking, mobile banking and e-banking. These technology-driven delivery channels are being used to reach out to maximum number of customers at a lower cost and in most efficient manner."

With technology becoming backbone of almost every business from IT to services, the role of CIOs/CTOs has drastically changes, redefining their engagement in companies' affairs from functional to strategic business.

CHANGING BUSINESS NEEDS

In recent times, it has been observed that technology is at the cusp of witnessing one of the biggest disruptions of present times like mainframe, client server, internet and cloud. These disruptions are fast changing the business landscape.

To be aligned to the new scheme of things, CTOs/CIOs are expected to understand the business quite well to drive revenues. For a bank's CIO, it is critical to run

the application in a fashion that it ensures more revenue generation.

In their new avatar, the CTOs/ CIOs have to define technologies that are relevant to meet future demand, strategise to deploy these technologies for optimum benefits and look for competitive differentiation.

As the tech industry is also viewed as being all about how one could do more with less, this is what the CIOs/CTOs are expected to play in their newly defined role.

From a financial institution perpective, Anup Purohit, Chief Information Officer, Yes Bank, feels that the role of a CIO is quite diverse these days. "They have to get the best of the technologies and, at the same time, understand the business very well, and then marry them

> " The role of Chief Technology Officers or Chief Information Officers acquires an altogether new dimension – apart from being the technology experts, they are also the present-day business facilitators for their organisations

together in a manner that finally adds value for both businesses as well as customers.

"It is indeed a demanding and challenging role. We – as CTOs or CIOs – always sit in a hot chair and have to be always alert 24x7 and ensure that we – if not ahead of the trends – at least don't lag behind in our business," Purohit observes.

Defining the role of CTOs, Rakesh Kumar, General Manager - IT, Punjab National Bank, says that "we act as a catalyst for business development of the financial institution by aligning technology in line with the business goals in multiple ways".

"He (CTO) brings in operational efficiency through automation of various manual processes and thereby improving customer convenience and satisfaction, which leads to business development."■

EVOLUTION OF INDIAN BANKING SECTOR

- The nationalisation of major private sector banks in 1969 made banking accessible even to the unbanked population of the country, though the banks had emerged in India as an institution in the late 18th century primarily to cater to the needs of the ruling Britishers.
- The economic liberalisation in the early 1990s ushered in the era of privatisation. During this time, many new private banks—the modern-day tech-savvy banks—were born. Also, a few foreign banks commenced their India operations.
- All these banks were quick to leverage emerging technologies, to woo customers and win them over with their tech-aided faster services. It helped infuse a sense of urgency in the public sector banks as well as the older private sector banks to jump onto the technology bandwagon. It completely reinvigorated banking operations in India.

'Banker to Every Indian'
SOARS ON TECH WINGS

The State Bank of India is in the process of transforming its operations through technology adoption; while partly digitisation has already been achieved, the Bank is making all-out efforts to fully digitise its operations, **Shiv Kumar Bhasin**, Chief Technology Officer, SBI, in an interaction with **Poulami Chakraborty** of **Elets News Network (ENN)**

What role does a CTO play towards the business development of a financial institution?

As CTO, I handle the Technology wing in the State Bank of India, whose job is to stay focused towards and work on innovations like digitisation, re-engineering and transformation areas. Under these heads, we are carrying out various programmes, which lead to transformation of the Core Banking System (CBS), going into the various new digital channels – be it a variable device, social media banking, the wallets or newer technologies. These are the basic functioning that a bank performs. We are using innumerable variety of innovative frameworks, most of which are the market leaders. A lot of transformation has also been brought about in the product platform, like in the foreign office, we migrated from our old version of core banking platform to the latest version last year in record time. Simultaneously, we also started the trade finance platform, for which, sufficient functionality was not available in the existing platform.

SBI has two business units — National Banking Group (NBG) and International Banking Group (IBG). Last year, NBG MD Krishna Kumar decided to go for the trade finance platform, and around 25 per cent of the revenue of the Bank should be coming in the next five years through international banking. The percentage currently is much lower, but it has witnessed improvement in comparison to the last year. Keeping in mind the revenue growth, we wanted a diversified platform, which can host many international products suiting the global market places as well as cater to the trade corridors across the globe. This way, some of our Indian customers having businesses abroad

and those in India would be served. Our customers are our king and SBI has been successfully working in this space for the past few decades, winning over new customers every passing day.

How do you perceive the tech implementation in the mainstream Indian financial institutions?

Technology adoption in banks is significantly high. It used to be a huge challenge a few years back, but now Indian public sector banks (PSBs) have learnt that if they have to survive in this competitive market, they have to embrace technology, also because it helps cuts the overall operation costs. The cost-to-income ratio can be brought down below 40 per cent using technology. We have a clear message from the SBI Chairperson that the cost-to-income ratio over a period of three years should be brought below 40 per cent, which is the global benchmark. Most profitable banks are running the cost-to-income ratio at around 40 per cent or below. That's where we have a lot of drive to adopt digital technology.

Besides the adoption among the financial institutions, it is important that these technology lessons on banking and financial services are also equally imparted to the end-users, so that they can make optimum utilisation of these facilities. SBI will always act as a professional in knowledge-driven banking to increase awareness among users.

What challenges do you see in offering the best-in-class experience to the customers through technology adaption?

When we look at offering the world-class services, the key challenge is that our domestic processes are still paper-based, while in the international banking, the drive is to go for digital, i.e. paperless. That's where we are bringing this multi-entity deployment of Misys platform, so that we can have our back-office trade operations in all the 26 countries consolidated in India. Currently, all trade finance operations are in the specific countries. But very soon, we will have a very small footprint or very small shop in foreign countries, with a Centralised Processing Centre doing the complete back-office operations in India. India being a cheaper location, many western banks are setting up their operation centres here, while we still continue to hold our operation centres in those countries.

Our operations and processes can be made paperless as well. We will try and meet all the regulatory requirements to go paperless. We will also ask the customers to meet the necessary requirements on the Misys Trade Portal itself, so that they don't need to visit branches. And then, Indian teams will be serving the global customers from trade finance centres. This is where exactly we want to enhance the customer experience and streamline the processes, having a same product across all these countries deployed in a multi-entity fashion. The first step we took during this rollout was that we unified the business processes largely across the country. If the business processes are aligned, remaining things will start falling in place. So, unless there are specific regulatory requirements in some countries, the trade finance process have been unified and same processes are executed across the countries.

What is the concept of 'Digital Financial Superstore' all about?

We are in the process of setting up a Digital Financial Superstore, where all the corporate banking products would be hosted, customer acquisition would happen online and the corporate banking products could be bought from the Superstore. That will be a very big game changer for the industry. It is not just the front-end but backend process would also be paperless, aligned with that product, and customer acquisition could be straight through the process.

What role small FinTech companies could play in the Banking sector?

There is a major role for the nimble-footed or small FinTechs and companies like Encore Theme in the banking industry. Having a lateral thinking and coming up with a wide range of products is an advantage. We have an opportunity to explore new products of channel application and business support application instead of being just a reseller of old products. It can automate the back-office operation and customer experience. That brings a huge opportunity for companies if they carry out innovative thinking based across their domestic and international experience. They understand the pain points of the industry, so they should focus on this area as an opportunity for them.■

Let NPCI Be Watchdog of
YOUR PAYMENTS

NPCI has created its own domestic card called RuPay, one of its best innovations enabling a large number of financial institutions to distribute this product among customers not having bank accounts, says **Dr N Rajendran**, Chief Technology Officer, National Payments Corporation of India (NPCI), in conversation with **Poulami Chakraborty** of **Elets News Network (ENN)**

What role does a CTO play for business development of a regulatory body like NPCI?

The National Payments Corporation of India (NPCI) has been created to regulate retail payment systems by the RBI. There existed a lot of payment methods and systems within the mechanism of Indian economy like inter-bank ATM services, NEFT, etc. The RBI wanted to create a separate system to regulate and supervise the other retail payment services. With this, the RBI instrumented IVF, now known as NFS (National Financial Switch).

We are a 25-year-old company with 60 per cent of our stakeholders in PSU banks and the remaining 40 per cent with the private and corporate banks. Even though we have expanded the Board now, the same structure continues where 60 per cent presence is from PSU banks and 40 per cent from private banks.

We are the only payments facilitating regulators in the country, mostly in inter-bank transactions. The RBI has already asked us to make a checklist of cheque clearing procedures, given that we are the only institute responsible for check passing and clearing in India. The National Automatic Clearing House (NACH) is a product of NPCI, which

was earlier conducted by the RBI for ECS clearing, and now has been transferred to us.

Besides this, we have also processed NFS, which is the domestic processing for ATM cards. Irrespective of scheme and banks; we are responsible for all cards. In addition to these, we have created our own domestic card called RuPay, one of our best innovations enabling large number of institutes to distribute this product among customers not having bank accounts in large financial institutions. Even the newly introduced small banks and payments banks can also provide an ATM Card which can be used in any ATM in the country. Besides, our institution is also responsible for functioning and payments in the e-commerce construction and also for merchant establishment. In a recent measure, we have also introduced UPI (Unified Payment Interface) which is still in a regressive testing phase so that more and more banks can adopt it for direct customer facilitation.

Tech implementation in the Banking sector has evolved with time. How do you see the tech implementation in sector reaching the next level?

We have experienced a holistic technological evolution of the banking industry, starting from introduction of computers, total bank automation, core banking system, etc., which show how rapidly the banking industry has adopted technology over the years. These are not because the financial institutions have to introduce these facilities in their systems, it is also because of the society that was open enough to accept these changes and hence adopted them. Earlier, there used to be connectivity issues in our country, which has been curtailed to a great extent and can also have great infrastructure facilities, with which the banks are able to provide great services to their customers with application of newer and newer technologies.

Thus, the growth percentage of tech-dependence and its application is forecast to be rapid and in double digits for the years to come. Given the unbeatable competition among financial institutions in the market, banks would require to innovate on technologies and increase their infrastructure and facilities to be made available to people round the year and round the clock to sustain in the market.

What tech adaptation has been effected within the NPCI ecosystem to make lives of their stakeholders easier?

We do not face the end-customers, as it's the banks which are our customers. Most ATM transactions happening through various commercial bank channels actually happen through NPCI. For this, that level of versatility is essential to process the payments anytime and at any place. In 2010, NPCI ensured this fact by taking over NFS from Institute for Development & Research in Banking Technology (IDRBT). Slowly, we have expanded

our infrastructure and services to reach a transaction capacity of about Rs.32 million per day, including transactions for DBT and others. We have a capacity to handle transactions worth Rs.100 million per day, with the current set of infrastructure that we have.

With the introduction of technologies, like Cloud, Social Network and Internet, how do you feel their convergence is going to impact the banking system?

Whenever a new infrastructure is introduced in the Indian banking, we have to work to understand how to

> We do not face the end-customers, as it's the banks which are our customers. Most ATM transactions happening through various commercial bank channels actually happen through NPCI

use it. Of late, Cloud has emerged as a great facilitator of services in the Indian BFSI sector and we have to use it to know how to use to make its optimal use in our ecosystem. With these simple techniques, one may reduce the operational costs to a great extent.

Online wallets are the latest phenomena in the Indian BFSI sector. Do you think they are a threat to the physical banking or internet banking?

In this case, we have to focus on the untapped market in a highly evolving space for e-commerce, where there is a huge scope to cover the customers, who still prefer transacting through physical cash rather than through wallets, where one can never feel or touch money but can use to buy a utility or service. ■

How would you define a CTO's role in financial institutions and his contribution to business development?

Initially, the role of a CTO was envisaged as the head of existing technology, who would ensure the organisation's investment in technology is the right one, and that the technology is purchased and implemented effectively.

In any department or division of any organisation, software and hardware evolve rapidly. But these tools are required to be updated regularly. So, previously, a CTO was considered to be responsible for managing all the necessary changes in the area of Information Technology implementation in the organisation. However, the BFSI sector in particular saw increasing dependence on technology vis-a-vis new product innovations. In fact, new product innovations came from technological ideas only. Technology made business models viable and practical, and companies started taking the initiatives further.

So, a CTO actually helped a business model run and work for the betterment of the institution and customers. Whether it is any loan product or any kind of mobile digital channel, CTO's involvement became crucial in building a feasible strategy rather than just maintaining and managing the existing IT infrastructure and solutions. And, as this trend started evolving, CTOs became a part of planning sessions along with CFOs and CEOs. Several technologies, including the Block Chain technology, are a result of increased active role of CTOs.

How has the banking sector evolved in last few years?

The BFSI sector, which has always been an aggressive user of technology, is primarily an information-based business. Since it does not deal in any physical product, technology can benefit the banking sector better than any other manufacturing company. So, technology

Technology Turns Out to Be
GAME CHANGER AT NSE

Technology interventions have made the National State Exchange (NSE) operations much less prone to fraud and manipulation, and helped attract much greater participation as compared to erstwhile manual operations, says **Sankarson Banerjee**, CTO-Projects, NSE, in an interaction with **Poulami Chakraborty** & **Harshal Desai** of **Elets News Network (ENN)**

has enormously expanded the reach and scope of the sector in the last four-five years. The increasing number of products, like loans, credit cards, products related to saving accounts, asset products and insurance products, clearly exhibit the expanded scope, which has been possible following the technological innovations. There are plenty of choices for customers today. All these choices have been enabled with the help of the advanced technology. Further, the modern technology has also enabled the institutions to deliver products in a much more committed way.

The reach of financial institutions has also expanded to a great extent. We now don't have to restrict ourselves to 9 am to 3 pm to complete the banking tasks, as we can use our mobile phones and computers to perform several banking-related work. In India, banks have actually taken a big leap and have not even stopped issuing cheque books by default. IMPS options have performed very well in India. We have come a long way from branch banking to digital banking.

How has the technology been adopted in the NSE ecosystem?

The NSE is a child of technology. We are the first fully electronic exchange in India. We had become a market leader in the very years of our inception. Technology is much less prone to fraud and manipulation and it has helped us have much greater participation in India, and take out footprints to most of the parts of India. And, the expanded reach and participation ultimately helped customers, as they have access to several technology-enabled products offered by the Exchange. Our Nifty 50 is probably the largest index. It is purely an electronic creation. All these benefits have made the life of customers easy.

Manpower-wise, the NSE is a lean exchange — we have less than a thousand employees, as our system is completely automated.

What are your views on the increasing number of e-Wallets? Are they threats to mobile banking applications?

e-Wallets are not fundamentally different from mobile banking. They are not regulated the way banking applications are. However, there are a few limitations with them, especially on amount it can store, though e-Wallets can certainly ignore several rules, which a banking application can't. However, all the money travels through the banking systems.

Are new trends like mobile, social media or internet banking a threat to regular banking system?

The banking sector is happy to adopt all these new trends and technologies. However, these may pose a challenge to individual banks. So, the banks, which are not able to keep pace with the changing trends in demand, will suffer. According to a survey, only 4-5 per cent people want to visit a branch. So, the banks that can move with the time will ultimately benefit. Better payment options better bill payment and better money management are some of the major requirements of today's customers.

Is the NSE exploring technologies like biometric authentication for their customers?

We don't do biometric authentication ourselves, because it is complicated. We rely on Aadhaar. We are not a B2C

> "The NSE is a child of technology... Manpower-wise, it is a lean Exchange — we have less than a thousand employees, as our system is completely automated

company. We don't directly serve customers – we serve brokers, who serve our customers. We have started linking things to Aadhaar, but customers do not login to our system. We are actually the backend. However, internally we have started biometric system at our data centre. We have also experimented with voice verification technology. We are actually working on India-specific requirements.

Can you share your opinion about the Unified Payment Interface (UPI) system?

UPI is a unique innovation. It allows people to transfer money to other people in a secure way instantly. This feature is going to change the way payments are made in the country in the days to come. ∎

CTOs can Drive
GROWTH
OF BANKS

The present-day technology-aided banking delivers not just the traditional banking benefits but also provides much greater access to information on their account status and the various services on the offering from the bank, says **Samuel Joseph**, Chief Technology Officer & Chief General Manager, Export-Import Bank of India, in conversation with **Harshal Desai** of **Elets News Network (ENN)**

What role does a CGM-IT play for business development of a financial institution?

The banking industry is in the midst of an Information Technology revolution and banks are now becoming a one-stop supermarket. The focus is shifting to Class Banking, even in Mass Banking, with the introduction of value-added and customised products. Technology allows banks to create what looks like a branch in a business building's lobby without having to hire manpower for manual operations. The branches are run on the concept of 24X7 working, made possible through the use of tele-banking, ATMs, internet banking, mobile banking and e-banking. These technology-driven delivery channels are being used to reach out to maximum number of customers at lower cost and in the most efficient manner.

In this backdrop, the technology officers play a very critical role by putting both the banks and the customers in a win-win situation. The effective implementation of right technologies has enabled technology officers to bring multiplier effect on growth and development of banks.

How do you view tech implementation by the Indian financial institutions?

This explosion of technology has changed the banks from paper- and branch-based banking to digitised and virtual banking. In the present scenario, it is difficult for any financial institution – whether big or small – to remain isolated from what is happening around. For financial institutions (FIs) in a country like India, such isolation is nearly impossible. However, the requirements of FIs are different from banks due to the nature and volume of business, focus on specific segments, spread of branches, etc. But many a time, unavailability of right technology hampers their operations. CTOs and GMs of FIs have accepted the challenge and are increasingly spending on technology front to cater to the requirements of both FIs as well as customers.

For example, Exim Bank was finding difficulties in identifying an off-the-shelf technology for some of its critical business processes, but finally implemented a CBS software, which is being used by many commercial banks in combination with some modules and customisation of some others. By transforming to a more automated and technologically-focussed environment, the Bank has been able to repurpose back-office personnel to other more value-generating projects. This has resulted in improvement of efficiency in all aspects of business, such as risk management, security, reporting, data, etc. I am sure that every FI is using the hybrid approach to implement the best-fit technology.

What technology has been adopted for internal operations within your institution?

The Exim Bank has adopted the hybrid approach for automation of internal operations. Post implementation of CBS, internal operations were targeted, and in order to make full use of CBS, the Bank took lead to become the first FI to implement RTGS and NEFT facilities. All these initiatives resulted in successful re-engineering and automaton of various manual redundant processes, which were not only time consuming but were also preventing the Bank from scaling its operations. Bank targets off-the shelf products and instead of customising the systems, Bank has tried to modify the internal processes to adopt the system.

What kind of challenges do the convergence of social media, mobile banking and cloud pose for the banking sector?

The convergence of social media, mobile banking and cloud is shifting the banking system from traditional banking to relationship banking. Traditionally, the relationship between the bank and its customers was on a one-to-one level via the branch network. The role of head office was limited to monitoring of performance and set the decision-making parameters, but the information available to both branch staff and their customers was limited to one geographical location.

But now, banks cannot rely on its branch network alone. Customers are now demanding new and more convenient delivery systems and services. The convergence is playing a dual role for the customer: these are not only providing
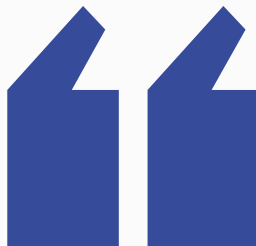
> **Many a time, unavailability of right technology hampers FIs' operations. But now CTOs and GMs of FIs are making increasingly higher spending on technology**

the traditional banking services but also offering much greater access to information on their account status and on the bank's many other services. Though it is helping the banks reach a wider set of customers, it puts additional pressure on the delivery mechanism of banks to remain up and running 24X7. Further, the convergence of all this has also given rise to the issues of privacy and confidentiality of data.

How are you addressing those challenges?

The convergence is going to become deeper and will hold key to the future of banking, and going forward, banking achievements will not be possible without IT revolution. So, the Bank is working on both fronts — on the one hand, it is boosting IT systems to enhance customer experience, and on the other, it is using the social media to gather more insight about customer, identify the potential risks, enhancing the global reach and launching new products. ∎

PNB in Sync with
CHANGING TRENDS

The Punjab National Bank is already using biometric devices in branches for users' authentication and it is also evaluating options for extending the reach of eKYC requirements to the doorstep of the prospect / customer through suitable biometric solutions, says **Rakesh Kumar**, General Manager - IT, Punjab National Bank, in conversation with **Poulami Chakraborty** of **Elets News Network (ENN)**

What role does a CTO play for business development of a financial institution?

As a Chief Technology Officer, we act as a catalyst for business development of the financial institution by aligning technology in line with the business goals in multiple ways. A CTO brings in operational efficiency through automation of various manual processes and thereby improving customer convenience and satisfaction, which leads to business development

He ensures business development by introducing digital products through innovative solutions and by ensuring cost-effectiveness in technology. They act as a guide to the various business heads in adapting changes brought about by technology.

How do you perceive tech implementation in the Indian financial institutions?

The technology implementation that started with Partial Branch Automation has now moved on to usage of centralised banking solutions in almost all banks. It was followed by aligning the alternate delivery channels like ATMs, internet banking, mobile banking, etc., with the CBS allowing banks to reap benefits of core banking. The next wave of tech implementation brought about the usage of concepts like automation of backups, putting in place cyber security operations centre, cloud services etc.

Currently, many of the Indian financial institutions are on the top end of the technology curve and looking to implement new-age solutions, like aligning their systems with Service Oriented Architecture, publishing API's for faster delivery, going in for completely digital branches with minimal human support, etc.

Technology adoption in the Indian financial institutions is evolving and with latest concepts like block-chain already on the Indian tech horizon, the technology implementation in this sector is poised to take a leap to the next level and be on par with the international peers.

What technologies have been adopted for internal operations within your institution?

We've adopted a centralised architecture for the core banking and related applications, which is accessible over the Wide Area Network. To mitigate network and security-related vulnerabilities, all the applications are installed in three-tier architecture, i.e. web server, application server and database server. These servers are behind firewalls and Intrusion Prevention Systems, and access lists are configured on routers. The traffic is encrypted between the data centre and the branch users. A mix of RISC (Reduced Instruction Set Computer) and X86 make-servers are being used. The development platform is both Java and Net Bank, having Security Operation Centre (SOC) and Network operation Centre (NOC). Also, the Bank is following change management process and having real-time network and application monitoring system.

What sort of challenges does convergence of social media, mobile banking and cloud pose for the banking sector?

These include the security, turnaround time for response, the impact of negative comments and analysis of unstructured data/information. Applications across different mobile devices are working on different platforms, data management, etc. Mobile applications pose greater challenges associated with application security, governance and version management. Challenges in the cloud include building appropriate Service Level Agreements, increase in recurring cost, challenges in using the surplus manpower on migration to cloud, audit, and availability of suitable professionals on the rolls of the outsourced service providers to manage the cloud.

How are you addressing those challenges?

The challenges are addressed through structured processes for outsourcing, vendor selection, technical evaluations, peer communications, inputs from advisors/ consultants and vendor interactions, evaluating responses and evaluation based on a structured process, price discovery, through reverse auction or otherwise, site visits and third party audits, among others.

With various payment applications becoming trendy, is mobile-based transactions under threat?

Non-banking mobile/payment, service providers and customer service points are also offering payments services like bill payments, recharge, funds transfers, etc. These types of transactions are allowed up to a certain limit without insisting on KYC facilities.

However, the untapped market is very huge and that's why NPCI has started the implementation of Unified Pay-

ment Interface. This will ultimately lead to reduction in usage of cash /cheque for transactions.

Is PNB mulling adapting technologies, such as biometrics, to authenticate users' identity?

PNB is already using biometric devices in branches for users' authentication for the Core Banking Solutions. We are also evaluating options for extending the reach of the eKYC requirements to the doorstep of prospect / customer through suitable biometric solutions. For this, the mobile devices used by the prospect / customer also need to be biometric enabled. PNB is using Aadhar-based eKYC services and further integration with e-Sign, to be utilised from the customer locations for providing various services.

What kind of security mechanism is required to make mobile banking applications foolproof?

Security policy for end-point devices, device binding, mobile device management, password controls, log on procedures, anti-malware protection, Risk Based Adaptive Authentication Systems with OTPs are some of the security mechanisms to make mobile banking applications relatively foolproof.

> " Technology adoption in the Indian financial institutions is evolving and with latest concepts like block-chain already on the Indian tech horizon, the technology implementation is set take a leap

Please share your thoughts on the Unified Payment Interface (UPI)? Can it address the security concerns linked to payments and banking m-applications?

The UPI is going to be the game changer and may change the landscape for remittance and payment facilities. The unified payment service will open up the frontiers to the customer to use different channels of different banks and will help in moving towards a cashless society.UPI would be a transformational product and further the cause for building a society, which is 'less-cash' and more 'digital' in nature.

Further, there will be premium services and consolidation among the service providers and withering out of inefficient service providers.

The fact that users need not share their account-related details at any stage and all transactions are based only on the Virtual ID concept, makes this a much safer system from the customer point of view. However, there will still be a need for strong and resilient re-conciliation and fraud prevention systems besides customer support. ∎

Hybrid Technology
Works Best for ICICI Pru

The convergence of social media, mobile banking and cloud creates various opportunities for the BFSI sector, but it also throws up several challenges. **Lalit Popli, Head** – IT, ICICI Prudential Asset Management Company, tells **Poulami Chakraborty** of **Elets News Netwrok (ENN)** that his company handles the challenges with a combination of in-house developed and time-tested technologies

What role does a CTO play towards business development of a financial institution?

Technology is an important pillar in today's business model. Also, technology is an integral part of an organisation and binds it together to meet its objectives. So, a CTO's role in an organisation is very important, and to some extent, in all its initiatives.

How do you see tech implementation in the Indian financial institutions?

In my opinion, the Indian financial institutions are at the forefront in technology implementation. Of course, the distinction that needs to be made is that the Indian financial institutions are not enamoured by the technology just for the heck of it, but they implement technology that would have an impact on their business goals. Hence, mostly institutions implement mature technology, as the CTO keeps an eye on the emerging trends in technology landscape.

What technologies have been adopted for internal operations within your institution?

We are using a hybrid technology for our internal operations: on one hand, we have internally developed application and on the other, we have time-tested products. The objective is to have best of the breed technology solutions for our operations.

What kind of challenges does the convergence of social media, mobile banking and cloud pose for the banking sector?

We are living in exciting times. The technology convergence of social media, mobile banking and cloud throws up challenges but has also created many opportunities. The biggest challenge in my opinion is to strike a balance between convenience and security, be it transaction security or information security. Balancing of these two aspects is very important.

How are you addressing these challenges?

As a financial institution, security is of biggest concern and our investors and customers understand it. We, therefore, implement technology that balances security and convenience, and educate those investors who look for only one parameter...and it has worked for us.

Many payment applications are emerging. Is it posing a greater threat to mobile-based transactions?

Innovation is an important outcome on account of convergence of technologies, and various payment applications are an outcome of the same. These innovations change the established practices and as a result, a new practice comes in place. As an industry, we have to keep aligned to the same and adopt the new process much faster.

Is ICICI Prudential exploring technologies such as biometrics to authenticate users' identity?

We have already started using biometrics and other new technologies for authentication. We were the first AMC to have implemented Aadhaar-based biometric KYC for our new customers. So, whenever we find new technologies, which address security aspects and would benefit our users, we are ready to implement.

What kind of security mechanism is required to make mobile banking applications foolproof?

In my opinion, you can make applications safer and build alternative processes to ensure that right transaction is being done by the right person. Due to dynamic nature of growth of technology, the concept of foolproof itself will keep changing.

What is your view on the Unified Payment Interface (UPI)?

UPI from the National Payment Corporation of India (NPCI) is a fantastic innovation that is now getting implemented in the financial transaction space in India. I believe that all known security concerns has been addressed by NPCI and this product will provide lot of convenience to the customers. How much of a "Game Changer" it will be, only time will tell. ■

A Banker Who Stands Tall
AMONG EQUALS

Going from strength to strength, **S S Bhat,** Chief General Manager, Canara Bank, has held several strategic positions and today he is a well-known name in the Indian banking circles. He is viewed by many as a tech-savvy, seasoned banker, having the right attitude and administrative skills

While taking up the job of an Agricultural Extension Officer in 1980 as a fresh post graduate, S S Bhat had little idea that he would be heading one of the leading banks with over Rs.8 lakh-crore business as its Chief General Manager (CGM) one day.

With his sheer determination, leadership qualities and a never-say-die attitude, Bhat went on to become the CGM of the public sector lender, Canara Bank.

Going from strength to strength, he has held strategic positions in the Bank, and today he is a well-known name in the Indian banking circles. Many view him as a tech-savvy, seasoned banker, motivator, mentor, a go-getter, while other see a multi-talented visionary in him.

Even when the banking industry at large is posting a muted performance, Bhat has ensured a consistent 25 per cent growth under Agriculture portfolio since taking over the reins of Priority Credit four years ago.

Smashing all the corporate goals, Statement of Intent (SoI) targets and key performance indicators as set by the Government, Bhat is today regarded as an undisputed leader by many in the banking industry. The bank reposed confidence in his abilities for taking up challenging responsibilities one after another, and a spirited Bhatt never disappointed.

It all started when he was heading Financial Inclusion Wing of Canara Bank. Considering his administrative skills, knowledge and expertise, the Bank found him suitable to head the

S S BHAT, Chief General Manager, Canara Bank

coveted Priority Credit Wing and merged the Finance Inclusion vertical with it.

While he successfully led the huge department, Regional Rural Banks and Lead Bank wings were also merged with the Priority Credit Wing, and he continued leading from the front. Today, he heads as many as seven verticals of the Bank. Recognising his contribution, he was made CGM of the Bank through an out-of-turn promotion.

Though launching of Pradhan Mantri Jan-Dhan Yojana (PMJDY) within a short period of time was a tough task, Bhat managed to instill confidence in the zonal heads to the lowest rung of the staff members and travelled to various centers to motivate the workforce. The result was a thundering performance on the very day of launch, which earned applauds

from the Ministry of Finance.

A career banker, Bhat believes in motivating fellow colleagues and doesn't miss any chance to meet youngsters for giving them a pep talk, be it a regular training, a review meeting or a seminar.

Recognitions from the Government and the Industry also followed on the back of the incredible performance posted and expertise he displayed.

Bhat was invited to present a design for the Pradhan Mantri Fasal Bima Yojana by the Ministry of Agriculture. He is also member of various committees of the Government of India, RBI, NABARD and IBA.

Bhat has received the Aryabhata International Award for his outstanding achievements in the field of banking.

Today, Canara Bank can boast of having highest number of Financial Literacy Centers pan India, with over 31 lakh people imparted financial literacy.

"Today, there are innumerable products in the market, taking care of the supply side. But the demand from the hitherto unbanked households is too low. Only financial literacy measures can help in creating demand for the products," he says.

"Primarily, the literacy initiatives should make the people aware of the products and their rights," said Bhat, who enjoys the credit of having conducting over 53,000 camps pan India, during the rollout of PMJDY and providing financial literacy to over 2 lakh children in schools adopted by the Bank.■

MOBILE FIRST
M-Banking Outsmarts
I-Banking at Kotak

At Kotak Mahindra Bank, the employees don't just use mobile banking, but also assist and encourage customers to use the same, says **Deepak M Sharma**, Chief Digital Officer, Kotak Mahindra Bank, in an exclusive interview with **Sandeep Datta** of **Elets News Network (ENN)**. "We keep listening to our customers through ratings, feedbacks and app analytics, which help us make changes and enhancements in our existing services," Sharma adds

What's your view about the Indian banking system adopting Mobile Banking at a rapid pace?

Unlike in developed markets, where customers graduated from desktop to laptop and then to mobile, India is mobile-first country. With rapid growth of mobile handsets and data, mobile is shaping everything around us – be it music, travel, shopping or banking. This has also helped banks bring about 24X7 transaction experience to their customers.

Mobile has helped redefine banking as "not a place where you go but what you do". It has also provided consumers greater control and flexibility of managing their banking needs. By offering transaction convenience on mobile, banks have seen higher customer engagement, stickiness and product holding ratio. Mobile has also helped banks become more innovative in offering new and customised solutions, like booking flight, hotel reservation, recharge and bill payment, through mobile.

Do you think Mobile Banking is actually taking banks to customers in line with the Centre's endeavour to stimulate rapid transformation in the country?

Undoubtedly, customers can now compare, select and reach banks much easily than before. The government's push and ecosystems of IMPS, UPI, Aadhaar, Jan-Dhan Yojana, Bharat Billpay (an integrated bill payment system offering interoperable and accessible bill payment service to customers through a network of agents, enabling multiple payment modes, and providing instant confirmation of payment) are also creating more use cases for mobile banking. Banks are using the Trinity of JAM (Jan-Dhan+Aadhaar+Mobile) to bring digital and social identity through mobility, thereby offering all banking and payment services on mobile.

Is it true that Kotak Mahindra Bank has witnessed customer logins through mobile outstripping those doing it via Internet?

Yes, but that's an old story for us now, as that happened last May. As we speak, mobile banking login numbers have more than doubled the Internet banking logins! This has happened due to our Mobile-first approach, zero-base design, reduce frictions to ensure easy on-boarding among many other things.

Can you share some statistics on how useful mobile transactions are proving for your bank vis-à-vis other modes of banking transactions?

Today, more than 90 per cent of our retail transactions occur outside the branch. As I've shared, Mobile Banking login instances are already double the Internet Banking logins. 46 per cent of our Mobile Banking customers are only on mobile (they don't use Internet banking). That means mobile banking is helping us engage with more number of customers. It is also helping us in customer retention, risk mitigation, increasing share of wallet, fee-based income and cross-selling opportunities.

Products like IMPS, recharge, mStore are already showing much higher volumes and value on Mobile Banking than Internet Banking.

How banks like Kotak Mahindra are encouraging more customers to embrace Mobile Banking? How many of your customers are already using it?

It required a framework approach. On a regular basis we keep adding more features across customer segment apart from improving the front-end and back-end experience. Our employees not just use mobile banking regularly but also assist customers in embracing mobile banking. We keep listening to our customers through rating, feedback and in app analytics. These insights help us build future changes and enhancements. As we speak, we have highest rated banking app (4.4) in the industry. Superior and rich experience helps us drive higher adoption.

We constantly try to understand the barriers faced by customer in adopting the mobile banking and plan to address

> "Mobile has helped redefine banking as 'not a place where you go but what you do'." It has also provided consumers greater control and flexibility of managing their banking needs

them. Based on such insights, last year we launched India's first multilingual offline banking app "Kotak Banking". Around one third of our bank's active customers are using Mobile Banking.

Do you think Mobile Banking has actually come of age in India?

I think it's a journey. While Mobile Banking is leapfrogging, there is long way ahead. We need to ensure there are more use cases built for every customer's every banking need.

With mobile banking technology rapidly being embraced by Indian customers, what kind of challenges remains unaddressed?

There are continuous challenges around customer education, perceived security concerns, customers comfort with new technologies, etc. The ecosystem is changing very fast and most of the new disruptions are around mobile device. Mobile Banking will need to keep up the pace with that. Creating ecosystem to deliver end to end superior experience will be the key to success in future. ∎

Technology Guards
CUSTOMER INTERESTS

With the rise in technology adoption by financial institutions, the role of CTO has increased manifold as the selection of right technology even by smaller institutions can give the larger establishments a run for their money, says **K G Subramaniam**, Director- Technology, Barclay's Bank, in an interaction with **Poulami Chakraborty** of **Elets News Network (ENN)**

So, in addition to ensuring the best technology for the firm, if the CTO is able to leverage recent developments and create technical options for both existing businesses as well as for new businesses, it will help fulfil a critical mandate of that role.

In particular, the CTO would need to partner with the business development in incubating new businesses for the firm that exploits technology breakthroughs, giving an invaluable head-start and thus mitigating the risk of being left behind.

How do you look upon the tech implementation among Indian financial institutions?

Besides addressing key user functionality, the technology implementations in general can be defined by its ability to scale, support inter-operability, resilience and reliability, accessibility as well as its security and controls – to cite a few critical parameters.

Against that, the tech implementations in most of the Indian financial institutions tend to fall short in one or more of these parameters and thus constraining its agility and ability in delivering a secure technology, easily accessible to the firm's end customer.

In terms of processes as well, the tech implementations have largely followed the SDLC life cycle vis-à-vis the agile processes that could be more relevant in the current context.

What Technology has been adopted for internal operations within your institution?

For our internal operations, depending on the need and keeping in with the developments, we have adopted a mix of home-grown and vendor-based software. In addition, we do leverage on fintech and hackathons to try and achieve breakthroughs, which would help work around constraints created by legacy technology, till its strategic replacement is in place.

What role does a CTO play in business development of a financial institution?

The role of CTO has never been as critical and powerful as it is today in shaping the destiny of the institution. Today's disruptive landscape presents a great opportunity even for a small institution with the right technology to compete and achieve scale at par with the Goliaths of the sector and that too, very quickly. In that sense, a CTO of a larger institution carries even a bigger challenge to help the firm protect its market share and grow as well.

What kind of challenges does the convergence of social media, mobile banking and cloud pose for banking sector? How are you addressing those challenges?

The convergence of social media, mobile banking and cloud have brought about a paradigm shift in the delivery of financial services, but they also bring challenges relating to data privacy and regulatory adherence – key being the user credentials, availability, interoperability and security issues. To address these challenges and ensure a seamless user experience for the end customer, amongst others, we focus on the following:

- Appropriate choice of platform for customer data
- Implementing mobile security container solutions (to prevent it from being run on jail-broken/rooted devices) and publishing the app in trusted app store
- Data encryption/tokenisation as required and local encryption of data-at-rest
- Full due diligence of social media integration, and
- Continuous surveillance and adequate security governance (such as appropriate security clauses in contract, regular audit and vulnerability management).

Are the new payment applications being launched posing a threat to mobile-based transactions? Is there any regulation for non-banking payment mobile applications?

It is true that many payment applications are being launched in the market, and they do bring new data protection challenges due to the evolving payment models and processes, which need to be addressed on their merit. The threat increases due to pervasiveness and ease of mobile-based transactions, and so a risk-based decision may be explored to introduce lower transaction limits depending on the channel, to manage the exposure.

The relevant regulations for the payment mobile applications would be the Prepaid Instrument (PPI) Licensing guidelines from the RBI under the Payments and Settlements System Act (PSS Act 2007) as well as the PSS Regulations, 2008.

Is Barclays exploring technologies such as biometric to authenticate users' identity? What are the present ways adopted to authenticate users?

Barclays continuously evaluates emerging technologies such as the biometric to authenticate users' identity, as these have been permitted by local regulations as well. Leveraging on those benefits the bank as well as the customer.

What kind of security mechanism is required to make mobile banking applications foolproof?

Without doubt, a mobile banking offering comes with a challenge of playing a fine balance between innovation and risk even while customers implicitly trust the banks to safeguard their information. So, from a security viewpoint, effective design and implementation plays a key role – how to securely create and store the user credentials, strong user authentication controls, application code security and data security.

This would include protection of data at rest and in transit using encryption to secure data within the app sandbox and also encrypting individual data elements as needed for the data transfer.

Added to that, a risk-based approach to functionality offering in the device, the ability to gauge the security of the underlying device, having remote wipe capabilities, real-time fraud detection and AML capabilities would definitely enhance the controls. Also, keeping a watch for fake bank apps in the App Store resembling the firm's app is also a must as limited user awareness can be exploited by seasoned threat actors.

What are your thoughts on unified payment interface? Can it address the security concerns linked to payment and banking applications?

Out of the key benefits that the NPCI's Unified Payment

> Barclays continuously evaluates emerging technologies such as the biometric to authenticate users' identity... Leveraging on these benefits both the bank as well as the customer

Interface (UPI) seeks to bring, I would point out two – one for the end customers, who are individual payment senders and beneficiaries, and the other for the merchants, who have to receive payments from their customers.

For the end customers, the single-click two-factor authentication combining the innovative Virtual Address feature and the MPIN go a long way in keeping the payment ecosystem simple and secure while accomplishing instant payments. The personal data (credit card and debit card etc) sharing is done away with.

The other key benefit is the easy debit capability provided by this platform through the Pull functionality, which enables the merchants to initiate collections from their customers, which is instantaneous and at low cost.

Given its inherent strong end-to-end security framework offering data protection, the UPI interface is indeed better positioned to address the security concerns linked to the payment and mobile banking applications. ∎

Handling the technology part of a business setup, a CTO can contribute enormously to the business transformation, new services or products, as everything requires technology, observes **Milind Varerkar**, General Manager-IT, Saraswat Bank, in an interview with **Poulami Chakraborty** of **Elets News Network (ENN)**

Urban Coop Banks Catching Up in Tech
IMPLEMENTATION

How does a CTO play the role of a business facilitator for a financial institution?

CTO is a natural ally to the business units for taking up digital banking initiatives. The role of CTO requires the person to ensure seamless availability of technical resources and ensure a strong security. Being in technology domain, a CTO can contribute enormously to the business transformation, new services or products as everything requires technology. Even in projects such as Business Analytics, the CTO can be of crucial help to deliver the right technology and framework.

How do you view tech implementation by the Indian financial institutions?

The Indian The banking sector has made great strides in tech adoption. Although private sector banks lead initially, now public sector banks (PSB) and urban cooperative banks (UCBs), like Saraswat Bank, are also not far behind. With Aadhaar and PAN, the KYC has already become online and eKYC is the norm today

for account opening. With RBI issuing licences to payment banks, these banks are expected to be born with technology in their DNA. The initiatives of NPCI, viz. Unified Payment Interface (UPI) and BBPS would be game changer for the payment services.

What technology has been adopted for internal operations within your institution?

We have identified Lead management, Loan Origination and Account opening for automation. Lead Management is already automated and braches have experienced surge in leads through such process. We have launched "Saraswat Bank Connect" app, through which any one make enquiries for any product of the Bank and the lead is directed to the portal, which is accessed by branches directly. We are in the process to implement Loan Origination System with which the loan sanctioning and disbursement will be automated bringing down the turnaround time. We are also going live with account opening process based on eKYC.

What kind of challenges does the convergence of social media, mobile banking and cloud pose for the banking sector?

With social media, mobile and cloud, I would also include Analytics to make it SMAC. In fact, it has presented banking sector with an opportunity rather than challenges. Challenges remain in serving the customers for their specific needs. Be it in money transfer, bill payment or other banking services. The customer expects to be served on any medium of her choice and that too at a time convenient to her. Hence for banks it is necessary to ensure that the technology works 24x7 without any interruption. Opportunities are in observing customer behaviour online or through mobile and use analytics and cloud to keep engaging with the customer with personalised offers.

How are you addressing those challenges?

We, at Saraswat Bank, have prepared Digital Strategy for both short term (one year) and long term (three years). The IT and Business divisions are working in tandem on this. The initiatives discussed above are part of this strategy. These are identified as quick wins.

New payment applications are coming up every day. Is it posing a threat to mobile-based transactions?

The non-banking mobile payment is not a regulated field. With UPI, the banks will be providing a secure channel to the customers to transact and with BBPS even the payment services aggregators also will be part of the payment eco system.

Can you cite a specific case of security lapse and how Saraswat Bank addressed it?

Till date we haven't encountered any major security lapse. We regularly alert our customers not to share their Debit card PIN and Net Banking credentials. On every POS and e-commerce transaction, a SMS and email is sent to customers to alert them and they can block the card for further damage instantly by giving a missed call.

Is Saraswat Bank exploring technologies, such as biometrics, to authenticate users' identity? What are the present ways adopted to authenticate users?

Currently we are using 2FA to authenticate users on delivery channels. We evaluate products to use biometrics for all delivery channels and internal users as well.

What kind of security mechanism is required to make mobile banking applications foolproof?

The application should be CODE signed to ensure source authentication and should have OWASP top 10 framework. Place the App for download on play stores only rather than

> The banking sector has made great strides in tech adoption. Although private sector banks lead initially, now PSBs and urban cooperative banks, like Saraswat Bank, are also not far behind

open platforms or websites. Ensure that PIN authentication is done on HSM. Conduct VAPT for every release.

Please share your thoughts on UPI. Can it address the security concerns liked to payment and banking m-applications?

UPI is a channel that gives freedom to customer to aggregate multiple bank accounts into a single mobile application of any bank, merging several banking features, seamless fund transfers and merchant payments under one umbrella. Dependence on mobile wallets will go and so will the concern of storing money with bank account details or cards in open wallets.

Using UPI, customers can make or 'collect' payments by creating a unique virtual address similar to their existing email addresses, thereby eliminating the need to share bank account numbers. This gives a new level of security and interoperability. This will also help realise the government's agenda of "Less Cash Society", as not only money transfers but merchant payments will also be routed through UPI. RBI in its Payment System Vision Document (2012-2015) had mentioned the use of UPI for achieving its goal of a "Less Cash Society". ∎

CIOs Take Banks Up
VIA TECHNOLOGY
LADDER

With fast adoption of technology in the banking sector, the role of technology officers is becoming a challenging one in terms of right selection of technologies to suit both the banks and the customers, says **Anup Purohit**, Chief Information Officer, Yes Bank. Besides, CIOs/CTOs also need to be on the alert round-the-clock to ensure that their institutions don't lag behind others, technologically, Purohit tells **Harshal Desai** of **Elets News Network (ENN)**

What is the role of A CIO in a typical modern banking system?
Nowadays, the role of a Chief Information Officer (CIO) is quite diverse. They have to get the best of the technologies and, at the same time, understand the business very well, and then marry them together in a manner that finally adds value for the customers. By doing so, they ensure positive results, which benefit both the end-users as well as the businesses.

It is indeed a demanding and challenging role. We – as CIOs or CTOs – always sit in a hot chair and have to be always alert 24/7 and ensure that we – if not ahead of the trends - at least don't lag behind in our business.

How do you rate the implementation process of advanced technologies in Indian financial institutions?

If you compare the technologies in India with the technologies which are being implemented in western countries, you can definitely observe that we are coming at par with them fast. Be it Blockchain Technology, usage of Internet of Things (IoT), Robotics or a Service-oriented Architecture (SOA). It is taking a little time, bu–t we can't say we are not developing. The skill sets and technology is available in abundance in Indian market. IoT is one of the mechanisms which are yet to be adopted on a larger scale within the banking sector; however, Blockchain Technology, Watson and other cognitive technologies have gained lot of prominence in the last few years. There is a huge scope for these technologies.

Is the use of too many technologies adding to the complexities?

There are hundreds of technologies which we use to streamline our operations across various functions. It is a fact that too many technologies add to the complexities, but that is the challenge that we as CIOs or CTOs face. We have to maintain a balance while selecting best of the breed technologies and getting too many technologies.

Will you please talk about a few initiatives undertaken by Yes Bank in this context?

We are taking several initiatives to automate the internal business processes. Yes Bank is the first to launch an API Banking platform in India. For business process as ubiquitous as the funds transfer process between two different entities and across multiple systems, API provides a secure layer to provide reliable access to banking systems and business processes. Yes Bank has successfully implemented API Banking solution across leading e-commerce, logistics, brokerage and other BFSI platforms. We have moved onto the SOA architecture to make our process pretty agile. Adopting newer technologies might be a challenge, but if you have the right mix of skill sets, you can certainly get the best out of it.

Is the launch of wallets by various financial institutions a threat to the Bankers?

The industry is quite big and there are several opportunities for different players to co-exist. I do not think wallets are a threat to the banking sector; in fact they can never be, as they will have to depend on banks.

What are your thoughts on the Unified Payments Interface (UPI) developed by the National Payments Corporation of India (NPCI)?

Unified payment system is a revolution in the modern payment mechanism. It has to be made secure. All the banks along with NPCI contribute their best efforts to secure the entire system. I believe we will keep evolving in terms of security measures for such processes. With such universal payment interface, the significance of wallets is going to diminish. Yes Bank has recently deployed our SafeNet Network HSM to secure mobile payment transactions for millions of our customers under Unified Payments Interface (UPI).

How crucial is the challenge of cyber attacks and data breaches? How do you address security threats within Yes Bank?

The more digital we go, the more such challenge we face. Websites, mobile apps and other internet facing systems are prone to cyber attacks. We need to be cautious and prepared to respond to these attacks. Preventing measures also need to be strong. A huge amount of effort and focus from all the regulators is required.

We need to ensure that there are minimal gateways in the bank and these are checked and controlled effectively. Once these gateways are taken care of, security will be strengthened immensely. At Yes Bank, we have ensured that there are only two entry and exit points – in DC and DR. We have controlled end-user points with controlled access – there is no CD Drive and USB access to the users. We have put in the data leakage prevention software. Besides, Advanced Persistent Threat (APT) solu-

> "Yes Bank is the first to launch an API Banking platform in India. We have successfully implemented API Banking solution across leading e-commerce, logistics, brokerage and other BFSI platforms

tions, multiple firewalls, sandwich firewall mechanism, data power for ensuring secure flow of information, etc., are some of the other devices we have implemented within the Bank. So we have put in the solutions to secure entire enterprise security architecture in place. Further, we have crisis management team which is in regular touch with regulators and Indian Computer Emergency Response Team (CERT-In). We exchange data with them for security purpose and manage the entire operations pretty well. We are very well geared to manage cyber attacks.

What is that 'one unique thing' about Yes Bank?

We focus majorly on winning mindshare of customers. We focus on knowledge banking. We do lots of research on different domains and offer customised solutions to our customers. We want to occupy large amount of space in our customers' mind, so that they approach us for all their banking needs. We strongly believe in mindshare. ∎

Deflating the Sinister
DESIGNS OF FRAUDSTERS

Experian runs the largest application fraud detection system in the country, with over 50 per cent of retail banking applications screened for potential risks and frauds every month, says **Mohan Jayaraman**, Managing Director, Experian India, in conversation with **Arpit Gupta** of **Elets News Network (ENN)**

Experian India offers fraud detection solutions for the BFSI sector. Can you elaborate the role of these products in the sector?

Financial service providers are constantly facing rising fraud incidents, or fraudulent applications. At Experian, the strategy is to prevent fraud at the point of application. It requires authentication of genuine customers and detection of potentially fraudulent applications before the customer is accepted, without adversely affecting the customer service and speed of decision making. With 'HunterTM', a premium fraud detection technology, we screen and highlight potentially fraudulent applications and enable organisations to identify fraudsters before they become their customers.

Experian India plays an active role in fraud detection via the Experian Fraud Bureau – a closed user group of industry members (47 banks and 17 life insurance companies). We run the largest application fraud detection system in India, with over 50 per cent of retail banking applications screened for potential risks and frauds. The system has been able to save an estimated Rs.4,002 crore in FY16 by preventing frauds at the credit application level.

Our 'Hunter Fraud Score' measures the probability of fraud in a credit application. With this, the offering businesses will be able to prioritise applications with a high probability of being fraudulent. It helps clients lower their losses substantially by working on minimum per cent of the population.

Our latest offering for India is 'CrossScore', an innovative new platform for fraud and identity services and the industry's first smart plug-and-play platform that allows companies to connect their own solutions with Experian products and third-party vendors in one place to protect their customers from fraud threats better. The CrossCore's open platform enables organisations to manage services via a common access point that

supports a layered approach to manage risks across providers.

How does Experian help businesses manage credit risk, prevent fraud, target marketing offers and automate decision-making?

Experian India provides data and analytical tools to clients globally. Data is a critical and strategic tool powering our business. We've spent over 30 years refining our expertise in interpreting data, be it a credit bureau or a client's customer data, and leveraging it to create more valuable and profitable customer relationships for clients. This expertise in data analytics helps us offer our clients an innovative range of products and solutions; to manage credit risk, prevent frauds, target marketing offers and automate decision making.

We provide products to help customers in underwriting their consumers when on-boarding, ongoing management, for example, portfolio benchmarking, account review, triggers, etc.

We have launched 'FraudNet', a solution for online fraud detection. Experian India also offers a decisioning solution for a flexible and intuitive graphical-user environment. It can be used to create and administrate winning business management strategies.

We also offer a range of decision tools and products designed to raise precision, speed and agility of decision management process, so that users can respond rapidly and cost-effectively to market changes. For example, 'PowerCurve' is a unified platform for strategy design and execution, which connects the analytics and operational environments for all customer decisions. This allows development and implementation of the customer management strategies.

With the advancement of technology, risk management in BFSI seems crucial. How does Experian India view it?

Protecting one's business from fraudulent activity, while also managing credit risk, has posed challenges for many organisations. As more consumers access and apply for financial products across multiple channels, including online and mobile, fraud also continues to evolve, increasing relevance of risk management in BFSI industry. It's a trend that's being underpinned by a combination of ID theft and false identities, and organised gangs are carefully developing fraud networks and account takeovers when a fraudster steals data to hijack an account. The financial services sector is fighting back with innovative methods.

India has already started to build on this framework by learning from developed countries. The policies and structures set up by the RBI have been progressive and ahead of the curve. One of the best examples is the two-step

verification set up for card transactions, causing reduced frauds arising from cards. However, given the frequency and number of channels used by customers, forming an industry consortium on fraud/ risk management is required. We are working on it.

What are your plans for the near future?

We constantly innovate and work with clients, helping them solve business challenges and help clients with insights from vast data, enabling them manage their customers across the lifecycle, besides a strong focus on Fraud and Identity management solutions, and we are looking to have value-added services in this space.

What is Experian's Fraud Report 2016 about?

It's an annual feature for Experian, globally. This report, launched earlier this year, analyses various types of loan

> Experian India plays an active role in (financial) fraud detection... We saved an estimated Rs.4,002 crore in FY16 by preventing frauds at the credit application level

account frauds observed in the Indian financial sector from Q1 2014 to Q1 2015 and classifies them into four categories – incidences arising from fraudulent contact information, fraudulent organisations, identity theft or fictitious identity and repeated attempts from already identified individuals. Of these, Identity Theft causes maximum fraud cases.

Frauds through financial products within the retail and commercial sector have also seen an uptake. Consumer loans continue to have the highest fraud incidence rate. The number of fraudulent cases for these loans has increased annually from 219 frauds detected per 10,000 cases in Q1 2014 to 265 cases per 10,000 in Q1 2015. Credit cards are the second-most targeted product by fraudsters after consumer loans. ∎

Role of CTO
GOES UNDER TRANSFORMATION

With the onslaught of technology from all directions, the role of Chief Technology Officer in business establishments is changing from that of a technical expert to driver of the business, says **Sameer Jaini**, Chief Technology Officer, DCB Bank, in an interaction with **Poulami Chakraborty** of **Elets News Network (ENN)**

What role does a CTO play for the business development of a financial institution?

Previously, the primary role of a business person was to keep the business going, backed with the necessary technical support. However, in the last few years, technology has driven businesses differently and the role that a Chief Technology Officer plays for business development has changed substantially. Hence, accordingly, a CTO has moved on from a support role to a partnership role, thus making our role more prominent for partnering the business.

For example, we have a product called 'Zippy', which is an online transaction product for Fixed Deposits (FD), which has been brought into being by us (the Technology Department) and the Business Development Department. Again, while working on the UPI platform, we have together managed to reach out to the masses, as it is half technology driven and half business oriented. Thus, there will rarely be a situation where we will be confined only in technology-driven role, and will focus primarily on partnership roles. For example, if we are now partnering with a fin-tech company, it will be primarily a technology-driven, more than anything else.

Therefore, any technology that we innovate as a financial institution to tap the market is

first taken care of by the business development team and then the tech-innovation team, who work closely to strategise how to market that specific product to the targeted customers.

There's been increasing adoption of technology in the BFSI Sector in the past few years. Being a tech expert to a financial institution, how do you perceive the rise in tech adaptation in the sector?

From a tech expert's perspective, technology is about simplifying and modifying a process, enhancing customer's experience and improving employee experience too. Almost every new innovation taking place in the banking industry will get automated and simplified, like mobility, in the banking industry. When a user is on mobile, he expects immediate response, even though it's a case of opening an account in a particular bank. Thus, at the back-end, the financial institution has to create an experience for their users which ensures their customer of immediate response and solution, rather than lengthy process of document scrutiny, etc. Similarly, these days, people prefer using IMPS option over RTGS, focusing on a solution given right now rather than four hours later.

Gradually, the trend shows a shift towards 'Zero', meaning to ensure zero-cost of operations, zero-time involved for a transaction, etc. Incidentally, for any transaction or any project, we believe the more time taken is the more cost involved in its completion. Similarly, employees are also looking for automation to simplify their tasks. For example, if an employee has to login to seven different applications to complete a task, it becomes confusing for him, hence we gave them a single login to perform seamlessly.

Thus, IT at some places is stepping into the business role, helping to run it better, while at some other places, it is helping in automating operations and improving compliance.

What technology has been adopted in the DCB Bank ecosystem to make life simpler for its employees as well as customers?

From the customer's perspective, we have deployed Android and iOS-compatible application, which is used by many customers these days. Our internet banking is an omnipresent platform. The same will be compatible for use both in handsets and computers easily. If we look purely from an employee perspective, we have just launched a platform called 'Fundoo', which is a platform for collaboration of customers and employees on the social platform. For example, employees can Wiki information there, make collaborations and do similar other value additions. Although, we have launched this recently, we see that it's yielding great results in terms of people collaborating faster and executing transactions faster as well.

Incidentally, we are the first financial institution in the country to use Aadhaar-based ATMs, which again from a customer's perspective offers immense convenience, wherein he does not need to reveal any of his banking details to transact and can easily authenticate it with his Aadhaar card. We are also in the process of exploring iris scanning ATMs, where a customer will be authenticated with his iris scan and will easily be able to transact through them.

> "Any technology that we innovate to tap the market is first taken care of by the business development team and then the tech-innovation team, who work closely to strategise how to market that product

Do you foresee any challenges posed by the convergence of social media, cloud and mobile banking to the BFSI Sector as a whole?

Instead of posing challenges, the convergence of the three technologies in banking has opened up faster and cheaper methods to reach out to prospective customers than any other tools ever used for client servicing in BFSI sector. Almost all financial institutions have moved on to virtualisation through clouds, where they run their own cloud systems, without having any impact on data confidentiality. All these have been helping us in being more efficient than before, rather than posing any severe threats. Mobility is helping us big time. For example, recently we have launched a technology wherein we can track a person's leads and sales generated, and instant updates about his work done on a daily basis is instantly being monitored by his immediate reporting boss, customer's preference pattern, etc. ■

MONEY CHANGERS
Transforming the Way Money Travels

Over the last 25 years, Financial Software & Systems (FSS) has not only automated the cash movement but also emerged as an end-to-end payments technology player, providing banks and financial institutions (FIs) with disruptive payments technologies, says **Nagaraj Mylandla**, Chairman & Managing Director, FSS, in an interaction with **Nirmal Anshu Ranjan** of **Elets News Network (ENN)**

FSS was launched much before many could think of the future of money. How was the idea conceived, and what went into its formation?

I was exposed to payments technology in the late 80s while doing my MBA at the University of Nebraska, Omaha. There I realised the huge potential India had for automating cash withdrawals 24x7 and giving customers access to accounts without human tellers.

The journey of FSS began by providing the banks with BASE 24, the specialised Switching equipment for cards from ACI Worldwide. Starting from there, over the next 25 years, FSS has not only achieved automating the cash movement but also emerged as an end-to-end payments technology player, providing banks and financial institutions with disruptive payments technologies.

We have a team of 2000+ experts serving 100+ customers across the globe today, which include public and private sector banks in India and some of the large banks, FIs, processors and card issuers, who are spread across North America, UK/Europe, Middle-east, Africa and APAC regions. Specifically, in the middle-eastern region, FSS is emerging as a significant player partnering with banks and central banks to provide them with Reconciliation and Settlement and Payment Gateway solutions.

Which are the major business segments or the nature of companies you cater to?

We are a 100 per cent payments technology company and manage the entire lifecycle of payments from origination to transaction fulfilment that includes issuing to acquiring, back office and monitoring solutions, ATMs and POS infrastructure management and digital payments, including mobility and social banking needs.

Apart from Retail payments, where we have a clear leadership in India, we have also created a division for Wholesale Payments. This division has already implemented end-to-end Integrated Payments Hub for one of the large public sector banks in India, and we see a huge potential for Wholesale Payments in the near future.

Our solutions are delivered in Licenced (FSS IP-based Software Products) and Hosted Services (pay per use offering) models, a concept that we pioneered in the 1990s, when Cloud was a hitherto unknown concept globally!

We cater to all major banks, financial institutions, payment processors, merchants, e-commerce providers, aggregators, government and regulatory bodies in India and across the globe.

In this highly crowded payments solution market, why should a business opt for FSS? What do you think is your USP?

FSS is a thought leader and transformation player. Our innovative offerings are a result of our in-depth knowledge of the payments domain, which is built over 25 years of experience of serving our Banking customers and addressing their complex needs.

We marry technology with the payment requirements in a safe and secure environment that helps Banks to provide seamless and superior service to their customers. Today, we are a large player covering the entire gamut of the payment spectrum, with a number of solutions that are offered in Licensed and Hosted Services models, based on our customers' requirements. Our ability to process large transaction volumes – 700 million reconciliation transactions per month, 400+ million cards issued through our Card Management Suite and the tested infrastructure that can support 5000+ TPS – makes us unique when compared to other players.

Our consistent and high quality delivery is top notch when compared to others and our ability to offer innovative solutions such as "Payments in a Box", "Business as a Service" and "Payments as a Service" to Banks is a key differentiator when compared to other players in the market.

What innovative offerings the company has for a digital India?

FSS has always been ahead of the payments technology curve and was the first to bring Internet Payment Gateway (2000), Mobile Banking (2006) and Mobile Payments (2008) technologies to the country.

Today, India spends more than Rs.90,000 crore in printing & moving cash. We aim to create payment technologies that will support banks to provide cashless transactions through multiple payment channels that are convenient to their customers. Going forward, Mobile will change the way we transact and pay, and FSS will be an integral part of this revolution.

Innovation is the order of the day and FSS has always been at the forefront of Payments Technology innovations. We have continuously and consistently invested in R&D and our dedicated teams experiment with new technologies to convert them into viable solutions to serve our customers.

Today, we have a number of innovative solutions that helps banks cater to the demands of their customers and we are currently working with banks and regulatory bodies to provide Digital Wallet, Unified Payment Interface (UPI) and Bharat Bill Payment Services (BBPS).

We also have a dedicated Super Merchant Program focused on Merchants that enables our partner banks to quickly integrate and offer value to their customers.

These Boutique Offerings provided on a Licenced and Hosted Services model have made us the preferred partner for banks on the Digital Payments side.

Financial Inclusion is a huge opportunity for payments solution providers. Are you in any way associated with the programme?

FSS is a pioneer in offering Financial Inclusion solutions to the banks and FI's in the country. Our offerings are designed to enable inclusive banking and financial services to the un-banked and under-banked sectors in the country. Today, more than 75 per cent of e-commerce transaction is cash and going forward, our focus is to convert these cash transactions into cashless payments.

Our comprehensive application suite supports online and offline transaction processing, with biometric authentication on ATM and handheld terminals. Today, we deploy more than 10,000 micro ATMs across rural India, especially our technology solutions support card issuance, hierarchical definition of business correspondents / agents, registration, accounting and management functions.

FSS liaises with the banks' technology team to interface FSS infrastructure with the bank's retail network and the core-banking host, for launching the FI services. The solution has been successfully implemented in leading banks in the country.

> "Apart from Retail payments, we have also created a division for Wholesale Payments... We cater to all major banks, FIs, payment processors, merchants, e-commerce providers, aggregators, government, etc.

We also support banks and FIs with card issuance for Pradhan Mantri Jan-Dhan Yojana through our Debit Card Management System and we touch every aspect of the Jan-Dhan, Aadhaar and Mobile (JAM) trinity through our digital offerings.

What are the challenges you face in day-to-day operations? Would you suggest any regulatory changes for smoother operations?

Cyber fraud is a big challenge today, threatening online payments, and many countries are working with payments technology players and other industry players to tackle this issue. We would like our government to initiate a dialogue with all stakeholders and work towards evolving a constructive strategy to address this major challenge. FSS works closely with regulators in the country and as a fintech player, we would like to play a constructive role in government's plans towards creating a cashless society. ∎

'Testing' for CUSTOMER DELIGHT

Madhav Bhadra, Director, AQM Software Testing Lab, shares his vision on taking AQM to new heights and the Government's ambitious initiatives, like Make in India and Digital India, during an interview with **Elets News Network (ENN)**. Bhadra also underlines how 'Testing' plays a critical role to ensure functional, efficient, secured and hassle-free systems. Excerpts:

Please share an overview of AQM. What kind of products the company is offering to its customers?

AQM is a Software Testing Lab with domain expertise of Banking Financial Services, Insurance (BFSI) and e-Governance segment. Testing is one of the critical IT governance and risk mitigation activities for ensuring functional, efficient, secured and hassle-free systems and thereby greater customer satisfaction. We offer solutions for testing of Core Systems, Channel Systems, Digital Initiatives, Mobility, Big Data initiatives, Cloud computing. Our vision is to create happiness for every stakeholder through testing. A functional, efficient, secured and hassle-free technology brings happiness for customers of banks and thereby for banks. We also help in automating testing activities and thereby ensuring better returns on investment for our customers. Our solutions help our customers in 'Faster Go to Market' with new products as well as for upgrades and changes in existing products which are inevitable in current competitive market scenario.

Are you catering to the banking and financial services sector? Please elaborate. What opportunities do you see in the banking, insurance and financial services domain?

We help banks and financial service sector in three ways: first, when IT systems are acquired; then, when systems are upgraded; and finally, when systems are constantly changed which are called BAU (Business As Usual) changes. We help banks and financial service providers in ensuring that when they go live with new systems or upgrades or BAU changes, their systems remain functional, efficient, safe and hassle-free. We see opportunities in the segment of mobile, analytics, customer facing technologies and cloud computing. Besides, Systems used by BFSI players are becoming seamless with the use of APIs. We specialise in API testing and help our customers to roll out defect free seamless systems.

What is your strategy to stay ahead of your competitors? What is the USP of your products

that gives them an edge over other products in the market?

Our domain focused approach in creating solutions for our customers helps in partnering with customers in solving their business problems instead of just another service provider. We have created reusable components through our research and expertise which takes our customers at higher maturity level from day one. We give our customers guaranteed SLAs that puts us also into a mandatory continuous innovation mode so as to generate the guaranteed value for our customers.

The Government is giving a lot of emphasis on Make in India, Stand Up India, Start Up India and Digital India initiatives to boost investment and creation of jobs. What is your view about such steps?

Brand India and private participation are the visible changes that the Government of India is pushing across sectors. Government's commitment to improve business environment and create jobs are visible. Make in India, Stand Up India, Start Up India and Digital India are infrastructures, that are parallel to express highways, for a digital economy. They will result into lots of technological innovations and jobs down the line.

How important is latest technology for the banking sector to improve customer services? What more needs to be done to revolutionise the BFSI sector?

We need to divide market into three segments to find an answer to this query.

Served Market: Served markets are those customers who have access to banking as well as right technology to optimally utilise the innovation in banking products and services. This segment is amidst of an innovation upheaval. New challengers in market (both new banks as well as non-bankers offering innovative products mounted on banking services) and old champions (existing banks) both are investing heavily into technology to gain increasing market of served ones. The speed, safety and ease of use are the winning factors and hence it is unthinkable to march forward without technology. Served market will soon see extensive use of artificial intelligence and robotic products which in turn will bring competitiveness, consistency and pro-activeness.

Underserved Market: Underserved markets are those customers who have partial access to technology and partial access to banking (Urban low value customers). The key to successfully serve this market is lower transaction cost, and that's exactly the technology will enable banks to achieve.

Unserved Market: Unserved markets are the rural interiors where customers neither have access to banking nor technology. This is purely investment market. Invest today and reap benefits tomorrow. Government is creating digital infrastructure for banking players to reach those customers and invest. Sometimes they do voluntarily as visionaries and sometimes they are forced to do it through policies. Technology can help in reducing the gestation period between investing in this market and returns from the

> AQM Software Testing Lab offer solutions for testing of Core Systems, Channel Systems, Mobility, Big Data initiatives, Cloud Computing. Our vision is to make every stakeholder happy through testing

market. However, the size of this market is so big in India in terms of potential customers that visionary players would reap the benefits soon. Technology would be enabler.

What is STQC approved testing for e-Governance solution testing? Please demystify.

Technology solutions under e-Governance plan of Government of India require testing of solutions while rolling out such solutions in production environment so as to ensure that e-governance solutions are qualitative, reliable, efficient, secured and meets quality standards. Before March 2014, STQC was the only agency which used to conduct such testing. AQM became first approved testing laboratory by STQC, DEITY, Government of India which is authorised to test and issue quality reports for e-Governance solutions.

Our e-Governance solution testing services can be consumed by government departments as well as solution providers. We provide end to end services for STQC testing and certification. ∎

ESDS GOES SKY-HIGH
on Patented Cloud, Managed Services

Piyush Somani, CEO, ESDS India, underlines USPs of his company like managed services, Patented Cloud platform and Managed Cloud services. Somani, in an interaction with **Poulami Chakraborty** of **Elets News Network (ENN),** syas ESDS hardly has any competitor in this space in India primarily because of the technology and quality of the managed services ESDS provides. Excerpts from an interview:

ESDS is primarily into solution providing for web-hosting. Kindly take us through the journey of ESDS in the Indian market.

ESDS started as a BPO company about 11 years ago. Later, we diversified and discontinued the BPO business and began our journey in the web-hosting business. In 2005, we acquired three other web-hosting companies, which gave us phenomenal growth. With whatever we accumulated in the past few years, we wanted to start with our own data-center in India. The foundation stone of this dream was first laid in 2008, when we started with the construction work of our own data-center in Nashik. While we continued to grow in UK we started to experience some challenges there. Even though our growth ratio doubled in a span of three months, our customers started facing problems in their virtualisation platform; which in those days was referred to as BPSO. During those days, humongous traffic in website made the platform slow. Our customers complained of the fact just when they have an important season going on for their business. To provide solution to our customers beyond our deliverables, we hired fresher computer engineers to provide scalable computer resources for resolving customers' problems. In those days it was not referred as 'Cloud' but as scalable virtualisation platform. We have an American patent for real-time adjustable compute resources.

How do you perceive your brands presence in the Indian market?

Majority of our progress earlier was in UK or USA

market, whereas in domestic market our presence has just seen five years of operation. Location of being in a Tier II city has been disadvantageous for us initially. People did not take us seriously as we originated in Nashik, however, with time we evolved and built our owned data-center in Mumbai. Customers who have joined us in the past five or six years are still there with us and they are growing too. Now, we have strong presence in Indian metro cities like Delhi, Mumbai and Bangalore with our own data-centers in Mumbai & Nashik and a leased facility in Bangalore. At present, none of the data centers in India are certified by Uptime Institute except

ours. All the major OEM's and start-ups are partnering with cloud and discuss about cloud-opportunities, at the back-end of which everything is done by ESDS. ESDS has emerged as the Cloud facilitator for many billion dollar companies like AtoS, KPIT, L&T Infotech, Tencent, GMR, Mastek and many more; which shows we barely have any competitor for Cloud services in India. Most companies are selling virtualisation as Cloud hosting, which people are buying as well; however, our product has 100 per cent uptime, scalability and high availability. Ours is the only platform where all core banking applications like Finnacle and others can work efficiently, hence, our Cloud platform provides easy accessibility to our customers. Having an upper hand on Amazon and other platforms in terms of the patented vertical scaling Technology, we have accessibility of all enterprise solution applications.

Please elaborate on the role of ESDS in the banking sector.

We work with our partners like Infrasoft, RS Software, HCL, Virmati and few more who provide software solution to banks and we provide them with our Cloud platform-together we cater them with our solutions. We have over 200 co-operative banks with around 4,000 branches who store their data on our platform. Surprisingly, co-operative banks are doing extremely well as they have minimal expenditure budget and they much focused on technology. Large PSU banks spend huge amount of money on software and hardware for their core banking solutions. Other aspects of banking like mobile banking digital payments, NEFT, RTGS, UPI payments, Bharat Bill Payment System (BBPS) and IMPS also require our solutions. Our Cloud enabled security solution "MTvScan" protects the online banking and websites of many nationalised PSU Banks. Now, that the new Payment banks are coming up there is additional scope that has opened for us.

What is the USP of ESDS that the company bank on when it comes to convincing new set of customers?

The main USPs of ESDS is our managed services and our patented Cloud platform and managed Cloud services. We hardly have any competitor in this space in India because of the technology we use and also for the quality of the managed services we provide. We are the only company in the world which has technology for key verticals. Applications for enterprise solutions for every vertical are supported on our Cloud platform, which do not work on other platforms that work on the concept of Load Balancing only. Amazon or Microsoft Azure works only on load balancing, when there is more work load it is distributed between multiple virtual machines. This is the major technology differentiator between major players in the space and us; which is why major alliance partners have chosen us to work with them in this space.

What were the major challenges that ESDS has faced in the Indian market when they started their journey?

Indian mindset of customers is to verify a vendor's background thoroughly before ensuring any business to them. They ask questions like annual turnover and company background. Initially, when we forayed into Indian market we

> **ESDS is the only company globally with technologies for all key verticals. Applications for enterprise solutions for every vertical are supported on our Cloud platform, which do not work elsewhere**

hardly had any background here and hence lost the market very much. It took us some time to convince people with the help of our advance technology and here our turnover did not matter at all. We have also ensured our Cloud services for major government projects like Start-Up India, Stand-Up India, SIDBI and Mudra Bank.

Recently, NPCI has launched Unified Payments Interface (UPI). Please express your opinion on the same.

To make all these new things successful it's important to go on a pay-per-transaction model and this is only possible when your business is on Cloud. In Cloud, your cost per transaction in comparison to on-premise hardware deployment comes down to Rs 1 per transaction for over a period of five years. Besides, Cloud is the only secure platform today and is more secure than any other internal platforms for organisation in case of B2C applications of Banks. ∎

Vortex believes that its energy-efficient and solar-powered ATMs are perfect example of Make in India initiative envisaged by Prime Minister Narendra Modi. Vortex also boasts of India designed dispenser technology and software systems that have earned nine global patents, elaborates **R Narayana Kumar**, Chief Development Officer, Vortex Engineering, in an interview with **Elets News Network (ENN)**

TORCH-BEARERS
Giving Push to Energy Efficient ATM Industry

Kindly give an overview on Vortex Engineering Private Ltd? What qualities set you apart from your competitors?

Vortex has been pioneering products and solutions in the self-service areas of banking like Automated Teller Machines (ATMs). Vortex products have focussed on technology innovations to enable financial inclusion in the emerging markets. Our R&D efforts have been further enhanced by close partnership with IIT Chennai which has led to the development of world class ATM technology - Ecoteller™ - world's lowest power ATM. Vortex has emerged as an undisputed leader in encouraging Operational efficiency and Environmental Sustainability in the

ATM industry globally, be it ATM's that demand low power consumption (~60 W), function without air-conditioners and solar power. Some of the largest solar ATM deployments in India have been carried out by Vortex.

Vortex is a leading provider of ATMs. Kindly throw some light on your strategy to further consolidate ATM-oriented business. Also tell us about number of ATMs being provided to the commercial banks by you.

Vortex counts marquee Indian banks and financial institutions as its clients and has an installed base of around 3000 ATMs. In order to further its objective of enabling

financial inclusion through innovation, Vortex has now developed 'Ecoteller Desktop Mini' which is installable on counter-tops or can be wall mounted (~50kg). It is designed for installations within ultra-small banking branches, 'shop-in-shop' installations and also deployments in rural service centres, hospitals, railway stations, post-offices, airports and retail stores among others. The mini ATM is completing pilots at two of the largest banks in India and designed to enable servicing of the accounts opened under the PMJDY programme. The pilot testing for this revolutionary product has been successfully completed by banks such as SBI, Union Bank, United Bank, Dena Bank. Market has appreciated the EcoTeller Mini very well and the product has been gaining traction.

What kind of offerings do you have for the BFSI sector? Do you see huge opportunities in the banking and financial services sector?

We believe the key value proposition we are offering the Indian market, viz. ATM type Self-service products are most suitable for financial inclusion, lowest power consumption and least operating cost are also eminently suitable and offer great value for the emerging markets in Asia, Africa & Latin America, which we are contemplating to target.

What kind of services you render for ATM management?

Vortex does not focus directly on the ATM management business, but manage Vortex ATMs for some of our customers. We also offer Management software platform solution for 3rd party ATM management business. This software platform is a multi-vendor solution – which involves live monitoring, and remote management of ATMs.

What is your view on the 'Digital India' and 'Make in India' initiatives of Government of India to encourage private players to invest in the country and create more jobs?

Our completely India designed dispenser technology and software systems have also earned nine global patents which we consider is a rare feat. Our products have also commenced exports to emerging markets. We are an excellent example of 'Make in India'.

For Vortex, 'Make in India' is not just about manufacturing in India but also about innovating for the country. This in-turn, addresses regional challenges of emerging markets essentially then 'Make for the world'.

Vortex has also focussed on building software components on the ATM based on open source technology which is also in line with current Government of India policy for public sector enterprises and with the 'Digital India' initiatives. Open source technology also provides banks a greater degree of security and lower running cost.

Ecoteller Mini's Salient Features

- Ultra low power consumption compared to competitive ATMs, which also translates reduced battery backup
- Unique ATM that can even work in non-A/C environment
- Works on only single solar panel, where solar back up is required
- It does not require operating system software upgrades and anti-virus software
- Truly mobile— works with dongle, card-less and biometric solutions

What is the USP of Vortex's products that gives them an edge over others?

The focus of Vortex has always been centred on Operational efficiency and Environmental Sustainability. This is greatly achieved by in-house developed world's most energy efficient ATMs (~60 W) and non-dependent on air-conditioners.

Some of the regional usability innovations to further this objective are below:

- Enabling ATMs to work on card-less cash withdrawal/small cash deposits with complete Aadhaar enablement. Pilot projects have been completed. It is likely to be of high interest to the Small Finance Banks. This solution also has the option to provide

> "For Vortex, 'Make in India' is not just about manufacturing in India but also about innovating for the country. This, in-turn, addresses regional challenges of emerging markets

for integration with the operations of the Business Correspondents

- Enabling ATMs to work on card-less cash withdrawal/small cash deposits with complete Mobile phone integration which may be of high interest to the Payment Banks

Are you facing any challenges in expanding your business in India?

Vortex though being a MSME has invested heavily on R&D activities which has resulted in world class product/ solution. We would like to request for a special support in policy and financial areas. Public sector banks have been a source of strength to technology providers, however their procurement policies related to business eligibility criteria/ technical specifications have turned out to be a constraint for domestic MSME companies like Vortex. We seek support in this regard. ∎

Zero-Data Loss Solutions for PEACE OF MIND

Hitachi Data Systems is the only company which offers zero-data loss solutions and this is something that it wants to commit to its customers while entering into an agreement. This is one of the advantages on which it has created the base in the country, says **Vinod Ganesan,** Director Sales-BFSI, Hitachi Data Systems, in conversation with **Elets News Network (ENN)**

How do you describe Hitachi Data Systems' presence in Indian market – both in public and private sectors?

We are glad to update you that we have just completed 15 years in this country. Primarily, when we started, we used to partner with Sun Microsystems – one of our key partners. Through Sun Microsystems, we penetrated into diverse sectors namely, tele communication, banking & finance, ITES, etc. After the acquisition of Sun by Oracle, they decided to call off this relationship and we had to rebuild the organisation from scratch and make sure services to our existing customers continued un-interrupted while we seamlessly transition them to Hitachi Data Systems. We were pretty much successful in executing this important transition that laid the foundation of our growth story in India.

The journey has been pretty good for us since then. We have been able to consolidate our position across

different sectors – Government, BFSI, ITES and Tele-communications being critical among them. Leveraging on our expert teams, we have been able to create a niche for us. So when a customer thinks about Hitachi Data Systems, he thinks about availability and peace of mind.

All our deployments have been in real mission-critical customer facing environments. The major banks for their customer facing business have relied on Hitachi Data Systems. Our customer base clearly speaks about the reliability that we offer to our clients. In fact, we are the only company on the planet which offer 100% data availability guarantee, which ships along with our product.

Today, we are helping our customers to build the next-generation information architecture which can be seamlessly scaled as and when required.

Which are the other organisations you serve?

Pretty much every industry is covered. Manufacturing Sector – where we have deployed to support their core ERP Systems, ITES –to power their employee facing systems. So in every sector we have our solutions working smoothly, enabling our customers to drive operational efficiencies and highest levels of agility.

What is the USPs of Solutions offered from Hitachi?

Traditionally IT infrastructure and investments have been driven by individual project based buying. This has resulted in information Silos .Needless to say, everything is operated at different levels of efficiencies and utilization; some being over-utilized while others being under-utilized depending on the business demands.

You don't have the ability to leverage something out of the under-performing infrastructure and provision it back to the infrastructure or applications that actually demands more performance. Hitachi's biggest strength is our ability to virtualize; which is delivered by the storage platform itself and not an afterthought unlike our competitors, who use a separate appliance to deliver similar functionality. The issue with their approach is it shifts the problem from controlling the sprawl of heterogeneous platforms to creating a sprawl of the virtualization layer itself , due to their inability to scale. In band Virtualization is our biggest USP and we remain unbeatable in this area. Further, our systems are being used for years without any failure. Hitachi also takes pride in its ability to address infrastructure related issues. We have been extremely successful in helping our customers solve their infrastructure sprawl challenges.

How you are catering to the BFSI sector?

Bank's cannot afford to lose transactional data at any cost. So customers started thinking on architectures to protect data even if the Primary site is unavailable. We

pioneered the three data centre-based application architecture which is today leveraged practically by every bank. So 9 of top ten banks in this country – including the private sectors use our zero data loss solutions which ensures all the transactions are protected irrespective of the site failure. Besides, with the help our mobility and content management solutions, we help banks preserve the data and offer robust data management strategies.

Will you please talk about the challenges that Hitachi had to face in its initial days? Customers' tend to get influenced by ISV's while deploying their applications. Their recommendations for particular system architectures mattered a lot. During our initial days, bringing

> "BFSI and telecom sectors are crucial areas for us. Leveraging on our expert teams, we have been able to create a niche for us. When a customer thinks about Hitachi Data Systems, he thinks about availability and peace of mind.

these ISV's on board was a challenge. It took a little time to create the awareness, and even today considering the plethora of new solutions being deployed by customers, identifying and keeping pace with these relevant ISV's to drive tighter integration with our Infrastructure solutions surely poses challenges.

What are your thoughts on Bank's role in the Digital India initiatives?

The Digital India framework is pretty vast. Government is actually trying to make several things easier for citizens to drive better citizen services. This includes things like efficient collection of direct and indirect taxes, provide efficient infrastructure etc. to improve the standard of living. Public safety, Energy management, Smart payments, smart healthcare services, etc are also part of the agenda. Banks are playing a critical role in these initiatives. They are keen to be the single source for all the payment and collection options being provided in a Smart city to help the government and drive relevance to their end customers. ■

BSE Bags
RED HAT
INNOVATION AWARD

Riding the Red Hat solutions, the Bombay Stock Exchange has been recognised for its "notable flexibility, scalability, cost effectiveness, performance and security within an infrastructure". A report

Ashish Kumar Chauhan, Managing Director & CEO, BSE (centre) receives "2016 Red Hat Innovation Award", instituted by Red Hat, the world's leading provider of open source solutions.

The Bombay Stock Exchange (BSE) has been recognised as "2016 Red Hat Innovation Award" winner by Red Hat, the world's leading provider of open source solutions.

The Asia's first stock exchange has been honoured in the Infrastructure category, recognising its notable flexibility, scalability, cost effectiveness, performance, and security within an infrastructure.

Congratulating the BSE on winning a Red Hat Innovation Award, Rajesh Rege, Managing Director, India, Red Hat, said: "The BSE has effectively implemented open source solutions to build their new BOLT Plus trading infrastructure and break free from vendor lock-in."

"Today, the BSE has been recognised as the fastest stock exchange in the world, with speeds reported to be 10 times faster than the next fastest exchange. The Exchange is one of Asia's most reputed stock exchanges and their openness to innovate and change is admirable," Rege added.

There are over 5,500 companies listed on the BSE, making it the world's largest exchange in terms of listed members.

Feeling "honoured to receive the a 2016 Red Hat Innovation Award", Ashish Kumar Chauhan, Managing Director & CEO, BSE, said: "Our switch-to-open source has been exemplary and the results have proven Red Hat to be a reliable and critical technology partner."

Chauhan further said: "With Red Hat's open source technology, we have been able to achieve flexibility, agility, and scalability needed to meet our changing market demands. Red Hat has always been there to support us in our day-to-day operations and such trust helps us simplify our business. Today, Red Hat is our backbone and an intrinsic part of our business transformation story."

For two decades, the BSE struggled under the weight of its proprietary technologies. The old infrastructure limited innovation, and the high cost of upgrades ultimately made its system economically unfeasible.

The BSE later collaborated with Red Hat to build an entirely new trading system on open source technology, powered by Red Hat Enterprise Linux. Since implementation of the new trading system, BOLT Plus, the BSE has increased its volumes from 10 million orders a day to 400 million, cut hardware costs by 66 per cent and increased

trading speed from 10 milliseconds to six microseconds.

Since 2007, Red Hat has recognised the achievements of customers and partners worldwide, who demonstrate creative thinking, determined problem solving, and innovative uses of Red Hat technology with the Red Hat Innovation Awards.

The Award winners from the previous decade represent leaders from around the world and across industries, who are using open source solutions to transform their organisations and enable faster innovation.

For the 2016 awards, over 60 nominations were received, with judges selecting one winning project in six categories that exemplified the most innovative achievements used to answer complex IT challenges with Red Hat solutions.

TROUNCING LEGACY TRADING BARRIERS

Established in 1875, the BSE is Asia's first stock exchange. When BSE shifted from floor-based trading to an electronic trading system in 1995, it used proprietary hardware and software. For the next two decades, BSE was locked into using and investing in those technologies.

"We were more or less stuck," said Kersi Tavadia, Chief Information Officer of BSE. "We could not break free. We could not innovate."

The proprietary solution created many challenges for the BSE. The system's agility reached its limits just when the rapidly growing exchange needed it most, such as while enacting regulatory updates.

"There was a point when investing further in the system did not make any sense, because it wasn't helping us achieve the goals we wanted," he said. "So we needed to cut down the technology and use a totally fresh approach, rather than upgrade the same things again and again."

BUILDING OPEN SOURCE INFRA WITH RED HAT

So, Tavadia and his team decided to take a bold step: discard BSE's entire IT infrastructure and build a completely new trading system with open source technology.

"Google is using open source. Facebook is using it. Everyone else is using it, and that's why they're profitable," said Tavadia. "They're not spending resources on propri-

etary software and hardware. We knew we needed to go in that direction as well."

The BSE knew of Red Hat's reputation as a leader in the open source technology. The exchange conducted a cost-benefit analysis and quickly determined that Red Hat's products and services were extremely competitive options.

> " Following implementation of the new trading system, BOLT Plus, from Red Hat, the BSE has increased its volumes from 10 million orders a day to 400 million, cut hardware costs by 66 per cent and increased trading speed from 10 milliseconds to six microseconds

BSE was also impressed with Red Hat's extensive partner ecosystem — particularly its strong relationships with a large number of hardware vendors.

To achieve the flexibility, agility and scalability needed to meet business needs, BSE used Red Hat technology to implement a new trading system called BOLT Plus. This system is powered by Red Hat Enterprise MRG Realtime, a replacement kernel for Red Hat Enterprise Linux. Red Hat Enterprise Linux provides a modular design that divides the trading system into several independent, isolated components in different service domains. As a result, the BSE can implement, maintain and run these components independently, leading to improved flexibility, throughput, and capacity.

In addition, each component is designed with redundancy for real-time failover, reducing system downtime due to errors or other issues.

As part of the new system, the BSE also implemented Red Hat Satellite for system management, such as patching and configuration management, as well as regular system updates.

Additionally, Red Hat JBoss Enterprise Application Platform offers the BSE a fully certified JavaTM EE platform for quickly developing and deploying applications.■

BENEFITS
- Reduced trade transaction time from 10 milliseconds to 6 microseconds — faster than any stock exchange in the world
- Increased trading volume from 10 million to 400 million orders per day
- Reduced TCO by 90%
- Eliminated manual tasks, resulting in increased operational efficiency and reduced staffing requirements—from 15 to just 2 employees

Uniphore Software Systems' solutions integrate speech recognition and voice biometrics with smart devices to create an efficient service delivery platform, says **Umesh Sachdev**, CEO & Co-founder, Uniphore, in conversation with **Elets News Network (ENN)**

Your Voice is Key to
REAL YOU

How have Uniphore's solutions unleashed the power of human speech?

Speech being fundamental to human conversation is also the most preferred mode of interaction, and Uniphore Software Systems is the leader in multi-lingual speech-based software products enabling humans to use speech to engage and instruct machines.

Being a pioneer in envisaging the way speech technology will drive business in future, Uniphore has aptly tapped the speech's power through speech analytics and other speech interface systems to empower business to drive real value to customers while reducing costs. Our three products—auMina, Akeira and amVoice—unleash the power of human speech to deliver value to enterprises.

Analysing call characteristics made to the company through speech analytics yields better insights into the customers' mind enabling them to differentiate their offering accordingly to enhance customer experience. This in-depth understanding of the customer's intent opens a plethora of opportunities to pitch and upsell a multitude of other services.

auMina, the speech analytics solution with the industry's highest accuracy rate, is available in over 30 global languages and adopts a goal-based approach to drive a set of business outcomes.

With increased mobile penetration, akeira – the self-learning virtual assistant software, equips enterprises with a speech interface system, enabling customers to complete transactions without human intervention, enabling enterprises to save millions in customer support. With the mobile channel poised for exponential growth, this form of self service through a virtual assistant will dominate the way transactions are done in future. A banker in Chennai or a farmer in rural Maharashtra will speak to their respective mobiles to get information, instruct actions and complete transaction on their own in their native language itself.

amVoice – the voice biometrics solution, has the ability to distinctly identify a customer's voice to ensure safety and security of online transactions.

How does your company help clients in keeping pace with fast changing consumer demands?

Since speech is the most preferred mode of communication, the customers have a high tendency to make calls to contact centres for grievances and queries. Incoming calls remain the most popular channel of customer interaction. Unstructured data collected from such calls can be effectively used to derive meaningful insights through speech analytics, a process of analysing calls to expose critical customer intent and crucial information during a

customer's interaction with an enterprise.

It helps derive deep insights into customer's needs and behaviour enabling organisations to service their customers better. Combined with emotion detection and the power of applied analytics, speech analytics empowers enterprises with the information needed to be proactive and innovative thereby keeping pace with increasing customer demands.

With increased adoption of speech interface systems like Siri and Cortana, customers are increasingly becoming familiar with talking to their phones for answers to their queries. Uniphore allows enterprises to deliver the same experience through its virtual assistants. Virtual assistants, powered with artificial intelligence, will help enterprises get ready for the next ear of customer centric, multichannel, highly competitive business environment marked with rapidly changing customer demand and expectations.

Please tell us in detail about your products — auMina, Akeira and amVoice.

Uniphore has pioneered the development of integrated speech-based applications, catering to leaders in several industries, including Banking, Financial Services, Healthcare, Agriculture, Education and Retail. Our solutions integrate speech recognition and voice biometrics with smart devices to deliver an efficient service delivery platform

Uniphore's products can be understood as:

Speech Analytics (auMina)

It allows organisations to analyse customer calls made to the company to identify customer intent and monitor customer behaviour and sentiments. auMina software helps you improve overall call quality by measuring and continuously improving agents' knowledge, demeanour, sales skills and adherence to processes and policies. You can also extract meaningful insights from keyword spotting and emotion detection of voice conversations between contact centre agents and consumers. This information enables enterprises get deep insights into customers' needs and equips them with appropriate content required to make quick decisions to drive business outcomes. Besides offering an enriched experience, you also build customer loyalty and open avenues for upselling. Through concept of packs, specifically designed to drive a set of business outcomes, it enables faster value realisation through standardised rapid deployments.

Virtual Assistant (Akeira)

With massive adoption of Siri, Google now and Cortana, customers are increasingly getting into a habit of speaking into their phones for answers to their queries and needs. In the enterprise space, a virtual assistant of similar nature is increasingly replacing traditional medium for completing business transactions. Akeira software, provides a premium consumer self-service experience through an intuitive voice interface. Infused with a self-learning technology, it provides a natural, multi-turn and contextual dialog to consumers across a variety of interaction channels to handle unstructured queries replicating intelligence and experience gained from a human interaction

Voice Biometrics (amVoice)

Voice, like fingerprints, is very unique to every individual. Voice Biometrics is the ability to automatically identify the customers through their voice. amVoice system captures the unique characteristics of a caller's voice through hundreds of parameters to distinctly identify the customer. It allows remote authentication of the caller, enhancing security and reducing risks associated with digital transactions.

How do you discover trends, anticipate needs and improve consumer experience while eliminating fraud and identity theft?

> "Uniphore has pioneered development of integrated speech-based applications, catering to leaders in several industries, including BFSI, Healthcare, Agriculture, Education and Retail

AuMina helps identify customer needs by providing meaningful insights collected from customer calls. Combined with emotion detection and applied analytics, it gives prescriptive and predictive recommendation in tune with business trends, changing customer needs. This allows enterprises to be proactive in their interactions with their customers leading to enhanced customer experience and delight. amVoice through its intrinsic ability to uniquely identify a customer voice helps eliminate fraud and identify theft, providing a secure environment for business transactions.

What is in the offing from Uniphore?

Uniphore's products, which include a virtual assistant that is able to process more than 25 global languages and 150 dialects, are being used by over five million people, mostly in India. Uniphore is building bridges and helping hundreds of millions of people across the divide between the digital and the real world by harnessing the power of speech. The team at Uniphore is constantly involved in enhancing our products with better artificial intelligence and cognitive capabilities. It will provide a personalised context to business environment through natural language processing, creating a real life human interaction with machines. ∎

A majority of the world's financial cards are issued on our solutions, and every year, our authentication software is used to fight fraud and safeguard over 400 billion transactions globally, reveals **Ajay Kumar**, Regional Managing Director - Asia Pacific, Branch Transformation & Payments Solutions, Entrust Datacard, in an interview with **Nirmal Anshu Ranjan** of **Elets News Network (ENN)**

PLASTIC MONEY
Trust *Entrust Datacard* for Card-Based Banking

Please give us an overview of Entrust Datacard and the role it plays in the Indian financial system.

Entrust Datacard works closely with hundreds of financial institutions, including the world's 20 largest banks. A majority of the world's financial cards are issued on our solutions, and our authentication software is used to fight fraud and safeguard over 400 billion transactions worldwide annually. We offer a wide range of solutions, including instant issuance, central issuance and an authentication platform to secure mobile devices and transactions.

An example of a bank that utilises Entrust Datacard solutions includes the State Bank of India. With the vision of "Next Generation Banking with a Difference", SBI launched a kiosk-based digital banking initiative—sbiINTOUCH— along with a debit card instant issuance and personalisation solution.

The sbiINTOUCH digital branches issue personalised debit cards instantly using Datacard®CE870TM instant issuance systems and Datacard® Cardwizard® issuance software over the kiosk where a customer gets a debit card in just 10 minutes after the account opening process. Another innovative and forward looking bank is also going to launch financial instant issuance in their branches with Entrust Datacard.

Entrust Datacard has about 90 per cent market share in financial card personalisation and has implemented financial instant issuance solutions at more than 35,000 branches across 1,000 banks globally. Majority of the card bureaus in India are using Entrust Datacard solutions in their facility to personalise debit and credit cards for the banks.

Besides, 18 of the top 20 banks in India are using Entrust Datacard SSL certificates.

Globally, the way financial sector operates is undergoing a huge change. Would you call yourself a catalyst to the process?

Absolutely! Today, the legacy business models and go-to-market strategies previously adopted by financial institutions have been lost in response to changing consumer behavior, engagement and regulatory requirements. Consumers want their financial institution to offer services that align with their lifestyle, including engaging communications, instant service, multiple options and convenience. This forces organisations to re-evaluate their existing standard operational procedures.

According to a research report from Euromonitor

International, annual debit card payments have increased by double-digits in India which will continue to be a debit card market with 90 per cent-plus card circulation within the overall card portfolio. This growth indicates a dramatic decline in the use of cash and checks as consumers embrace more card-based payment methods.

With this increased focus on debit cards, it is critical for financial institutions to implement a business model that differentiates them from the competition, and one way to do this is through a digital branch concept. This has become the future focus for many institutions to stand out from others by incorporating innovative strategies, like instant issuance of payment cards, into their card programs. And, Entrust Datacard has one of the most robust solutions for instant issuance to-date.

The Government of India has launched the ambitious Financial Inclusion (FI) drive. Are you associated with it in any way?

There is an estimated 2 billion+ adults worldwide that do not have a formal banking account – which is roughly half the adult population, according to a World Bank research. Evidence shows that economies with a higher percentage of adults that have access to formal financial services grow at a faster rate and have less disparity when it comes to income equality.

Emerging economies around the globe including India are realising the benefits of increased financial account penetration, which is a driving factor in the implementation of FI plans. As these plans roll out, industry stakeholders are evaluating new technologies that will help them achieve their FI goals while at the same time remaining compliant with global standards.

The Entrust Datacard financial solutions help achieve FI goals by enabling immediate access to payment cards with instant issuance of permanent cards at branch or through self-service kiosks. Majority of the card bureaus in India are using our systems to personalise the RuPay cards under the FI plan.

Technology aids faster service delivery, but it also bring along challenges of security and privacy breach. How do you handle these threats?

The frequency and cost of handling cybercrime continues to rise with increasing sophistication in attacks on networks, devices, applications, or other digital identities. Many breaches begin with compromised identities and stolen credentials. While strong encryption is the topic of much debate, a missing aspect of the conversation is the need for strong identities that enhance the user experience. If an identity is compromised, encryption alone provides no greater security than if encryption is not applied at all.

High-profile attacks against identities have spotlighted that it's imperative to move beyond single sign-on and hardware-based second factor authentication. Given today's threat landscape, we cannot continue to rely on username and password combinations to ensure security – we need identity-based security. So, in the coming times, the current fluctuations will fundamentally change the way organisations handle authentication.

Entrust Datacard plays a direct and vital role in the market dynamics of these trends. Our identity, authentication and encryption capabilities will secure the trusted communications as well as encryption of your valuable information.

As per Entrust Datacard, it deploys technologies for attracting new customers for banks. How does that work?

Entrust Datacard solutions empower consumer marketers to deliver robust end-user experiences that drive loyalty, trust and profitability while offering the flexibility to empower the traditional, online and mobile payment platforms. Our solutions for instant card issuance, bureau operations and transaction authentication can be config-

> **Entrust Datacard has about 90% market share in financial card personalisation and has implemented financial instant issuance solutions at more than 35,000 branches across 1,000 banks globally**

ured to create powerful experiences that delight consumers in branches, at home and on the go.

The Government is keen to make India a digital nation. What solutions can you offer for enabling e-Governance in the country?

Government's face increasingly challenges, forcing them to find ways to strengthen border security and streamline the processing of authorised travellers. They must find ways to remove cost from benefits programmes while also fighting fraud and improving service levels. And, they must develop highly secure infrastructures to support rapidly expanding portfolios of e-gov services.

With international migration and tourism at an all-time high, more than a billion people move across international borders each year. Entrust Datacard offers the solutions governments need to enroll citizens, issue secure credentials, authenticate credentials at points of interaction, and securely manage credentials throughout their entire lifecycle. The ability to establish trusted identities helps governments protect their citizens and secure their borders. ■

Over the years, Jampot has carved a niche for itself in the Trading Floor Telephony segment; and it took lots of effort and expertise to replace some of the top global players occupying the space, recounts **Sameer M Gokhale**, Co-founder & CEO, Jampot Technologies Pvt Ltd, in an interview with **Poulami Chakraborty** of **Elets News Network (ENN)**

Jampot Takes on Titans with
Tailor-Made Products

Please tell us about Jampot's presence in the Indian market.

We incorporated Jampot Technologies in 2010 with the intention to bring in niche Telecommunication Products and Solutions developed by relatively smaller companies from Europe, Develop expertise in the related technologies and provide world-class services to customers in India.

Jampot is promoting niche solutions coming from smaller European companies and opening up the market for them in India. These solutions are not off-the-shelf solutions, as they need to be customised as per the Indian infrastructure, market and customers, and which needs good Telecom and Networking knowledge. They get integrated on the back-end with the IP Telephony backbone, provided by standard telephony providers like Avaya, Alcatel and Cisco. We have also added specialised Trading Floor Telephony solutions aimed at serving treasuries of banks and financial institutions.

Over the last five years, Jampot has carved out a niche for itself in the Trading Floor Telephony segment. With market already occupied by a few incumbent players, every customer won was replacement of the existing solution with Jampot's. We has developed a pool of skilled members and have gone up the value chain significantly by becoming master solution providers, running a 24X5 technical assistance center from Mumbai to serve our OEMs (original equipment manufacturers) customers worldwide in the last two years or so.

Since we've developed this core expertise with team in India, Jampot engineers are preferred by our partners and are travelling worldwide for providing installation, deploy-

ment and specialised training. Since last year, we have been serving the customers in the US, Israel, Singapore, Hongkong , Australia, etc.

So it's been like a real value addition, where our OEM sitting in Europe is giving preference to our team members over their US counterparts or counterparts in APAC.

What kind of solutions you provide to the Indian BFSI sector?

We have specialised ourselves in providing the enterprise telephony solutions using latest technology called Voice over Internet Protocol (VoIP). In the voice over IP telephony solutions there are many players. Jampot has created niche for itself in the Trading Floor Telephony solutions and associated services, mainly used by banks and the financial institutions in treasury department. Treasury is the department with highly skilled and highly paid subject matter experts operate and invest money in equities, bonds, funds, comodities, Forex, etc., dealing with other banks, HNIs or with the FIIs. So, it is very business critical and sensitive segment we cater to.

In institutional trading, since every trade is worth crores, it doesn't allow scope for any glitches during the trading hours. Decisions are made in a split seconds with just few words spoken, signs and gestures, and the deal is closed over phone. And, all the calls and conversations needs to be recorded, preserved in tamper-proof mechanism for 3 -7 years. So, a combination of Robust backend IP Telephony, state-of-the-art IP Dealerboards and tamper-proof IP recording makes the Trading floor Telephony Solution.

After eight years of existence in the market, how would you evaluate your company's presence?

When we started, there were already established players from Europe and the US in the market for 30-35 years with their legacy products and unwilling to use latest technologies. However, with confidence on the latest technology and people behind the European startup companies, we took challenge to introduce new product line in the Indian market. For us, every win in the Indian market was replacement of one of our competitors.

So, it was always fun to prove our capabilities in terms of product features and exude confidence as a new company that we would support such critical operations.

Some prominent users of our solutions and services are India Infoline, Religare and Reliance Equity, on the private broker side; public sector banks like Union Bank of India and Canara Bank; and private banks like Kotak Bank, HDFC Bank and IDFC Bank. We also have Bank of Abu Dhabi, Jammu & Kashmir Bank, Govindram Forex, etc. In last two to four years, out of the number of new deals closed, Jampot has won over 75 per cent of them. I would say, we have been successful and are on the right track to keep it consistent.

Any roadblocks that Jampot came across while operating in the Indian market?

Yes, quite a few! We started Jampot with loads of international technology and business experience, but doing business in India involves a whole lot of learning. Indian customers expect best services at least prices, as services are taken for granted! While Europeans pay premium for niche technology and service, Indians would pay lavishly for gadgets and gizmos for personal use and are unwilling spend on technology for employees. However, this trend is changing gradually.

As a technology service provider in banking, how do you see rise in technology adoption in the banking industry?

I will give you an example: we use touch screen technology in our devices. Five years back, even before we could talk about technology and features of our solutions, we had to convince customers saying, "Don't worry, touch screen works. It's same as using buttons". Thanks to growing familiarity of people with technologies, now I don't have to convince them. We can see the people in banks and

> **Jampot is promoting niche solutions coming from smaller European companies and opening up the market for them in India. These solutions are customised as per local requirements**

financial institutions adapting to new technologies very fast. When we talk to IT teams in banks, they know what they want. It helps us as well as new technology providers to actually be in line with where the world is heading.

Would you share upcoming innovations of Jampot?

We have been working on the niche technology solutions as company's vision. It's working for us, and therefore, we would continue. We are adapting to cloud technologies. Our extended offering from VoIP Telephony to RoIP (Radio over IP) would cater to Security, Command and Control segment. We are looking at Over-the-Top services and solutions for reliable internet for enterprises. We have also ventured into a cutting-edge technology called Photonics that harnesses light particles (photons). This could be a technology for the coming decade. We would strive to become first of its kind Photonics Design house in India.

When you look around and see what are pain areas for businesses, opportunities are abundant. One needs right solution, priced rightly, targeted for right enterprises and give them confidence that are being served by right people! ∎

Spot Security Chinks
Thwart Cyber Attacks

It's the responsibility of a Chief Technology Officer (CTO) of a bank to know where would an attacker try to compromise the security, how to detect it if the security is compromised, and how to quickly respond to contain a breach, says **Bryce Boland**, CTO - Asia Pacific, FireEye. Inc., in a conversation with **Elets News Network (ENN)**

Kindly share FireEye's insight into present-day bank breaches and their impact on the financial system

The sky hasn't fallen on the financial system but our institutions are facing very tough realities in cyberspace. Most cyber attacks are opportunistic and can be relatively easily prevented, detected and contained. Yet there are a number of organised and highly capable financial cybercrime groups which are succeeding on a regular basis. They routinely breach financial institutions. For the top (cybercrime) groups, this is extremely lucrative.

As the CTO of FireEye (in Asia Pacific) how do you view the RBI mandating banks to put in place a cyber security policy?

Policies are useful and this new one is a starting point. But it's only the beginning of addressing the threats. Policy helps formalise the need for security and risk management within our financial institutions. This can be useful for creating accountability and ensuring there's governance and no oversight. But the policy cannot replace action. It's important that processes are in place to direct teams about detecting and responding to incidents.

We regularly see firms, which are policy-compliant, asking us to respond to breaches. Policy only gets you so far.

Having been into IT Risk Management globally for long, how do you perceive the gravity of cyber threat to the Indian banking system?

India's banks are facing a rise in significant cyber threats. If I were president of an Indian bank, I would want to know if we had been breached. Just because no alarms have gone off, it shouldn't be assumed threat actors are not existing inside the bank's systems. I'd want to know where would an attacker try to compromise the bank? How to detect it if they did compromise us, and how quickly can our defenders response to contain a breach?

What guidelines are required to transform an organisation's security posture?

Guidelines can't transform a security posture. True transformation takes action. It would be better if we understood how organizations could transform their security posture? We recommend increasing focus on detection and response so that incidents are thoroughly investigated. To fend off advanced cyber attacks, a combination of technology, threat intelligence and expertise is required.

What security suggestions would you give to banks with regard to strategies that work or don't work?

A good strategy is to assume you don't know everything and find ways to bring people who can give you an alternate viewpoint—and external perspectives. Leaders need to challenge their IT and security teams. Too often, incidents are covered up, incompletely or poorly investigated, or not detected at all.

How crucial is the role of a CTO in the current scenario?

The CTO can bridge between the business problem and the technology problem. They need to help business leaders understand the technology side of the business, and ensure that technology teams are addressing the right business problems.

The CTO should challenge the existing architecture and strategy for dealing with cyber security threats and show how a change in strategy could better align resources against an evolving threat landscape.

The CTO must understand the strategic decisions of what key terrain they must defend and where technology can be part of the solution. Part of the role of a good CTO is identifying right partners who can bring the capabilities necessary to reach the organisation's goals. ∎

BFSI
Leadership Summit
DIGITAL MONEY - THE FUTURE OF BANKING

3 June 2016
MUMBAI

> *We are fortunate we have India's tack of technologies which enable us to go for end to end paperless processes. Due to UIDAI presence, we have Aadhar enablement, e-sign, e-locker. All these India's tack of technologies will help bank processes to be fully digitised and be paperless.*
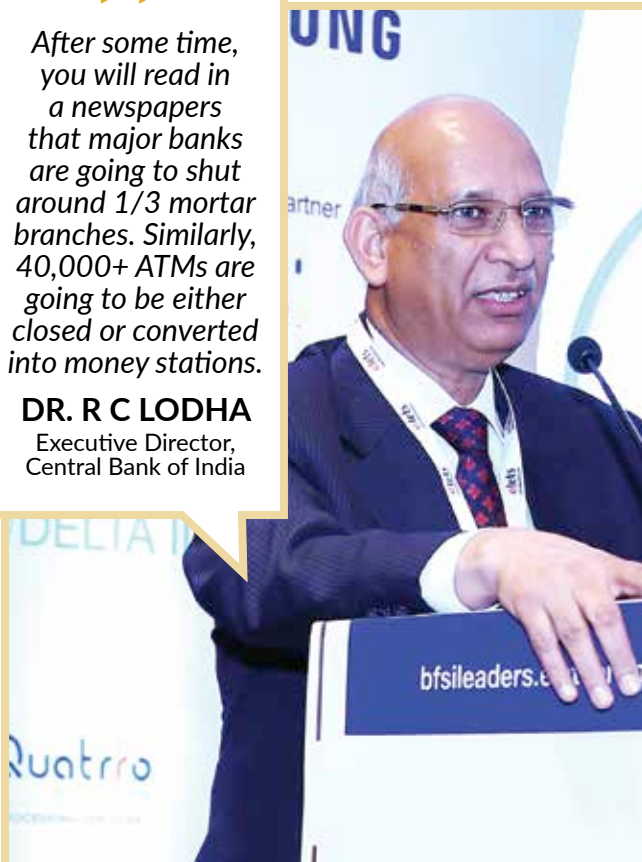
SHIV KUMAR BHASIN
Chief Technology Officer,
State Bank of India

> *After some time, you will read in a newspapers that major banks are going to shut around 1/3 mortar branches. Similarly, 40,000+ ATMs are going to be either closed or converted into money stations.*

DR. R C LODHA
Executive Director,
Central Bank of India

> *Primacy of the customer relationship is a focus for all banks in terms of looking at offerings, additional products and services. But financial engineering by itself is not doing any addition for the end customer.*

GEORGE VERGHESE
Senior Vice President,
VSoft Technologies

"
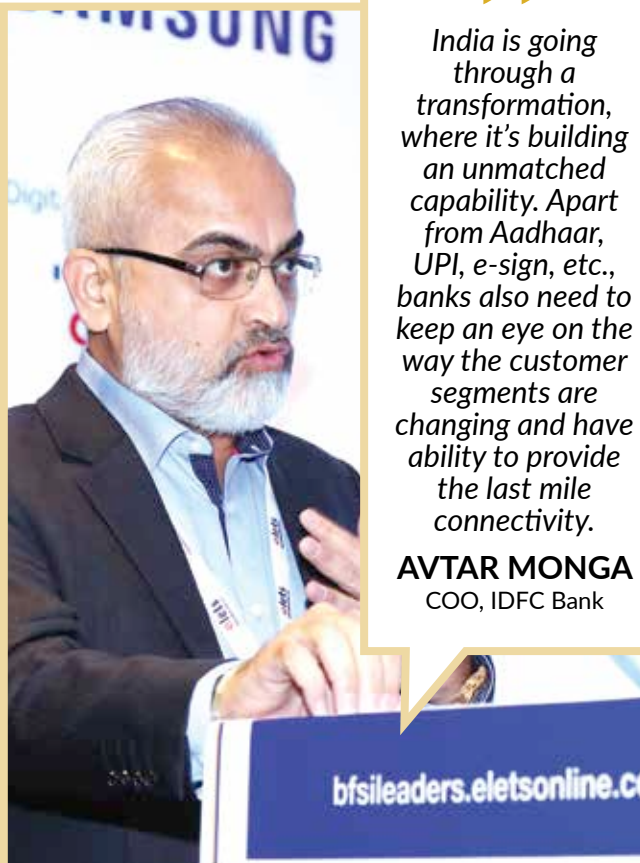
India is going through a transformation, where it's building an unmatched capability. Apart from Aadhaar, UPI, e-sign, etc., banks also need to keep an eye on the way the customer segments are changing and have ability to provide the last mile connectivity.

AVTAR MONGA
COO, IDFC Bank

"
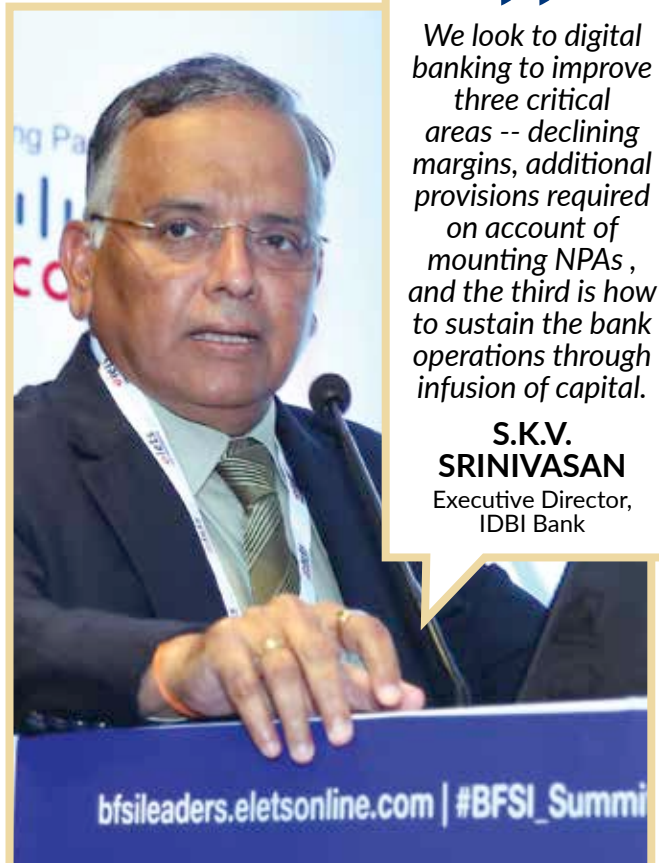
We look to digital banking to improve three critical areas -- declining margins, additional provisions required on account of mounting NPAs , and the third is how to sustain the bank operations through infusion of capital.

S.K.V. SRINIVASAN
Executive Director, IDBI Bank

"
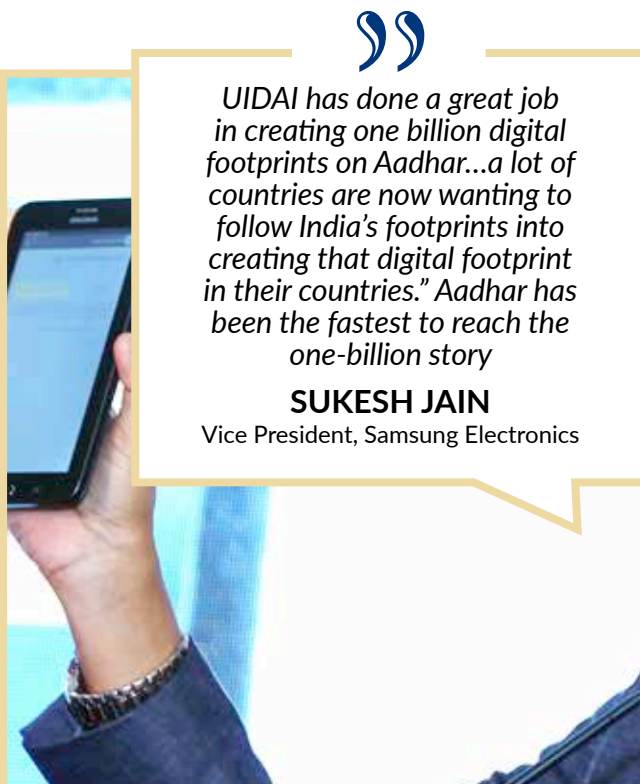
UIDAI has done a great job in creating one billion digital footprints on Aadhar...a lot of countries are now wanting to follow India's footprints into creating that digital footprint in their countries." Aadhar has been the fastest to reach the one-billion story

SUKESH JAIN
Vice President, Samsung Electronics

"

Now RBI has mandated all alerts of transactions must go on mobile... Mobile banking registration with the core banking is the fundamental. In fact, success of UPI (unified payment interface), success of mobile financial services, is critically dependent on that.

A.P. HOTA
Managing Director and CEO,
National Payments Corporation of India

"

We want authentication process to be taken to as many people. It should be the norm of the day. If you want to ensure cardless system, probably one way can be is to use a simple biometric device with an Aadhar number.

SANJAY CHAHANDE
Deputy Director General, UIDAI
NITI Aayog, Government of India

PANEL DISCUSSION- 2

Is Cash No Longer the King? Are Mobile
Payments Accelerating?

Flashback
BFSI LEADERSHIP SUMMIT 2016

If there were efforts made to sensitise the merchant either by insentivising them or educating them, tremendous amount of change management is required. Such steps have been taken by government and as well by various private entities like Money on Mobile.

VAIBHAV JOSHI
Senior Vice President,
Digital Banking,
Yes Bank Limited
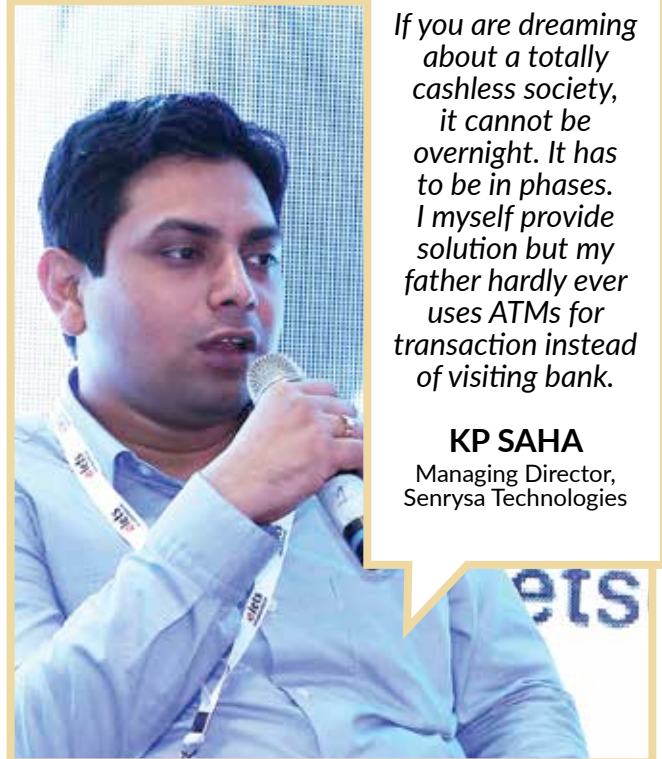
If you are dreaming about a totally cashless society, it cannot be overnight. It has to be in phases. I myself provide solution but my father hardly ever uses ATMs for transaction instead of visiting bank.

KP SAHA
Managing Director,
Senrysa Technologies
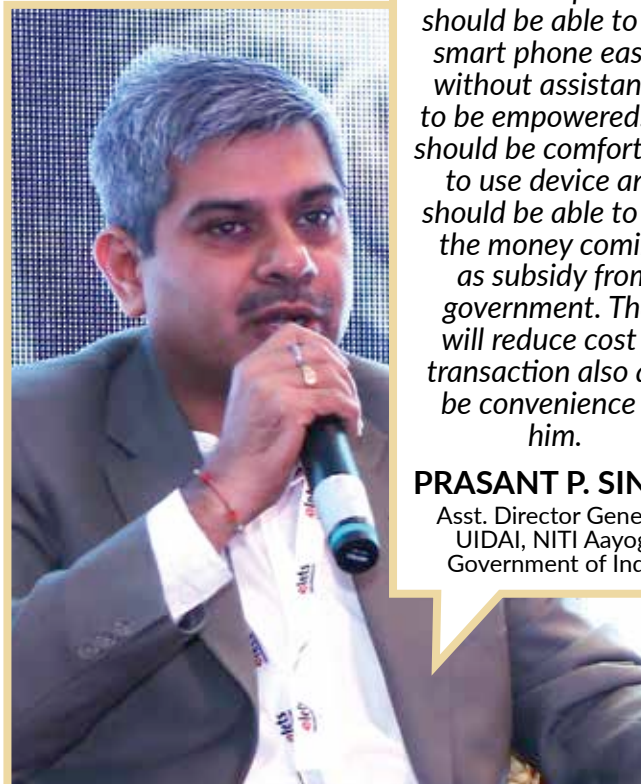
The rural person should be able to use smart phone easily, without assistance, to be empowered. He should be comfortable to use device and should be able to use the money coming as subsidy from government. That will reduce cost of transaction also and be convenience to him.

PRASANT P. SINGH
Asst. Director General,
UIDAI, NITI Aayog,
Government of India
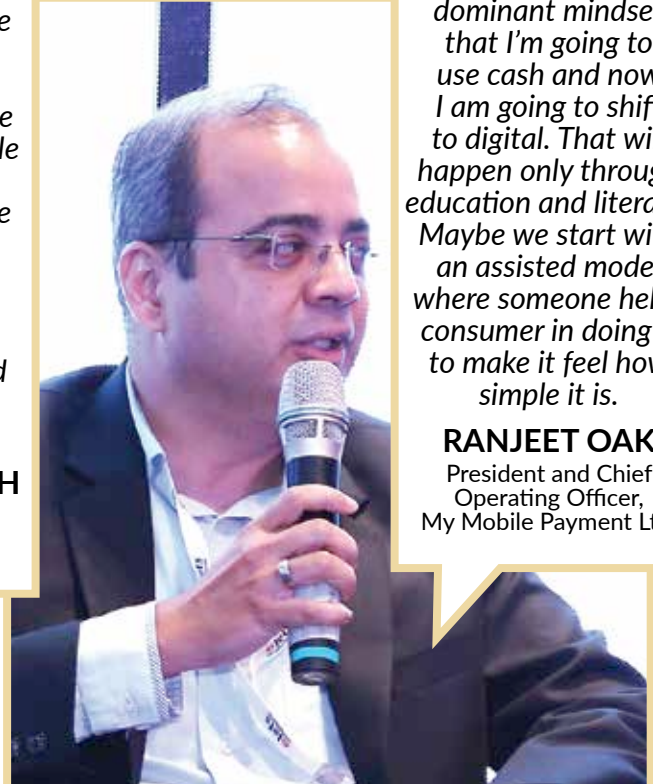
It's a very pre-dominant mindset that I'm going to use cash and now I am going to shift to digital. That will happen only through education and literacy. Maybe we start with an assisted model where someone helps consumer in doing it to make it feel how simple it is.

RANJEET OAK
President and Chief
Operating Officer,
My Mobile Payment Ltd.

PANEL DISCUSSION- 3

Security from Cyber Attack - Action at Appropriate Time

"

We have seen so many things happening in the industry like e-frauds through cards and many other things. To safeguard from all these angles for customer at the focal point we are taking all systems to take care of the system.

S.S. BHAT
Chief General Manager, Canara Bank

"

We are a global bank with presence in over 70 countries . We try to implement same kind of security processes across the globe. Everyone of our client has different requirement. They wouldn't downgrade on their security but they would want us to tweak wherever it is possible.

KRC MURTY
VP-CTO, Deutsche Bank

"

When we add huge number of transactions in future in the existing one, a big question would be whether banks, their service partners, and technology per se can assure that level of comfort and confidence of security of their transactions in the same way what we have been doing right now.

KANCHAN KULKARNI
Regional Head,
ICICI Bank Limited, Maharashtra

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"

It was Delta ID that first got associated with the Aadhaar programme with its expertise to utilise IRIS as an individual's distinguishing feature. In fact, Delta ID's two founding members from the United States were the volunteers of the Aadhaar programme.

VIVEK KHANDELWAL
VP, Business Development,
Delta ID Inc.

"

We see different kinds of (cyber) attacks; threat actors. One is done for cyber espionage. Second type is organised criminal gangs; selling private information in markets and third are nations like US, Russia, China who are at times against big government oraganisations or corporates.

RAJESH NIKAM
Senior Manager, Threat Research & Response,
Quick Heal Technologies Limited

"

Through financial inclusion, we want everyone should have access to all kind of financial products --insurance, loan, mutual fund, equity. When all are able to access such products we can say it's the real meaning of financial inclusion. It isn't about just opening of a bank account.

SUMNESH JOSHI
Assistant Director General, UIDAI, NITI Aayog, Government of India

"

Anything that brings about inclusive growth in society is real financial inclusion for which financial literacy is a pre-condition. It can't happen without technology. So, we've digitised so many products. Our customers can avail them digitally without visiting bank.

G.B. BHUYAN
General Manager, FI, Bank of Baroda

"

In rural areas, people don't know about banking, what is finance. How to do that? Only 40% of farmers are availing loans in organised sector. Still over 60 percent of farmers are availing loans from unorganised sector; Sahukar. We need to think financial literacy's role more than financial inclusion.

R.B. GUPTA
General Manager, Rural Self Employment Training Institutes, Central Bank of India

> *In rural areas, one important thing we have done is micro-ATMs. It's data capture machine what you use for all electronic payments for credit, debit and smart cards. We are using the machine in rural areas and giving it to our business correspondents. Rather now we are giving it to our branches also so that we don't need a teller.*

SANJAY SILAS
President and Head- Branch Banking and
Rural Banking, Axis Bank
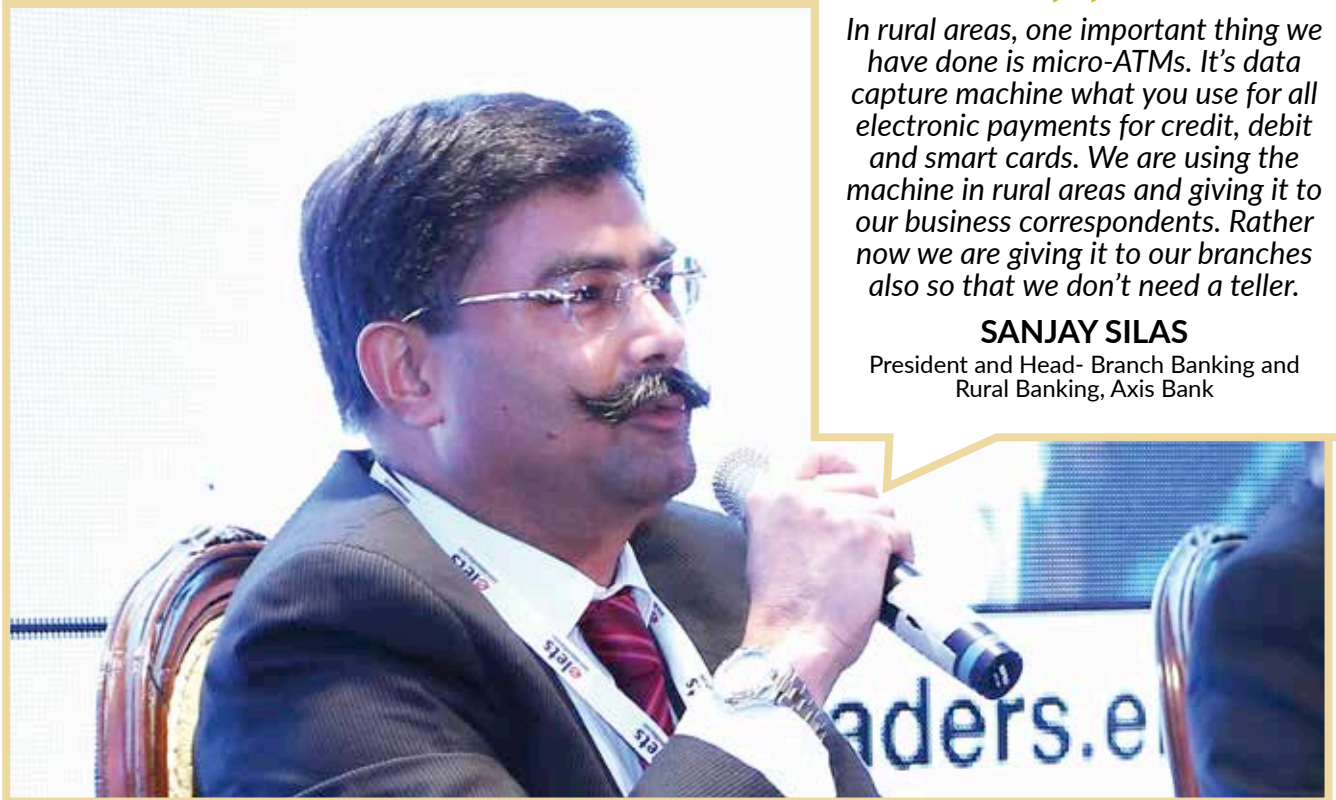
> *Technology inclusion will increase in bank its return on assets...There is a changing customers' perception from traditional to doorstep banking and at present palm banking... Why technology to drive financial inclusion? The answer is: low ticket size of transactions.*

PC PANIGRAHI
General Manager, FI, Union Bank of India

"

*On a gross basis,
every month the large
telecom companies
individually add
about 10 million
plus customers...So,
infrastructure is one
big thing that comes
to the table and
experience of running
a large scale operation
of that scale.*

MUKUL SHARMA
President-Strategy and
Planning, Aditya Birla Idea
Payments Bank

"

*We pioneered and
started MNREGA
and Social Security
Pension payments.
One of the most
critical factors is
understanding
consumer. Let's accept
that despite 70 years
of freedom, we are
still talking about
financial inclusion
because the banking
hasn't happened the
way it should have.*

SHAILESH PANDEY
Executive Vice President
and Head Strategy,
Fino Paytech

"
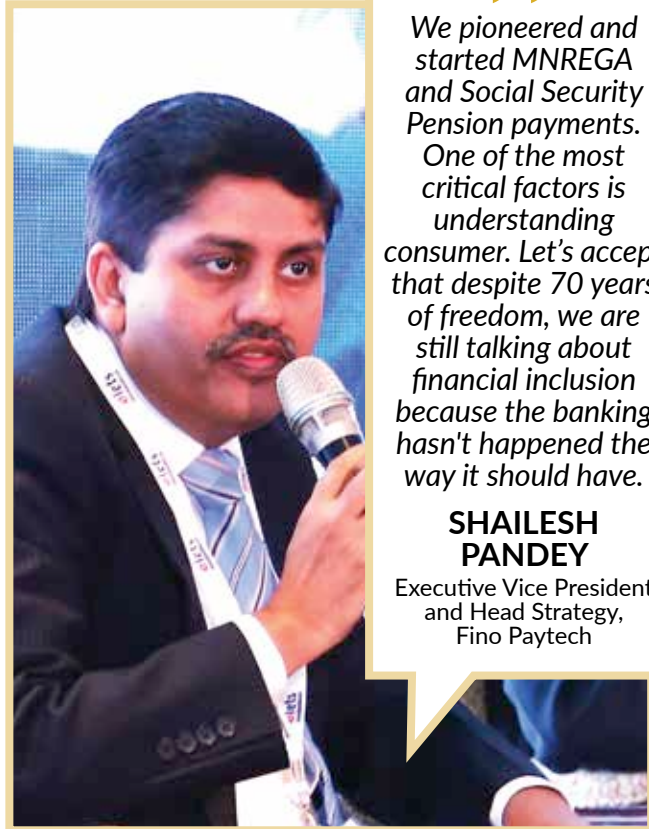
*Any company becoming a small finance
bank in transformation phase faces
many challenges. There's a paradigm
shift in technology. While the RBI
defined we required a capital of 100
crores to apply for a license, the fact is
technology alone takes away that kind
of money. That's a big challenge.*

PRIYAM ALOK
Senior Vice President and Joint Head, Bank
Project, AU Financiers India Limited

PANEL DISCUSSION- 6

Role of Technology in Growth of Cooperative Banks

> *For cooperative banks, technology is more than relevant than for other banks in the banking segment. The reasons being --business aspect and customer aspect. The way cooperative banks know customers nobody else knows their customers, as they would have customers who would be banking with them for generations.*

VIJAY VADHAWAN
Director, Samsung Electronics

> *Technology adoption in cooperative banks isn't about favouring customers, it's a necessity for sustaining and growth of cooperative banks. We've been very aggressive in technology adoption in our bank, resulting in 20 per cent annual growth. Technology adoption is a must to retain customers and for young customers.*

SADANAND K NAYAK
Chief Executive Officer, G. P. Parsik Bank

> *Some of the large cooperative banks like Saraswat or Shamro Vittal have created their technologies' capabilities in house to the point that they have centralised IT department. It isn't possible for all. So, there's possibility to partner with third party survivours who can become intel inside the bank and drive technology.*

RAJESH DHUDDU
Senior Vice President – Market Development, Quatrro Processing Services

"

We brooded for lagging behind than others and convinced the management and started something called CBS. It supported us throughout for each and every version or issue that came in the market. All adoptions of new technology helped not just the bank but even in our customer satisfaction graph as well. All the cooperative banks should embrace technology.

KIRIT SHAH
Chief Technology Officer,
Shri Arihant Co-operative Bank

"

CLOSING REMARKS

Over 50 percent of the loan disbursed to agriculturist occurs through cooperative sector -- district cooperative bank and primary agricultural cooperative societies. So most of the beneficiaries of the financial inclusion, they are covered by the cooperative sector. Over 70 percent of farmers or beneficaries are covered by cooperative sector than commercial banks and the RRBs.

CHANDRAKANT DAHALVI,
Cooperative Commissioner,
Government of Maharashtra

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