

Revamping Auto Floor Plan Financing with Blockchain

Abstract

Lenders are required to constantly monitor the inventory of vehicles funded by auto floor financing loans in order to perform activities like disbursement, collateral monitoring, settlement, reconciliation, and so on. Banks today rely on frequent physical audits – which comes with challenges of its own – to track and monitor vehicle inventory, and initiate follow-up actions. This paper discusses how blockchain and telematics technologies can automate the process and help reimagine the operating model, thereby delivering significant operational and financial benefits to banks and automotive dealers.

The Current Auto Floor Plan Financing Landscape

Auto floor plan lenders must ensure traceability of the vehicles financed by them, as a part of prudent risk management. This is achieved by tracking the location and condition of each vehicle across the loan lifecycle through frequent physical audits. Based on the outcome of such audits, lenders may trigger actions such as disbursement, collateral monitoring, settlement, reconciliation, and so on. For example, if the lender stipulates that vehicles must reach the dealers' location as a prerequisite to disbursement, then a physical inspection is required to validate this. Audit teams are deployed to conduct physical inspections of each dealer location, which requires significant time and resources.

Furthermore, unsold and deteriorating inventory depreciates the value of the vehicles and can potentially result in write-downs. Manual data capture coupled with miscommunication on vehicle status can result in reconciliation errors due to which lenders may fail to trigger accelerated repayments or recall the loans. The need for physical audits also delays the timely release of funds, thus affecting the cash flow of dealers. Additionally, ensuring that dealers utilize the sale proceeds to repay outstanding loans and do not divert them for other purposes poses challenges to lenders.

Technology to the Rescue

Addressing these challenges requires a system that monitors vehicle conditions in real time and facilitates the sharing of vehicle information between dealers, lenders, and original equipment manufacturers (OEMs) to ensure automatic reconciliation. We believe that a combination of blockchain technology and telematics can address this. Vehicles equipped with telematics technology can stream data on various parameters like GPS coordinates, engine performance, mileage, temperature, speed, steering angles, acceleration and braking frequencies, and so on. Auto financiers can analyze this data to gain insights on the location and physical condition of a vehicle, which will greatly ease the monitoring process by eliminating the need for physical audits. The auditors will only need to step in to handle exceptions and to validate the records, thus considerably reducing the time and resources required for monitoring.

Storing transactional and operational data in a shared blockchain ledger accessible to all the stakeholders—dealers, OEMs and lenders—will ensure transparency and create an immutable record of transactions. This will eliminate conflicts of

interest and human errors as all data is automatically captured through telematics and immutably stored on the blockchain ledger. For example, when a dealer sells a vehicle, the lender can detect it in real time and check if the proceeds have been paid into the loan account against that vehicle. In case the dealer has not deposited the sale proceeds into the loan account, the lender will be able to take corrective action at the right time, which in this case would be a follow-up visit by an auditor and an accelerated recall of the loan.

Reimagining Auto Floor Plan Finance with Blockchain

Using blockchain and telematics, processes related to the receipt of inventory, loan disbursement, monitoring, and sale to end customer can be made more transparent, which will help reduce credit risk and allow banks to lend on better terms. It will also improve dealers' cash flows as lenders will be in a better position to quickly sanction and disburse incremental limits. Figure 1 depicts the high-level architecture of a blockchain and telematics based system that banks can adopt to automate the process.

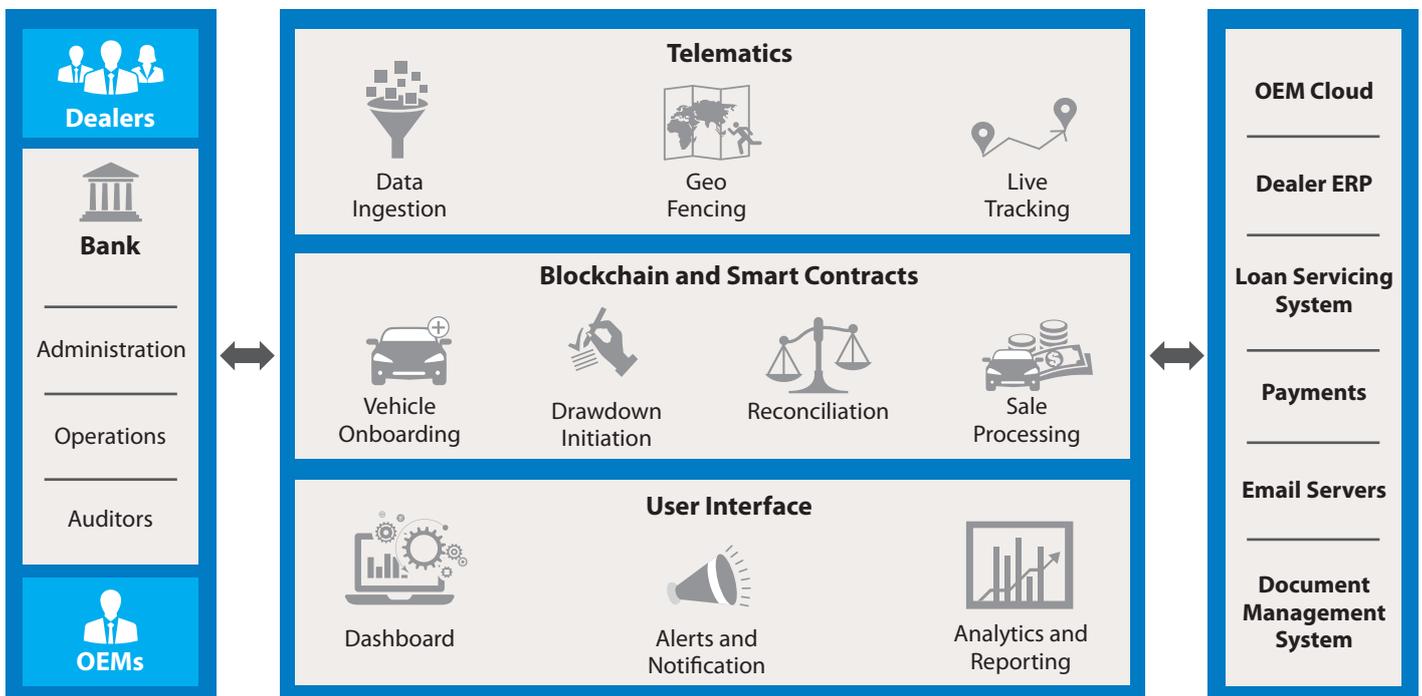


Figure 1: Business Architecture

On the receipt of a purchase order from the dealer, details like unique vehicle identity number (VIN) of dispatched vehicle, dealer location, loan facilities are placed on the blockchain ledger. Information from the telematics device installed in the vehicle is also recorded on the blockchain ledger. The GPS information available on the blockchain ledger will allow lenders

to ascertain if the shipment is in transit or has been delivered to the dealer triggering execution of a smart contract to automatically transfer funds to the OEM. Delivered vehicles are then locked into a geo fence by the system ensuring sufficient inventory against the availed credit.

A set of business rules can be defined to identify events like sale of vehicle, damage to vehicle or inventory becoming obsolete and initiate appropriate action through the blockchain ledger. For example, a vehicle that breaches the geo fence of the dealer location and does not return for a considerable period of time can be identified as a sale which then triggers the smart contract to recover the loan amount from the dealer's account. Similarly, other monitoring processes can be identified and action triggered without human intervention.

Getting Ready for the Transformation

Clearly, the way forward for banks lies in leveraging a combination of blockchain and telematics technologies to make the monitoring process less cumbersome and more effective. However, blockchain adoption will pose some challenges.

Knowledge gap: There is still a lack of understanding on the working of blockchain, especially in the non-banking sector. This hinders exploring new use cases for automation and reaping synergies. Lenders must take the lead in educating other members of the ecosystem on the advantages of leveraging blockchain technologies.

Integration with internal systems: Lenders may face difficulties in integrating blockchain ledgers into legacy systems. Additionally, lenders will need to establish a common protocol to share data on blockchain.

Resistance to change: Blockchain adoption to reimagine the auto floor financing process requires a considerable shift from the traditional way of doing things, especially in the case of dealers. Lenders will need to convince other stakeholders of the potential of blockchain to unlock exponential value for all the stakeholders.

However, the benefits of blockchain far outweigh the difficulties and banks would do well to initiate preparatory steps to full-scale implementation.

- Consult all the stakeholders on various critical aspects such as the consensus mechanism, platform, node design, APIs, and so on. For banks that have advanced further along the blockchain journey, the existing infrastructure can be leveraged and customized for auto floor plan financing.

- Define the business logic to execute the transactions through smart contracts in funding and monitoring processes to ensure the desired level of automation in the workflow.
- Run a pilot project with a single dealer and OEM to understand and resolve teething problems. This can help in strategizing the roadmap to scale the solution to multiple dealers and OEMs and integrate existing systems.
- Build a cognitive, analytics-based framework with self-learning capabilities to process the data from telematics and derive valuable insights; this will help reduce the human intervention required as the model matures.

Blockchain technology is fast gaining acceptance in the banking and financial services industry with many banks successfully implementing several blockchain based use cases. Financial institutions must convince stakeholders in the auto finance segment of the benefits of blockchain technology to get their buy-in and facilitate the implementation of a simpler, faster and better process.

About The Authors

Vivek Iyer

Vivek Iyer is a domain consultant with TCS' Banking, Financial Services and Insurance (BFSI) business unit. He has around 11 years of experience with expertise in the commercial and consumer lending space. Prior to joining TCS, Vivek worked in the commercial lending division of leading multinational banks and in product development for Oracle's Flexcube suite of financial solutions. He holds a bachelor's degree in computer engineering from the University of Pune, India, and an MBA degree in finance and corporate strategy from the Indian Institute of Management, Indore, India.

Amit Bhamare

Amit Bhamare is a Domain Consultant with TCS' Banking, Financial Services and Insurance (BFSI) business unit. He has more than eight years of work experience across commercial banking, project finance, and consumer finance. Bhamare has previously worked in the commercial lending division of leading multinational banks. Bhamare holds a bachelor's degree in production engineering and an MBA degree in finance from the University of Pune, India.

Contact

Visit the [Banking & Financial Services](#) page on www.tcs.com

Email: bfs.marketing@tcs.com

Blog: [Bank of the Future](#)

Subscribe to TCS White Papers

TCS.com RSS: http://www.tcs.com/rss_feeds/Pages/feed.aspx?f=w

Feedburner: <http://feeds2.feedburner.com/tcswhitepapers>

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at www.tcs.com