Aadhaar Enabled Lending System to Boost Micro Finance and Consumer Durable Loans

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Beginning of the 21st century saw major technological revolutions with laptops bringing the World Wide Web to homes, smart phones not only replacing cell phones but also cameras and scanners, online conveniences to book, buy/sell and pay, thus, reducing the need of brick-and-mortar stores, etc., thereby laying a foundation for Digital India. India is the fastest growing major economy in the world and Government's thrust on digitization is that multiplying force. As per Morgan Stanley, India's GDP could reach $6 trillion and financial and consumer sectors to hit $1.8 trillion and $2 trillion respectively by 2027. With the ever growing need to digitize and upgrade the technologies, it is imperative for a vast, diverse and fast developing nation like India to be at the forefront of digital revolution. This will maximize the benefits of economic development that are targeted to reach the remotest locations and touch every Indian's life. Government of India having strongly realized the criticality of introducing and executing the state-of-the-art technological advancements and therefore, has speed tracked the process of digitization.

Following the initial thought process, initiatives like the Direct Benefits Transfers (DBTs) belonging to various government welfare schemes, and employing biometric and demographic database to have the Unique Identification based id were taken. And that was how Aadhaar was conceived. Aadhaar, with its de-duplication and biometric authentication, was able to weed out fake beneficiaries, leakages and pilferages from various government welfare benefits schemes. India has been taken over by storm with digital revolution and today, 1.33 billion Indian population is warming up to digitization. The National Payments Corporation of India (NCPI) has registered 145.46 million transactions with a value of ₹ 131.44 billion on its digital payment app named UPI.

The consumer durable market which was ₹ 812 billion in FY16 is now projected to grow to ₹ 1,340 billion by FY20. This growth will mostly be driven by middle income households, shortened replacement cycle, and rise in disposable income. As per the Investment Information and Credit Rating Agency of India Limited (ICRA), the consumer durable loans portfolio is expected to be ₹ 700 to ₹ 750 billion.

As per annual publication of NABARD report on Status of micro finance in India, over 10 crore households – through more than 8.5 million Self Help Groups (SHG) – have nearly ₹ 616 billion outstanding loan. EShakti, a pilot project of digitization, has been started by NABARD for capturing financial and non-financial information of the SHG.

However, micro finance and consumer durable loans have not really proven to be attractive propositions for the Banks as these are 'small ticket, large volume' loans which don't justify the amounts of resources involved in processing them. This is where the JAM Trinity, Blockchain, Artificial Intelligence, and Machine Learning can be put to good use by the Banks. Startups like Fin-tech and Peer to Peer lending companies are already using this technology to lend anytime anywhere. And to keep up with the pace, there is a strong requirement that the Banks also

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employ these technologies and upgrade their lending behaviors for a profitable balance-sheet.

Today, JAM – Jan-Dhan, Aadhaar and Mobile trinity – is the key driver for India's digital revolution. This trinity was also vital in migration from Aadhaar based DBTs to Aadhaar Enabled Payment System (AEPS). Further employing the security features of Aadhaar, this paper talks about the **Aadhaar Enabled Lending System (AELS)** which blends the benefits of Aadhaar biometric authentication along with the new age technology like Blockchain, Artificial Intelligence, Big Data Analysis and Machine Learning.

Talking about the Bank's lending cycle which involves rigorous work in all its stages of customer identification, credit evaluation, sanctioning of loan, documentation, disbursement, monitoring, repayment and recovery, **Aadhaar Enabled Lending System** or **AELS** envisages to digitize the entire lending cycle thereby reducing time, reducing cost, and providing 'Any Time Any Where' lending, all while maintaining world-class security and authentication of the data.

Banks with well establish network of branches, existing state-of-the-art infrastructure, and a massive customer base have a high caliber to explode the micro finance and consumer lending space. Once the **AELS** infrastructure is in place, the lending scope can also be expanded to retail credit loans like Car Loan, Housing Loan, Mortgage Loan, etc.

AELS Model

Any lending facility available can be availed only when the identity of the beneficiary is verifiable. Though, we have had a range of identity verification cards such as PAN Card, Voter Id, Driving License, and Passport etc., all of these have the potential to either be easily faked or the inability to be easily verifiable. Aadhaar on the other hand, with its biometric de-duplication and two-factor authentication, is both identifiable and verifiable. This character forms the backbone for the proposed **Aadhaar Enabled Lending System (AELS)**.

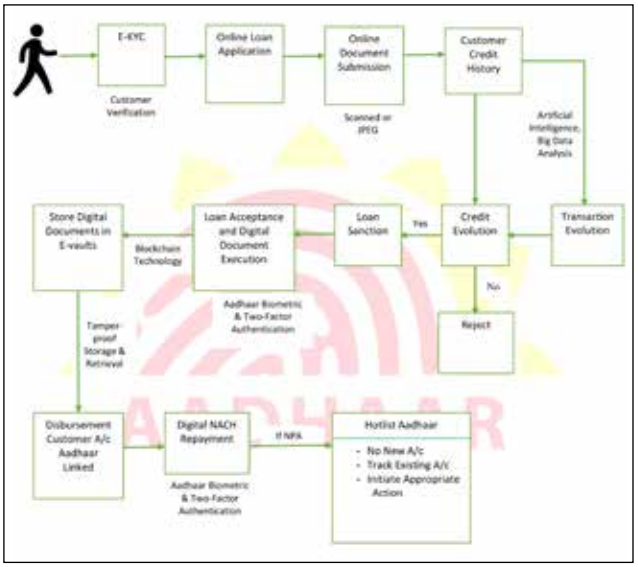
AELS model can be initially used for small ticket loans ranging between ₹ 5,000 and ₹ 1,00,000. Usually, all the micro finance and consumer durable loans will come in this bracket. Banks can leverage the socio-economic conditions like growing middle income families, and shortening of the product replacement cycle to their advantage and can make big in roads in micro finance and consumer durable loans.

The Process and Mechanism:

Usually, huge volumes of paperwork are executed to establish an authenticated lending contract. This uses up a lot of the Bank's resources and time. However, with the presence of Biometric Authentication Device supported by reliable internet connectivity, the digital authentication of loan documents can be completed in significantly reduced time. Bulky loan documents like mortgage paper, loan agreement papers, etc. can be securely stored in E-vaults using Blockchain ledger so that the documents cannot be tampered with, altered or deleted.

The lending system will still follow the same set format just that making the process Aadhaar Enabled will shorten the duration and resources used, thus, making it a cost-effective proposition.

Schematic Representation of AELS Process



Working of the Aadhaar Enabled Lending System following the current lending process

1) Customer Verification and application

Under **AELS**, the customer identification will take place by the simple and quick process of two-factor Aadhaar verification. It also makes it easier for the customers to apply for loans by just submitting their documents online in a click.

2) Credit Appraisal and Sanction

Customers' credit history is a vital information that is required while processing the loans. This information is provided by various Customer Credit Rating Agencies that are designated by the Banks. With Aadhaar coming into the picture, the risk rating scores that the credit rating agencies will offer are bound to have dot precision and will reflect the true picture of the customer's credibility. These credit reports will be devoid of any omissions and exclusions that are likely to happen in case of PAN card or any other identity card being used. Artificial Intelligence, Big Data Analysis and Machine Learning will be used to understand consumer behavior and spending pattern following which the lending can be tailor made for the customer. Pre-approved loans can be made ready in advance for customers' acceptance and disbursement.

3) Document execution

Loan documents can be easily executed online by the customer using the two-factor Aadhaar authentication process. These digitally executed documents can then be stored in E-vaults using Blockchain technology, thereby doing away with the need to personally visit the branch for document execution. This methodology will also support the 'anytime, anywhere lending'.

4) Disbursement

Under **AELS**, the consumer durable loans can be directly disbursed to the customer's account. Alternatively, Banks can also choose to have tie-ups with retailers or e-commerce websites to facilitate direct transfer of loan amount into their account on behalf of the customer.

5) Repayment

Upon the execution of the National Automated Clearing House (NACH) forms signed by the customer, the **AELS** allows the Banks to set up the Aadhaar authenticated digital debit mandate. This will ensure timely repayment of loans.

6) Recovery

At present, the large volumes of non-performing assets or NPAs is a matter of grave concern for the Banks. The colossal damage that they cause to the banking industry and the financial infrastructure of the country is unimaginable. Fighting this embroils lengthy legal procedures that blur the light at the end of the tunnel and further add to the woes if ultimately the defaulters are rendered free. With **AELS** though, the customer's Aadhaar number will be Hot-Listed in the central database making the defaulting customer easily and quickly identifiable. The Banks can then take appropriate action by tracking the defaulter's alternate accounts and requesting the respective banks to put a temporary bar on any banking services or transactions, and disallowing the opening of a new bank account until all the dues are cleared. All the Banks can, perhaps, agree upon a healthy co-operation, thereby coordinating to keep a track of the defaulters' movements.

Infrastructure

The infrastructure needed for **AELS** can be divided into three categories: Public, Government and Banks.

1) Public

It was in 2009 when the first Aadhaar Card came into being. And since then, in less than a decade, over 1.19 billion Aadhaar cards have been issued and over 14.68 billion authentication transactions have been done[5]. Government is now aiming to have 1 billion UIDs, 1 billion accounts and 1 billion mobile

phones. As of now, there are 307.3 million Jan-Dhan accounts and nearly 650 million mobile phone users, of which approximately 350 million are smart phone users. This number is likely to go up to 650 million by 2018. Currently, the internet penetration is going at nearly 30 to 40% of the population. Indians are getting familiarized and acquainted with the two-factor authentication process of Aadhaar and are using them in their day-to-day life. Aadhaar based fund transfers and withdrawals has become a regular part of the daily routine for millions of Indians.

2) Government

With the Demonetization and GST implementation under its belt, the Government is now raising the bar for advanced digitization of India. NCPI has been on the forefront in developing various payments apps like UPI, BHIM, and now the merchant payment app BHIM-Aadhaar. These apps are touted to drastically change the way that transactions and money exchange have been taking place.

With the Government's intentions to make Aadhaar card as the Multi-Purpose National Identity Card – a single thread connecting various database – it will be mandatory for all Indian citizens to own an Aadhaar card for various official purposes like opening a bank account, filing the Income Tax, and applying for PAN card and Driving License among others. As of now, the deadline for linking Bank accounts and mobile numbers with Aadhaar card is 31st March, 2018. Following the suit are RBI and TransUnion CIBIL, RBI is urging Banks to use Aadhaar based E-KYC for customer identification, whereas the Credit Bureau of India Limited, now TransUnion CIBIL, which was established in 2000, with a purpose to obtain credit history of individuals has now begun to use Aadhaar in order to get clear and authentic information of a person's credit history and scores. Earlier, any other identity like the PAN card, voter's id, passport, etc. were used.

3) Banks

Banks are aware that digitization is the way ahead to a prosperous and profitable financial future, and are already incorporating technology in various banking operations to reap benefits of cost-efficiency, time-efficiency and enhanced consumer experience.

Today, with the help of E-KYC, opening a savings bank account takes a record time of flat 6 minutes only with minimum involvement of personnel. Knowledge of individual's credit capacity and history has enabled many banks to grant pre-approved loan facility. Technology has also facilitated the Banks to automate various banking operations. For example:

- HDFC Bank and SBI have launched chatbouts to handle customer queries.
- SBI led BankChain community was formed in February 2017, which now has 30 banks as its members. This community looks at exploring the use of Blockchain Technology in various banking functions ranging from KYC, loan syndications, trade finance, secure documents, cross border finance, peer to peer finance, etc.
- ICICI Bank and Yes Bank are also tying up with fin-tech firms to gain access to technologies like Artificial Intelligence.

SWOT analysis of AELS

Though technology has in the past, continues to bring us great ease and security of conducting business, thereby enabling us to achieve path-breaking systems and solutions, like every good thing, this too can have certain nuances that may mar the benefits.

Let's have a look at the probable drawbacks or threats/ weaknesses along with the commendable benefits or strengths/opportunities that **AELS** will encompass:

Threats and Weaknesses

- **Possible invasion of customer privacy**

AELS will have undeniable and complete access to the customer financial history in order to check

the credit worthiness of individuals. Though this is similar to the TransUnion CIBIL score, the catch 22 situation here is because Aadhaar is also linked to various personal and social information of a customer which may not necessarily be required for making a lending decision. This privy information has to be safeguarded.

- **Data Security**

AELS will have an information pool comprising of customers' financial, biometric and demographic information. This data if leaked or hacked can have disastrous consequences – both financial and social. This is the ongoing concern that the Government and the relevant authorities are facing. It is imperative to have tight security checks and anti-hack technologies in place to combat such foreseeable breaches in customer data management.

- **Identity Theft**

Unfortunately, Aadhaar card with all its advanced biometric technology, is not immune to theft of information. Fraudsters can make use of this information to trick the Banks into lending them, thereby incurring incomprehensible financial losses to both – the Bank and the customer.

- **Excessive Borrowing**

Though the **AELS** can reduce the time taken in completing the sanctioning of a loan, there will still be a determinate amount of time taken to update the credit information of that customer into the system. The time lag between the fast processing of loan and time-taking process of data updation can allow a customer to avail loans from multiple sources (banks), which will lead to him borrowing more than his credit or repayment capacity.

- **Financial Illiteracy**

Even though the Banks have been around for many years now providing unsurmountable services and facilities to the public, it is only in the recent past that a majority of the public has started to enter into the formal banking environment. It can be safely said that people – consumers and end users – have just begun to understand the nitty-gritties of fundamental banking operations, the terms and conditions of availing loans, and the dire consequences of defaulting the repayments. Considering this level of financial illiteracy, the very idea that **AELS** promotes ease of lending and borrowing can be misconstrued by the borrower as "easily available money". Customers may borrow loans without properly understanding the terms and conditions resulting in wasteful spending thus indebting themselves.

- **Mis-selling fuelled by Power**

There could be cases of malpractice where the Banks can either lure the customers into taking unnecessary loans or forcefully getting them to accept the Bank's terms and conditions on repayments. Being unaware of their rights due to the prevailing financial illiteracy as discussed in the paragraph above, the customers can be taken for a ride by the banks. And considering the time taken to resolve such matters in various forums, it will be a strenuous one.

Strengths and Opportunities

- **Faster execution**

Considering that the entire loan process will be digitized and automated, **AELS** will ensure that the processing time is significantly reduced. **AELS** will set the ball rolling for friction-less digital lending.

- **Profitable**

As mentioned earlier, **AELS** will make the entire lending process both, time and cost effective. But, the biggest impact this will have is that the Banks will now be able to explore the niche market of consumer lending and micro financing. The ample amount of time on their hands and the easy-resource handling techniques owing to digitization and the two-way authentication by Aadhaar will enable them to process and grant larger volumes of loans per day.

This is bound to boost their balance sheet and profit statements.

Digitization will also allow Banks to have tie-ups with retailers – both e-stores and brick-and-mortar ones – for faster credit delivery and ensuring proper end use of funds.

- **High Security Processing**

AELS will guarantee secured data execution, safeguarded financial transactions, and authentic information recovery by employing digitization and technological advancements like:

i) Using two-factor Aadhaar authentication process for digital execution of loan documents.

ii) Employing Blockchain technology for securely executing, storing and retrieving data without the fear of the digital documents being manipulated or duplicated.

iii) Commissioning Aadhaar Card Hot-listing to check if any loan defaulters are routing their financial transactions via another bank. This will help reduce the loan defaulters significantly.

- **Customer-centric products**

As **AELS** will render the entire process of sanctioning loan will be made online, the customers will be able to avail loans at their convenience, thus sparing them the tedious paper work and numerous visits to the Bank.

AELS will facilitate financial product pricing on the basis of the credit history of customers, thus making banks more sensitive to our customers.

Also, upcoming technologies like Artificial Intelligence, Big Data Analysis and Machine Learning will help in understanding customer behavior thus, building tailor-made financial products to suit the customer requirements.

Customers using their credit cards to make payments will be recommended to use **AELS** instead in order to avail credit at competitive interest rates from their banks, thus saving on heavy interest charges and penalties.

- **In-line with Government Goals**
  - Digital India initiative will get a considerable boost by commissioning technological advancements in the banking industry and simultaneously upgrading our skills as bankers to keep pace with the developing economy.
  - Purchasing power of customers will increase owing to the "any time anywhere borrowing or lending" made possible by **AELS**. Consumer goods and associated industries will be uplifted which will help further fuel the Indian economy, thereby increasing the nation's GDP.
  - Along with helping curb the floating black money as a majority of financial transactions will be routed through Banks, **AELS** will also help improve customer creditability and increase their chances of availing loans.

Conclusion

Technology is the game changer in any industry or business. Today, with revolutionizing technologies like Artificial Intelligence, Big Data Analysis, Machine Learning and Blockchain emerging as path-breaking solutions to information quick-fixers, we have handfuls of ways to revolutionize our Banking industry. While the complete potential of the upcoming technologies is yet to be fully understood, making use of our current understanding of them leaves us with complex experience which is both dwarfing and overwhelming at the same time.

As reported by Forbes, banks in India have witnessed a radical change from conventional banking to convenient banking. With the Government promoting digital banking aggressively, and the launch of payments interfaces apps, banks are aiming at providing "fast, accurate and quality banking experience to their customers."

Aadhaar Enabled Lending System (AELS) is a derivation of such masterpieces of Information Technology. It is a concept which blends Aadhaar with the emerging breakthrough technology and creates an ecosystem which is touted to revolutionize lending and borrowing in the Banking domain. With the Government spear-heading its way up in the development arena, it is critical that the Banks realize the domineering effects of digitization and automation. The future will not just be run but, governed by technologically-empowered tools. To be able to master that high-intensity environment in the future, why not embrace **AELS** today to promote digitization of the Bank's lending methodology.

A journey of thousand mile beings with a single step. Let's start ours today.

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