CATALYST

Inclusive Cashless
Payment Partnership

MAKING
5-MINUTE INCLUSIVE LOANS
A REALITY WITH
"INDIA STACK"

LEARNINGS FROM TWO EXPERIMENTS
OCTOBER 2016

USAID
FROM THE AMERICAN PEOPLE

ispirt

Dalberg

Foreword

In November 2015, the Government of India (GoI) and USAID formalized an exciting partnership to promote interoperable digital payment solutions in India, with the objective to expand merchant acceptance and build consumer confidence towards greater adoption and use of such solutions. Over the past year, this partnership has sponsored a program, which has implemented a set of insightful and innovative experiments with various payment stakeholders.

While our focus has been on consumer-to-business (C2B) payments, these ground level experiments have underscored access to working capital as a critical need for merchants, and potential precursor for digital payment acceptance. The hypothesis here is that easier availability of capital through online lending will be a catalyst to drive adoption of digital payments, both as a way to repay the loan, and accept consumer money. If merchants are required to repay loans digitally (and perhaps also pay their distributors digitally), will this induce them to accept digital money so they don't have to convert cash received from customers to electronic value?

These specific experiments conducted with iSpirt are a first step in answering this question. Yet, they have generated powerful and actionable insights. First, they validate the enormous potential of India Stack in digitizing small businesses and opening economic opportunities to the poor. Second, they highlight the need for greater merchant awareness and compelling value propositions to drive merchant adoption. Third, they suggest further regulatory changes and policy-based incentives will be needed to harness the full potential of the "India Stack" and unleash financial inclusion at scale.

More work needs to be done to tie these experiments to other parts of the ecosystem and use online lending as a driver for C2B digital payments. Leveraging state-of-the-art technologies like UPI in partnership with NPCI will be one such promising direction to explore in the future. We're grateful to the ISpirt team for pioneering this important study and look forward to a continued collaboration to test, learn and scale merchant centric payment innovation. We are also indebted to all the participants – namely, Capital Float, Eko, Axis Bank, Aditya Birla Finance Limited, Suvidhaa, ZestMoney, eMudhra and Khosla Labs – for contributing to these learnings by being responsive and transparent on their experience. I'd also like to thank Dalberg for their exceptional strategic leadership in making this possible.

Finally, I am thrilled to announce the next phase of the GoI & USAID partnership by introducing CATALYST: Inclusive Cashless Payment Partnership. CATALYST is an operational initiative, housed in IFMR LEAD, focused on identifying business models and incentives for transitioning merchants and consumers to digital. Given numerous stakeholders in the payments chain, scaling new digital solutions requires solving multiple coordination problems, which in turn necessitates a holistic, ecosystem-based approach. We intend to follow this path and coordinate multiple technology, policy and institutional experiments to move the needle on digital payments.

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1.0 Summary

It is well acknowledged that access to formal credit remains an important unmet financing need in India. On the borrower's side, there are two key issues – (i) their inability to meet banks' traditional lending criteria, and (ii) a mismatch of available credit products with the financing need. On the lenders' side the high cost of lending (driven by high customer acquisition/ onboarding cost), and low revenues (e.g. through interest payments on small ticket loans) lower the overall profitability of serving the low income segment, limiting the value proposition for traditional financial institutions.

Broadly speaking, there are two levers that can help unlock credit for low income customers (and broader financial inclusion in the country) – (i) using proxies to assess credit worthiness, and (ii) using technology to reduce the costs to serve the financially excluded. The emergence of digital payments, and the creation of digital data trails (e.g., transaction histories) provide a unique new source of information to unblock credit services for this segment. Secondly, replacing costly, and time consuming procedures such as collection and storage of paper records (bank statements, ITR, KYC, etc.), scrutiny of "wet signatures", and secure handling of physical cash, can reduce the overall costs to acquire and serve low income customers. This is where the India Stack project is relevant.

2.0 About India Stack

The genesis of India Stack can be traced back to the Government of India's Open API Policy (2015). The policy stated that the Government envisaged making its services digitally accessible to citizens through multiple channels, such as web, mobile and common service delivery outlets. Further, the Digital India campaign launched by the Prime Minister in 2015 reinforced India's focus on digitization and build-out of digital infrastructure as a key strategic priority. In order to facilitate this process, the iSPIRT[1] team conceptualized the "India Stack," a set of powerful open and programmable capabilities.

It is designed to have 4 distinct layers

- A **presence-less layer** where a universal biometric digital identity allows people to participate in any service from anywhere in the country;
- A **paper-less layer** where digital records move with an individual's digital identity, eliminating the need for massive amount of paper collection and storage;
- A **cashless layer** where a single interface to all the country's bank accounts and wallets democratizes payments; and
- A **consent layer** which allows user data to move efficiently and securely based on user consent and control;

Each layer of the India Stack has a specific technology - Aadhaar authentication and eKYC, eSign and Digilocker, Unified Payments Interface, and consent architecture - with corresponding public APIs, under India's Open API policy.

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[1] iSPIRT is a "think tank" dedicated to counseling and endorsing existing Indian software product companies

3.0 Overview of Pilots

This note captures the learnings from two proof of concept projects focused on disbursing small ticket size loans to financially underserved communities by using digital data trails as proxies for credit appraisal. Both these projects leveraged one or more layers of the India Stack, which, makes it easier for digital pioneers to run faster, reach more people by enabling a paperless, presence-less, cashless transaction experience. These projects thus take the first step in achieving the vision of providing small ticket, collateral free, low interest institutional credit to the financially underserved in India, thus building on the JAM trinity (i.e., functionalities enabled by the consolidation of Jan Dhan, Aadhaar and mobile phone), the vision of Digital India and India Stack.

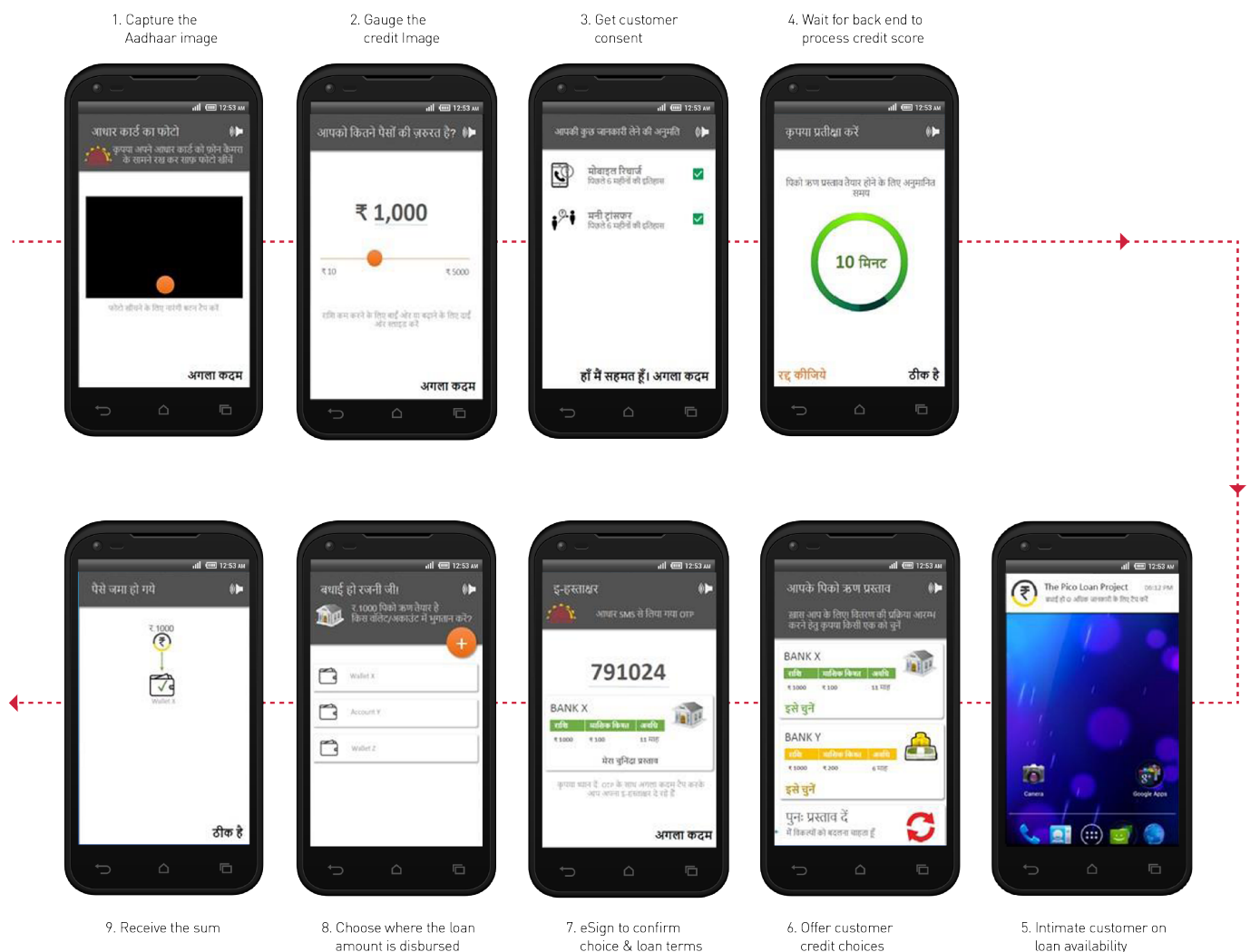Figure 1: Base model on which the projects were built
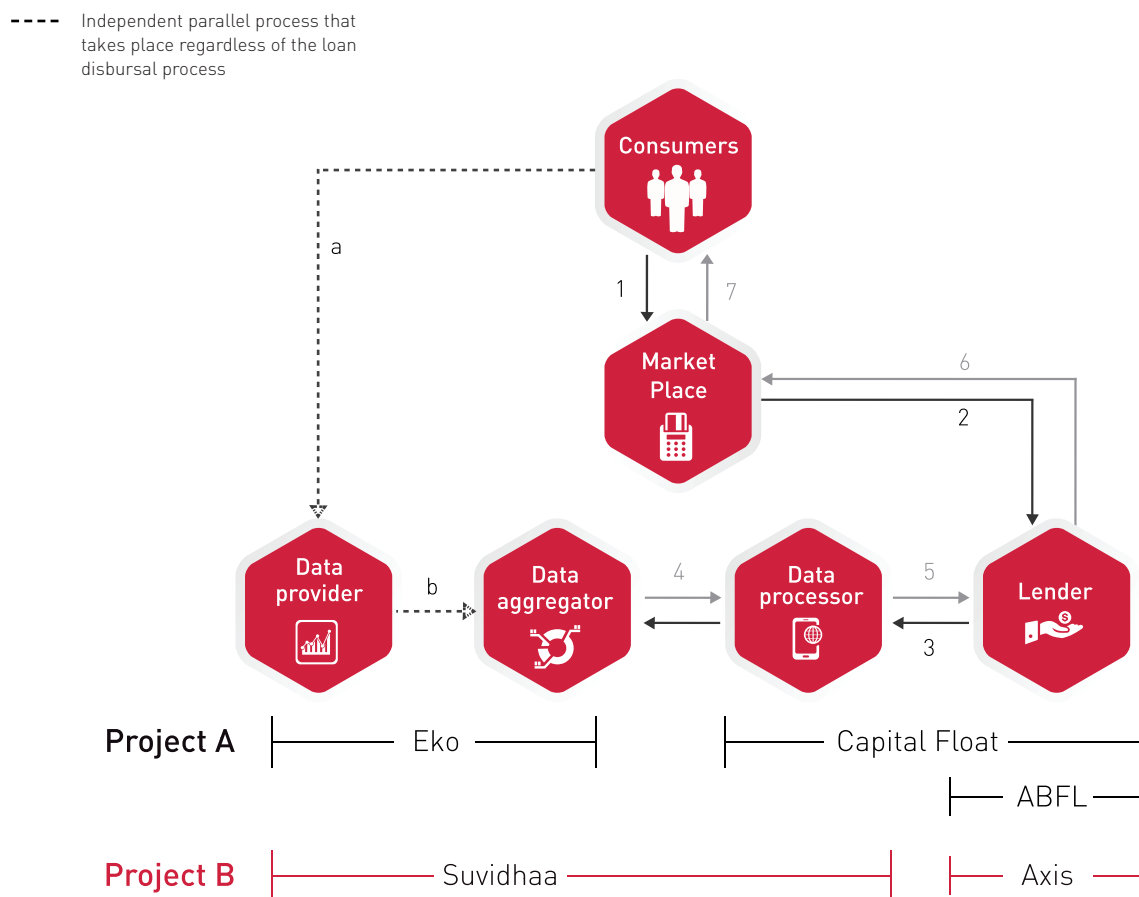
a) Consumers carry out digital transactions which are stored/archived by the data provider
b) Data providers may share this data trail with data aggregators

1. Consumers approach the market place to request for a loan and provide informed consent to share data with lenders
2. The market place player relays this request immediately to lenders
3. Lenders request the data aggregator to share consumers data
4. The data aggregator shares consumers data for processing (processing may be done by lenders or third parties)
5. Processed data reaches lenders who can now underwrite loans after assessing credit worthiness
6. Lenders provide consumers with laon offers through the market palce
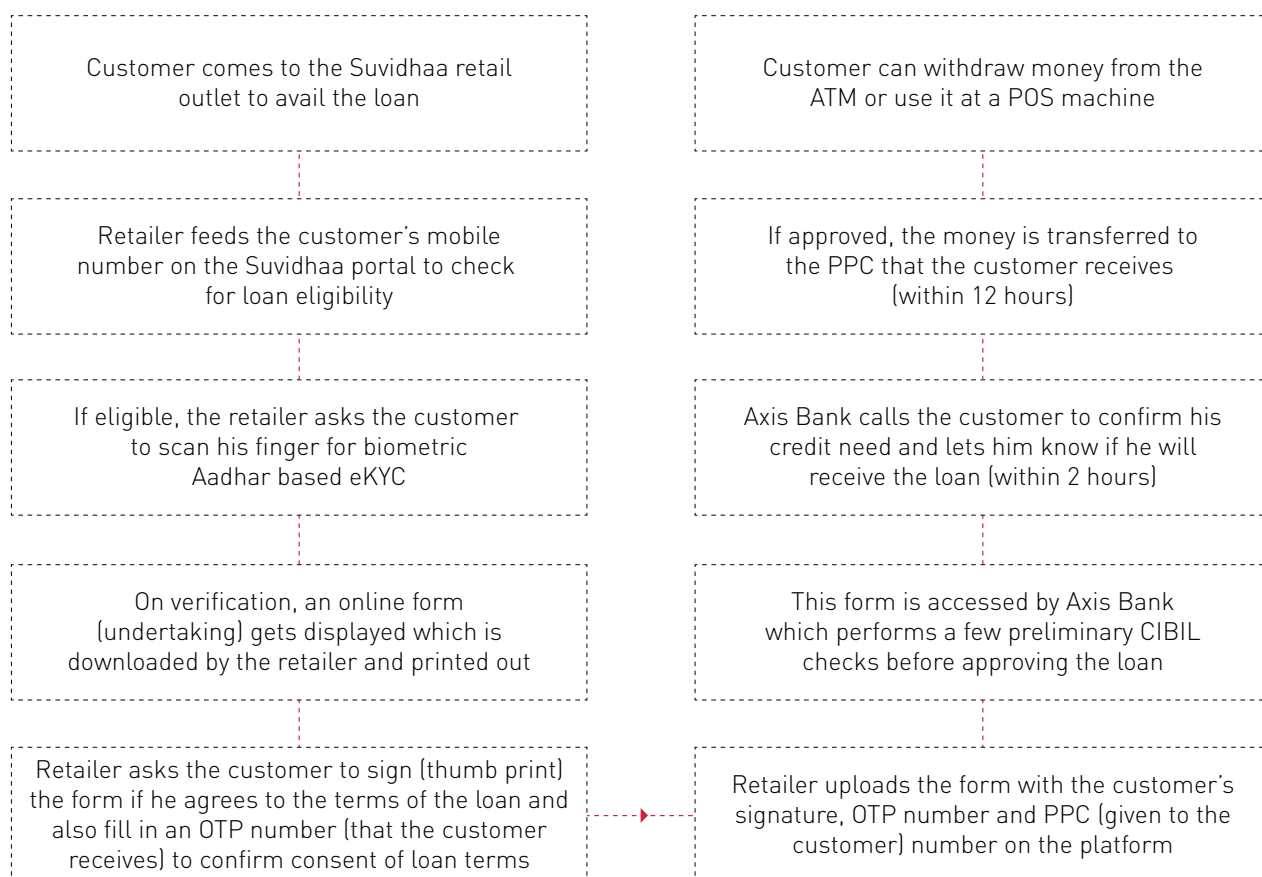7. Consumer receives the loan (digitally)

The first study referred to as Project A throughout this document brought together Capital Float (marketplace/lender), Aditya Birla Finance Limited (lender) and Eko (remittance data provider). Eko merchants who carried out remittance based transactions through the Eko wallet received small ticket size loans within minutes of applying for the loan on a mobile-based app created by Capital Float. By using **eKYC** (for verification), **eSign** (for the loan agreement) and **Aadhaar** (for authentication), Capital Float's objective was to enable a presence-less, paperless and cashless loan application experience for the merchant using the India Stack platform, which included using remittance based transaction data consensually as a proxy for credit appraisal.

Figure 2: Project A Workflow

1. Capture the Aadhaar image
2. Gauge the credit Image
3. Get customer consent
4. Wait for back end to process credit score

9. Receive the sum
8. Choose where the loan amount is disbursed
7. eSign to confirm choice & loan terms
6. Offer customer credit choices
5. Intimate customer on loan availability

The second study (Project B), was based on the partnership between Suvidhaa and Axis bank, where Suvidhaa customers (comprising the financially underserved segment) received short-term, small ticket size loans at Suvidhaa retail outlets. Even though this was an assisted model where retailers carried out the eKYC process and eventually handed over a prepaid card (PPC) to the customer, the entire process was cashless and the customer was able to access the money within 24 hours. In this project too, Suvidhaa used the customer's transaction based digital trail to assess credit worthiness.

Figure 3: Project B Workflow

Customer comes to the Suvidhaa retail outlet to avail the loan	Customer can withdraw money from the ATM or use it at a POS machine
Retailer feeds the customer's mobile number on the Suvidhaa portal to check for loan eligibility	If approved, the money is transferred to the PPC that the customer receives (within 12 hours)
If eligible, the retailer asks the customer to scan his finger for biometric Aadhar based eKYC	Axis Bank calls the customer to confirm his credit need and lets him know if he will receive the loan (within 2 hours)
On verification, an online form (undertaking) gets displayed which is downloaded by the retailer and printed out	This form is accessed by Axis Bank which performs a few preliminary CIBIL checks before approving the loan
Retailer asks the customer to sign (thumb print) the form if he agrees to the terms of the loan and also fill in an OTP number (that the customer receives) to confirm consent of loan terms	Retailer uploads the form with the customer's signature, OTP number and PPC (given to the customer) number on the platform

4.0 Key Findings

An overview of the key findings from both projects covering the borrower, lender and the ecosystem perspective is presented below. Broadly, these studies provide **clear evidence** that the **India Stack** can **transform** the way in which **financial services** such as credit are made available to scores of financially **underserved consumers**. However, fully realizing the benefit of the India Stack requires overcoming a range of **roadblocks** which are **regulatory, technical, operational** and **behavioral** in nature.

4.1 User Experience

a)   **The loan addressed a significant unmet need.** Across both studies, the credit product addressed an important existing financing need of the customer. For Eko merchants under project A, the loan provided by Capital Float was a novel, hassle-free product, which they could access without going through traditional bank processes considered complicated and time consuming. Likewise, for Suvidhaa customers under project B, who received "nano" loans from Axis Bank, the loan replaced a very inconvenient informal channel of credit. Most of these customers were daily-wage construction workers, tailors and roadside vendors, with absolutely no access to formal credit. They often experienced the need for working capital (small ticket sizes for lesser time durations), which they meet through informal borrowing at interest rates of 36% to 60% per annum. Further, they were often forced to borrow additional loans to repay the interest accumulated from a previous one, putting them into an endless debt cycle.

b)   **The loan access channel worked efficiently compared to traditional mechanisms, but there were key operational and regulatory challenges that, if solved, could make the process even more seamless.** In both studies, beneficiaries were able to access loans far more conveniently (i.e., without submitting extensive paperwork) and quickly (i.e., under 10 minutes through a mobile interface) than loans accessible via traditional avenues. However, a few operational and regulatory challenges prevented the activation of all the layers of the India Stack. For instance, project participants had to collect physical documents from merchants because it is believed that RBI[2] explicitly recognizes only biometric based Aadhaar eKYC and has not clarified its stance on the OTP linked Aadhaar eKYC. Similarly, a successful OTP-based eKYC process requires that the Aadhaar database be updated with the Aadhaar holders' current and operational mobile number. Therefore, merchants who did not have their Aadhaar card linked to their mobile numbers could not complete eKYC seamlessly.

c)   **Customers were willing to give consent and did not seem concerned about data security and privacy issues.** In both the studies, customers were informed that their remittance transaction history was being used as an indicator to offer loans. However, customers did not have any concerns around misuse or privacy of their data, and seemed content sharing it to access credit. Given the low level of digital literacy in this customer segment, whether the real potential implications of sharing data were actually interpreted by customers will have to be explored further.

4.2 Lender Experience

a)   **Lenders were able to access a new segment of customers.** The project enabled lenders and merchants to test out new value propositions, in terms of:
   - channel of activity (offline vs. online): Lenders were able to tap into net new customer segments. For instance: from catering to online merchants, Capital float was able to provide small ticket size loans to off-line merchants,
   - size (low vs. high turnover): Lenders were able to underwrite loans for businesses which reported lower turnovers compared to their traditional customers
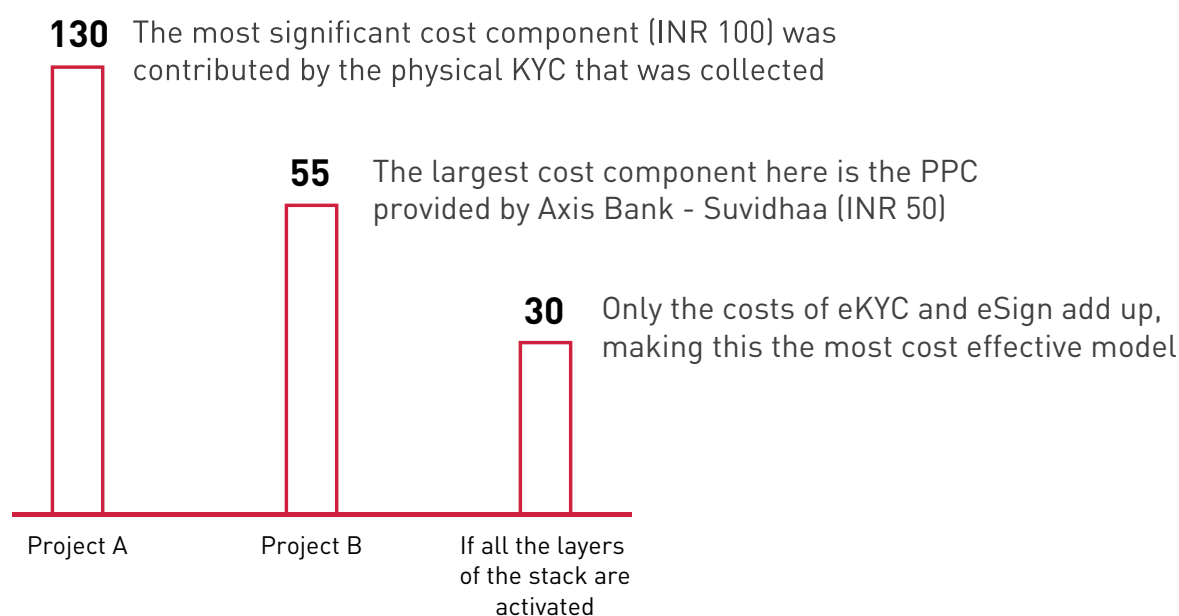
[2] https://www.rbi.org.in/scripts/NotificationUser.aspx?Id=8357&Mode=0

- level of financing need (small vs. large ticket size): Beneficiaries were able to access loan amounts as low as INR7500,
- tenure preference (short vs. long term credit): Lenders were able to give out loans for tenures ranging from 6 to 18 months.

Overall, lenders were able to service consumers from much lower income segments (vs. their traditional customers), providing small-sized "nano" loans compared to typical MFI loans.

b) **Lenders were optimistic that the India Stack would bring down their cost of lending over time[3], thus allowing them to offer borrowers more favorable terms.** However, the full potential of these cost savings will be realized once all India Stack layers are utilized. As described above, certain operational and regulatory challenges prevented this.

Figure 4: Cost comparison across projects (in INR)[4]

130 The most significant cost component (INR 100) was contributed by the physical KYC that was collected

55 The largest cost component here is the PPC provided by Axis Bank - Suvidhaa (INR 50)

30 Only the costs of eKYC and eSign add up, making this the most cost effective model

Project A   Project B   If all the layers of the stack are activated

c) **Certain lenders had to deploy physical staff to coach customers on the functionality and usability of the mobile based app. This is an additional effort component to be factored in when envisaging the scale-up of such initiatives.** This points to a major digital literacy gap in the country especially amongst the low income users and could be a significant challenge to rapid scaling. However, stakeholders interviewed were convinced and remained enthusiastic that the level of effort required for onboarding customers would come down as users develop more trust and comfort in accessing such digitally channeled loans.

d) **Remittance data, where used (Project A), proved a good enough proxy to underwrite small ticket-size unsecured loans; however, there is potential to use other forms of data like online transaction history, POS data, etc.) for lending.** For example, Suvidhaa loans (under Project B) were disbursed on the basis of a more layered and nuanced dataset (with a 12-month vintage), which in turn comprised ~85 parameters including remittance based transaction history.

[3] Subject to technology adoption and scale-up
[4] These costs are indicative

4.3 Technology Integrators

a)   **Although there were no major operational issues in technology integration, some technology readiness from Application Service Providers (ASP) is recommended.** The experience of Capital Float & Suvidhaa suggests that there is a need for technology readiness from the conception stage to facilitate ease of integration. Both KUAs[5] recommend the use of the pre-production platform for testing purposes before deploying a real-time enterprise level platform[6]. Designing an application which factors in integration at the conception stage can help speed up the integration process and subsequent deployment

4.4 Broader Impact on Financial Inclusion

Digital trails can serve as sufficient data points for lenders to assess credit worthiness of customers and offer credit; however, customers seem unable to establish a link between digital payments (which create digital trails) and access to financial services. More education and awareness around this at the time of loan marketing will be helpful to drive adoption of digital payments and to create richer data trails. All the Eko merchants interviewed were online banking users and used their debit cards for online shopping. Some of these merchants also used multiple platforms such as Demo (for mobile recharge) and Suvidhaa (for online bill payments). These merchants were fairly comfortable with "digital" in general, however they explicitly mentioned a preference for cash for their personal transactions. This highlights the need for more education around the benefits of digital payments and the linkages between daily digital transactions and creation of data trails. Suvidhaa customers who were interviewed were not as tech savvy – neither did they own smart phones nor did they use debit cards for purchases. In fact, they used their bank accounts solely to remit money to their families. These customers too are unlikely to truly understand the implications of data trails and would require awareness and capacity building efforts to be influenced to transact digitally.

[5] KUA is a KYC user agency that enables providers to carry out Aadhaar based eKYC via the UIDAI server
[6] eMudhra mandates the use of a pre-production platform to test the platform and carry out 50 iterations of eSign before deploying a real-time platform. Khosla labs is not prescriptive in this regard and allows the sub KUA to make the choice based on their self-assessment of technology readiness

5.0 Recommendations to Unlock Full Potential and Scale

Based on the learning of the two studies, we have outlined a set of high level recommendations for key ecosystem players below:

Relevant stakeholder	High-level policy recommendation
Regulators and policy makers	a) Provide clarity in regulations around Aadhaar based eKYC b) Provide clarity around applicability of authentication and verification (eKYC) processes in the lending business c) Streamline auto debit (ECS, NACH and Postdated cheques) methods d) Promote concerted efforts to drive consumers to update Aadhaar records e) Promote market competitiveness to drive down cost of eSign
Lenders and marketplaces	a) Educate customers (with low levels of awareness) on the creation and import of data trails and its true implication for financial inclusion b) Invest in promoting technology adoption and building user friendly platforms to gain end user trust and comfort c) Experiment with different business models to find the market "sweet spot"
Technology Integrators	a) Streamline access and integration of eKYC and eSign b) Collaborate more effectively with all stakeholders to educate consumers and ease adoption of key services like eKYC and eSign

An iSPIRTed Acknowledgement

iSPIRT foundation connects and guides software product entrepreneurs and catalyzes business growth. It aims to be an enabler of a stronger software ecosystem. We are a not-for-profit industry think-tank founded by key participants of the Indian software product industry. One of our key activities is to evangelize and drive the adoption of the "India Stack".

Ever since the Government of India launched the Open API policy in 2015, iSPIRT has worked as a pro-bono partner with various departments in the development, evolution and evangelization of Open APIs. Around February 2015, we felt that the India Stack had become capable of rolling out a cashless, presence-less, paperless loan while being fully compliant with regulatory requirements.

We felt the most compelling way to showcase the potential of the stack was to show it in action in the real world. On March 3rd, 2015 we called an ecosystem workshop where we invited the relevant stakeholders from lenders to technology players decided to launch the pilot. What followed was one of the most intense and insightful periods in the development of the India Stack.

The team went from concept to go live in just two months, and ran the pilot for another 90 days. What had begun as a small sampling of concept documents and bold ideas, blossomed into an entire ecosystem that demonstrated it's utility in the real India to real Indians. We're confident that the model that was deployed during the pilot will serve as the bedrock of financial services innovation going forward.

This journey would not have been possible without the support of the extended iSPIRT family who responded to our call with speed and a spirit of adventure. In particular we'd like to thank the following: Khosla Labs for providing AUA, KUA services for free. eMudhra for being our eSign service provider, and for generously waiving fees while working to onboard all the partners in a compressed timeframe for the pilot. All our partners, namely Capital Float, Eko, Axis Bank, and Suvidhaa for enthusiastically supporting us, while setting aside their competitive instincts to collaborate and sharing learnings. And finally, to the volunteers of iSPIRT, who despite having full-time jobs, worked tirelessly to ensure the success of the pilot and became the glue that bound all the players together to ensure success.

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