Forbes INDIA

From Hype To Profits

GOING BEYOND DIGITAL IN LENDING

FORBES INDIA MARQUEE

Network 18

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FOREWORD

The Banking and Financial Services industry is going through a very interesting phase. The dramatic increase in technological capabilities, fast evolving customer expectations, growing acceptance of disruptors and rising regulatory requirements are creating tremendous challenges and opportunities. Financial services firms are totally dependent on their technology infrastructures and are forecasted to spend nearly $300 billion per annum by 2021. However, it might not be enough, or perhaps it is not being spent in the right areas, because Gartner recently reported that by 2030, digitisation would make 80 per cent of heritage financial services firms irrelevant — either going out of business, or becoming commoditised or existing formally but not competing effectively. Customers, based on their experiences with big tech companies are demanding seamless and personalised financial services. Bain & Company's survey of consumers across 29 countries revealed that 54 per cent of respondents trust at least one big tech company with their money more than banks in general. Many traditional players face a choice of either becoming irrelevant or proactively disrupting their own business models.

Many banks have begun their transformation journey but haven't been able to extract the true potential from their investments in areas relating to technology such as digital and analytics. Moreover, offering digitised, automated and multi-channel loan operations will soon become 'table stakes', indeed in some markets it already has. In the future, it is possible, perhaps likely, that there will be no direct interaction between customers and lenders, as their requests for loans will be handled by digital assistants and bots — operating completely autonomously.

Today, things such as analysing consumer behavior to identify a new type of loan product, offering a tailored experience, taking finance to customers' doorsteps and plugging lending into the evolving purchase cycle for a seamless experience have all been facilitated by analytics and AI. It is essential to incorporate the capabilities to drive the power of API driven integration, process huge transaction volumes at machine speed, launch new loan products in minutes, anticipate customer needs before they express them and be agile enough to align very quickly to market needs. At Nucleus Software, we have a deep understanding of the complex requirements of the banking and financial services industry because we have spent more than three decades helping some of the world's most innovative financial services companies leverage technology for business results. We combined this expertise with advanced technology to create FinnOne Neo, the 10-time winner world's best-selling lending solution, which is helping companies shape the future of lending worldwide. Our relentless focus on helping our customers gain the maximum return from their investment in technology has been applied to our solutions and we are proud of the results that our customers are seeing.

I invite you to read on to discover that now is the right time to engage in lending transformation — one that is destined to go beyond digital and help you grow your business, transform your customer experience, increase profits and make you future ready.

Ravi Pratap Singh
Chief Executive Officer
Nucleus Software

Nucleus Software is the leading provider of mission critical lending and transaction banking products to the global financial services industry. For three decades, we have helped more than 150 customers in 50 countries drive innovation, enhance business value and deliver outstanding customer experiences. We offer solutions supporting Retail and Corporate Lending, Islamic Finance, Corporate Banking, Cash Management, Mobile and Internet Banking, Automotive Finance and other business areas. For more details, visit us at www.nucleussoftware.com.

THE INNOVATION AND SPEED DRIVEN LENDING OF TOMORROW

It has been proven that clocks run faster on mountain peaks than they do at sea level and more slowly at our feet than at our heads. People believe that time is speeding up, that life is faster today. The evolution of technology has a lot to do with this feeling.

Before always-on and mobile broadband, people finished work when they left the office. But now, customers expect 24x7 service. Technology has helped businesses move faster — for example, the fashion retailer, Zara has built its entire business around reacting quickly to market trends. It takes two weeks to get clothes into stores versus an industry average of six months. Another example is auto manufacturers who have, since the 1980s, been adopting approaches to reduce the time taken to bring a new vehicle to market. The average age of a platform before it is retired or replaced has fallen from 8.4 years in the 1980s to 5.9 years in the 2010s.

In financial services, assembly lines and raw materials are not needed but the sophistication of modern financial services products, combined with complex regulatory requirements makes introducing a new product far from easy. A volatile economic environment, fast evolving customer preferences, rising competition and changing regulatory landscape do not allow lenders the luxury of working on new loan products months in advance. As with every other industry, the trends indicate a need to quickly move towards smart production processes, which are agile, automated and capable of churning out "instant" outputs. Inflexible, monolithic, legacy systems turn a difficult task into a nearly impossible project. However, modern systems have been designed to enable the rapid creation and distribution of new products and services across all the channels customers expect.

For businesses that can overcome the challenges, the rewards can be tremendous. Let us look at an example. HDFC Bank is India's largest private bank by assets (₹10.6 trillion as on March 31, 2018), operating via a network of 4,950 branches and 13,150 ATMs across 2,720 cities. The bank provides a wide range of financial products and services across wholesale and retail banking. Since moving into retail lending in 1997, it has consistently used innovation to grow, and today the results speak for themselves — in December 2018, HDFC Bank reported 43 million customers and gross advances of ₹7.8 trillion. It introduced India's first digital loan against mutual funds in May 2018, which allowed customers to avail of loans in under three minutes. In 2017, it launched digital loan against financial securities for customers to get loans in less than three minutes and offered the 10-second paperless instant personal loan way back in 2015.

The Role of Technology

Competition is increasing with global players entering local markets and technology-powered start-ups attempting to upend the market through disruptive innovation. Here too, technology can help. Modern lending systems, such as FinnOne Neo, ensure that lenders can embed their intellectual property, their unique ways of operating into their products. Not only can they rapidly create new products but they can tailor those products to the needs of individual customers. With these systems, if you have a million customers, you can have a million tailored products, and you can do it profitably. By adopting a rule-based, parameter-driven approach not only can individually tailored products be introduced quickly but changes to accommodate regulatory, market-driven and business requirements can be applied extremely rapidly while retaining control over the loan book.

As artificial intelligence (AI) matures, autonomous agents, operating on behalf of consumers will increasingly interact with bots operating on behalf of lenders. This "machine-to-machine" operation will dramatically increase the pressures on technology systems – volumes will skyrocket and expectations of response times will change. Machines will expect nano-second response times and engage in negotiation, resulting in even more tailored products and services, perhaps with loan durations reducing to unheard of durations. Instead of a single 5-year car loan, perhaps machines will renegotiate dozens of loans over the same time period. Data analytics will play a vital part in this new world. Nucleus Software's AI powered Nucleus Lending Analytics is designed to help lenders benefit from data-driven insights in areas such as identifying new products for specific customer segments, targeting the right customers, optimising marketing campaigns, offering risk-based pricing, enhancing the speed and accuracy of credit decision-making, managing the quality of portfolios, reducing customer churn, identifying accounts at pre-delinquent stage, and improving loan collections. F

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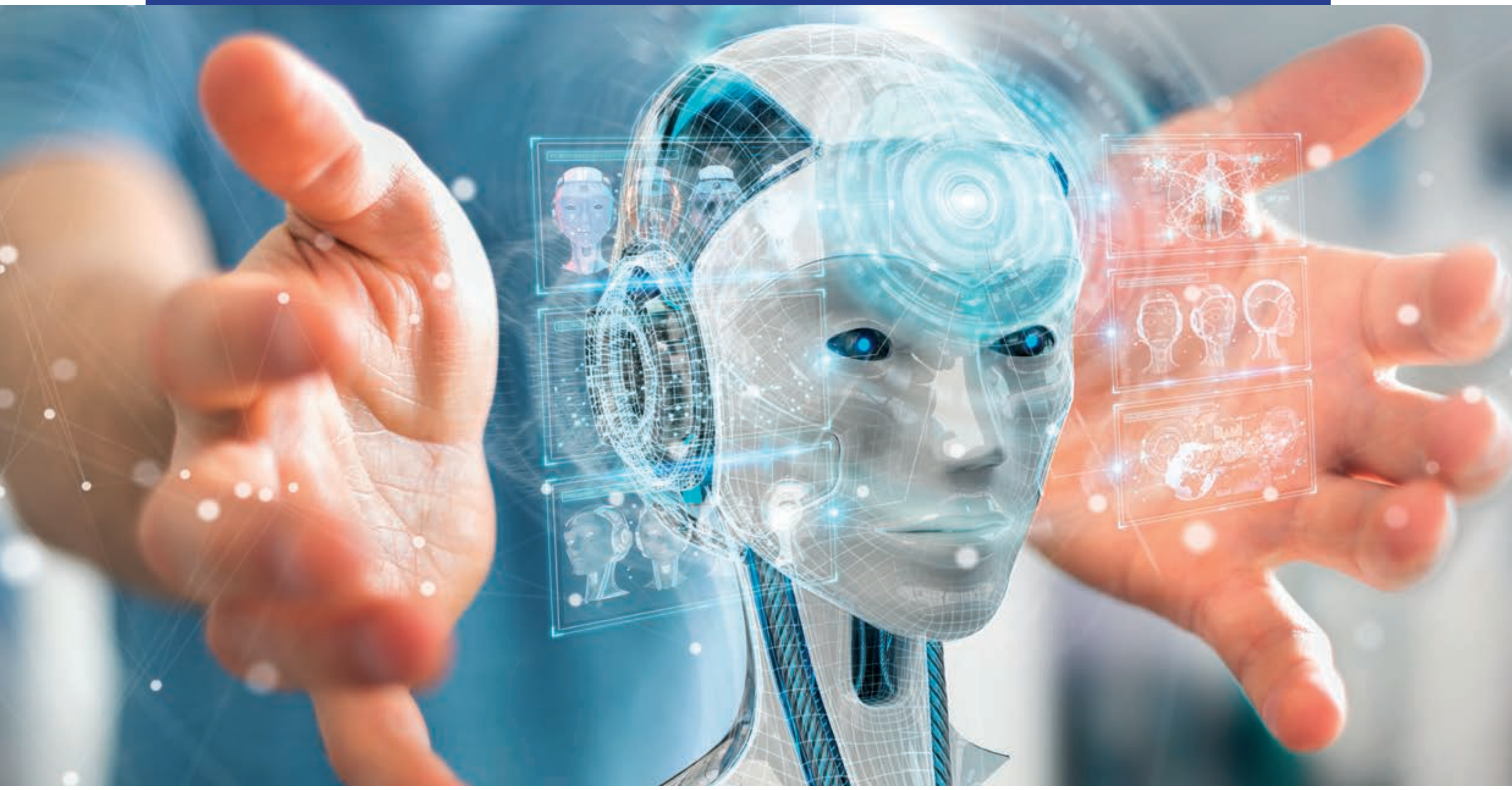

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THE GROWING ROLE OF ANALYTICS AND AI IN LENDING

Automation has brought tremendous benefits. For example, the industrial revolution was powered by automated or self-driven machines and power plants. Without automation, disruptive innovations such as the Ford Model T — the world's first affordable automobile — would not have been possible. Today, automation is taking on new forms, but the benefits and worries remain.

Artificial intelligence (AI) is enabling new industries to flourish but it is also changing the very nature of work. Reports abound of occupations that will be taken over by AI — from self-driving vehicles eliminating the need for taxi and truck drivers to AI routines replacing lawyers and doctors. Evidence from previous waves of automation show that more jobs are created than displaced, but usually, not in the same industry or location.

In financial services, automation offers tremendous benefits such as 24x7, always-on and we-never-close ATMs. AI promises to bring the same benefits to areas such as loan application and loan servicing. Take for example a 24x7 automated loan application process. Clearly, this offers benefits to both customers and lenders. But how can lenders be certain that the "machines" are making the correct decisions? Can lenders rest easily when the machines are making decisions? How will the humans know that the decisions are the correct ones? History gives us some cause for concern.

On January 3rd, 2019, the Australian dollar plunged an unprecedented three per cent to a 10-year low in just two minutes, and even more alarmingly, it dropped seven per cent against the Japanese yen. While it recovered quite quickly, within about 90 minutes, it took five weeks to determine what happened – put simply it was a combination of factors which humans and algorithms had not factored into their trading strategies. Momentum-based algorithms, operating independently and faster than humans, sometimes amplify problems. How might these unintended consequences play out in loan applications? In our example of a 24x7 world, the level of competition from various lenders might lead to machines being able to take "riskier" decisions about which loan applications should be approved and which should be declined.

Tackling the Concerns

Modern lending platforms, such as FinnOne Neo, have been designed with these issues in mind. Firstly, the system supports the building blocks of decision-making processes — rules and policy engines ensure that fine-grained business rules can be embedded in the system,

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sophisticated workflow and escalation systems ensure that exceptions can be handled and advanced analytics engines ensure that the consequences of decisions can be modeled in real-time. Not only does this ensure that the "right" decision is taken, it ensures that it is taken "every time", regardless of how the customer interacts with the lender — whether in the branch, on the phone, via a loan market place, through a mobile app or via an interactive chat with an AI. This ensures that customers get the same, high-quality service experience at every point of presence and every moment of truth. It's a bit like every customer meeting with the best staff member, the staff member that knows the bank's products intimately and has the best interpersonal skills, and even better, this staff member never makes a mistake, never sleeps and can handle a virtually unlimited number of customers at the same time.

One of India's leading non-banking financial companies (NBFC) has used the machine learning capabilities of Nucleus Lending Analytics to build statistical scorecards, which have improved their credit decision-making processes. Their business teams are using the platform for data analysis, model-building, and validation. This resulted in a 23 per cent reduction in non-performing loans (NPLs) by identifying the worst 31 per cent of the bad loans. The company also witnessed a 96 per cent average good rate in identifying the top 40 per cent of their loan portfolio, ranked by credit score, using the new scorecards. Accurate identification of the top 20 per cent of loan applications enabled the company to automate decision-making for such cases, resulting in higher efficiency and increased capacity for underwriting. F

THE TIME TO PLUG INTO THE LENDING ECOSYSTEM IS NOW

> "As new technologies become more sophisticated and levels of interconnectedness rise, the risks of disintermediation increase, but so do the opportunities to offer a wider set of products to a larger pool of potential customers"

In their ongoing search for competitive advantages, businesses are constantly looking for the best way to deliver the most attractive offerings to their customers. In some industries, this means gaining more control over their value chain or focussing on their core competencies and leveraging other specialists. For example, Kellogg's doesn't own the farms that produce the corn that goes into their corn flakes and in 2018, Apple announced that it planned to replace the Intel chips it uses in its Mac computers with its own chips.

While planting crops, building factories or designing microchips is very time consuming, creating new products in financial services, is much less time-consuming. That is not to say that the products are simple. Many financial services products are tremendously sophisticated. Perhaps this is why many banks white label or resell other companies' products, focussing their own efforts on their core competencies and relying on their partners for theirs. The use of partners doesn't end there — mortgage broker and independent financial advisor networks have long been used by financial services firms to extend their reach.

In lending, the rise of marketplaces is showing some interesting examples including the recent alliance between Kabbage — the USA-based lender — and Alibaba to provide a pay later programme for US buyers on Alibaba's B2B trade platform. San Francisco-based Affirm originated more than $1 billion in point-of-sale loans in 2017. LendUp, an online lender targeting the emerging middle class, aims to quadruple their credit card penetration for the underbanked community through a partnership with Beneficial State.

Regulators with initiatives such as open banking in Europe are paving the way for an acceleration of this ecosystem approach to financial services. As per a PwC report, the use of application programming interfaces (APIs) for account aggregation, better financial management, credit scoring, and integrated lending could be the key to getting the most out of open banking. In India, the Government's Unified Payments Interface (UPI) is a unique way to streamline payments. Kotak Mahindra Bank in India has launched its open banking platform to encourage the development of customer-centric solutions. India's leading public sector bank, State Bank of India launched their digital initiative YONO (You Only Need One) — a combination of lifestyle and banking services including over 60 e-commerce service providers, bank account opening, fund transactions, cashless bill payments, and loans.

What lenders need?

What might lenders need in order to compete and win in this new world? Let's start with creating the product — lenders may need to be able to assemble many parts of the product from many different "suppliers" in much the same way that a Boeing 777 airplane has three million parts from 900 suppliers. While the scale may be different, the challenges are very similar. Then the product needs to be taken to market, perhaps across an ecosystem of different partners, some white-labelling the product, some embedding it in a wider offering. Consider the accounting requirements needed in such a scenario especially if some of the "suppliers" are operating on a revenue-sharing model.

Even if we focus on the product being sold through the original lenders' own distribution network — branches, internet, mobile etc. — how does it control the "suppliers" component parts? Especially, if the code to execute those parts is not controlled by the lender but instead is running somewhere in the cloud? Sophisticated, flexible, and resilient APIs are needed, as a dynamic workflow and rules engines. This complex eco-system play requires a flexible, robust and modern system at the backend — one that can fully integrate with the myriad APIs and evolving landscape. Modern lending solutions, such as FinnOne Neo, provide the capabilities needed to thrive in the future, a future that is closer than we think. Driven by advanced technology and modular design, FinnOne Neo's flexible architecture, enriched API stack of more than 200 ready integrations, agile development methodology, and SOA enabled web-services enables banks to accommodate future enhancements easily. F

CASE STUDIES

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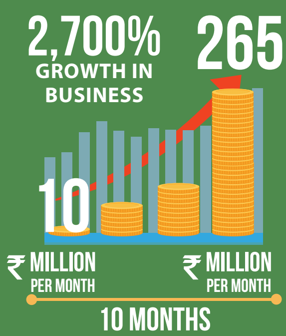
Case 1: Gaining Speed, Transparency and Growth with Digital



50% REDUCTION IN TIME FOR CREDIT PROCESSING

100% AUTOMATED CREDIT DECISION-MAKING

97% REDUCTION IN TIME FOR CREDIT ASSESSMENT AND APPROVAL

Roha Housing Finance Pvt. Ltd., a fast growing Housing Finance Company in India, provides faster, simpler and more transparent access to housing finance in India, especially focussing on first time home buyers and people in the middle and lower income groups. Roha wanted to use the power of technology to offer a 'customer-first' approach and adopt innovative ways for assessing credit worthiness. Roha implemented Nucleus Software's FinnOne Neo to automate and standardise the credit decision-making process, thereby eliminating the dependency on human judgment in credit underwriting, resulting in higher effectiveness in credit risk management. FinnOne Neo helped Roha incorporate a complex configuration of 900+ parameters, 150+ conditions and 100+ rules in the rules engine to ensure that the credit process is controlled and aligned to their business needs.

Case 2: Embracing Customer Convenience with Digital

99% REDUCTION IN 'TIME TO YES' FOR LOAN APPROVALS

85% REDUCTION IN 'TOTAL TOUCH TIME' FOR APPLICATION PROCESSING

Established in 1874, Bank of Queensland (BOQ) is one of Australia's leading regional banks. BOQ is a bank with a mission to prove that 'it's possible to love a bank'. BOQ embarked on a project to enhance the operational efficiency in processing loan applications and credit decision-making by digitising the existing paper-based documentation and automating the manual processes. The bank understood that customer expectations were changing and that quick turnarounds on credit decisions were highly valued by applicants. With Nucleus Software's lending technology platform implemented for home loan portfolio, BOQ introduced digital processing in lending, improved turnaround time and reduced the cost of loan origination. BOQ is using Nucleus' platform across more than 250 branches, call centres and broker support units, covering around 80 per cent of its business by settlements.

Case 3: Transforming Customer Experience with Digital

100% AUTOMATION OF THE LOAN MANAGEMENT PROCESS

80% REDUCTION IN OVERALL CREDIT APPROVAL TIME COMPARED TO TRADITIONAL PLAYERS

60% REDUCTION IN LOAN APPLICATION PROCESSING TIME

Launched in 2014, bob Finance is a Zurich-based FinTech company that provides financial products to the Swiss consumer credit market. bob Finance is backed by Valora, an independent retail group serving 1.6 million customers everyday through 2,600 retail outlets spread across Europe. Valora wanted to provide convenient, hassle-free and efficient online access to loan products, and with that vision launched bob Finance. bob Finance's core value proposition is underpinned by a fully digital omni-channel experience through "on-the-go" loan products with minimal branch visits. With Nucleus' lending technology platform's automation, digitisation and omni-channel capabilities, bob Finance achieved 100 per cent automation of the loan management process and became the first Swiss company to offer "on-the-go" loan products and short duration loans below $3000 while maintaining compliance with the Swiss regulatory authority (FINMA).

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LENDING IS TRANSFORMING BEYOND DIGITAL

TODAY'S CUSTOMERS EXPECT DIGITAL

TOMORROW'S CUSTOMERS WILL DEMAND MORE

IF YOU DON'T DELIVER IT - YOUR COMPETITORS WILL

FINNONE NEO GIVES YOU THE EDGE

- MAKE BETTER CREDIT DECISIONS FASTER
- OPERATE AT MACHINE SPEED, SAFELY
- LAUNCH CUSTOMIZED PRODUCTS QUICKLY
- TARGET NICHE MARKETS PROFITABLY
- PROFIT FROM ANALYTICAL INSIGHTS
- CREATE INNOVATIVE PRODUCTS FASTER

END-TO-END DIGITAL LOAN LIFECYCLE MANAGEMENT

10 TIME WINNER
WORLD'S BEST SELLING
LENDING SOLUTION
IBS

MODEL BANK
VENDOR AWARD
2016
CELENT

BEST LENDING TECHNOLOGY
IMPLEMENTATION OF THE YEAR
BFSI TECH
AWARDS 2018

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