Driving Financial Inclusion In Emerging Markets Using Alternate Data and Big Data Analytics

Amit Das,
CEO (Algo360/ Think Analytics India)

www.algo360.com  |  www.thinkanalytics.in
Driving Financial Inclusion In Emerging Markets Using Alternate Data and Big Data Analytics

Amit Das,
CEO (Algo360/ Think Analytics India)

www.algo360.com  |  www.thinkanalytics.in
Let’s talk about Irfan
Who is Irfan?

- 22 Year Old Male
- Earns INR 17K Per Month
- Office Housekeeping, Errands runner
- Takes salary in cash/ bearer’s cheques
- Lives in a low income neighbourhood
- Working since the age of 19
- Has a bank account and PAN card now
- Unmarried

Wants to buy a bike worth INR45K. Will he get a loan?
New Tax ID (PAN); No Bureau Record, No organized salary record, limited bank history

No
Emerging economies have a lot of Irfans

Rajni works as a house-help/maid in 3 households earning 25K a month. In cash.

Santosh is a driver, earning 19-21K per month in cash working 10 hours a day, 6 days a week

Ram is an electrician, earning 18-24K per month providing repair services
Let’s introduce some mavericks, happy to use alternate data for lending
Irfan has a positive digital footprint

• Buys from Amazon regularly; cash on delivery; no record of failed deliveries; no cancelled or returned orders

• Has been spending ~INR 1.5K per month on discretionary e-commerce sites
Irfan has a positive digital footprint

- Recharges prepaid for INR 150 every month; between 1\textsuperscript{st} and 5\textsuperscript{th} of month, using a recharge voucher

- Using the same number for 8 months now
Irfan has a positive digital footprint

- His UIDAI address matches his location history
- Location data suggests stable home and work location
- Has a consistent device identity that matches his national ID and other information
Irfan has a positive digital footprint

- Has a stable social circle – few active relationships, stable calling patterns to a fixed set of people
- No adverse behaviour – does not miss calls, people do not ignore his calls
- 100+ Instagram followers, Facebook friends
Gets a loan approved, with EMI ~INR1.2K
Starts working as a delivery boy for 4 hours; Earn 5-6K extra
Financial Inclusion Matters!
Globally, \(~40\%\) of adults are “financially excluded” — they do not have access to banking-type services, including the ability to access credit.
Global population with no credible data coverage

~1.5 billion+

Financially Excluded
The bureau based approach is failing the goals of financial inclusion

Typical credit bureau hit rates in India

<table>
<thead>
<tr>
<th>Country</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>No public</td>
<td>100%</td>
</tr>
<tr>
<td>Brazil</td>
<td>50%</td>
<td>63%</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>No public</td>
<td>59%</td>
</tr>
<tr>
<td>South Africa</td>
<td>No public</td>
<td>56%</td>
</tr>
<tr>
<td>Spain</td>
<td>16%</td>
<td>52%</td>
</tr>
<tr>
<td>China</td>
<td>No private</td>
<td>30%</td>
</tr>
<tr>
<td>Phillipines</td>
<td>No public</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: MasterCard Advisors research & analysis, 2014 | World Bank, 2013

Natural limitation to accessing cheap credit
Access to banking products
Access to affordable credit
Access to investment opportunities
We need to get institutions trustworthy data, so that...

... a bank/ large institution will be willing to lend Rs. 20,000 to Irfan at 13-15% per annum

Today, they access unorganized credit at rates as high as 45%+; they are in a debt trap
There are reinforcing changes/ trends that make it the right time to build these solutions
The increasingly “mobile” world

Mobile Phones are the first 'Universal' product

Unit sales, 2014 (bn)

- 5.2 Billion people have a mobile phone

<table>
<thead>
<tr>
<th>Product</th>
<th>Unit Sales (bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Games consoles</td>
<td>0.0</td>
</tr>
<tr>
<td>Cameras</td>
<td>0.1</td>
</tr>
<tr>
<td>TVs</td>
<td>0.2</td>
</tr>
<tr>
<td>PCs</td>
<td>0.3</td>
</tr>
<tr>
<td>Smartphones</td>
<td>1.5</td>
</tr>
<tr>
<td>Mobile phones</td>
<td>2.0</td>
</tr>
</tbody>
</table>
And increasingly, more and more people are coming online

# Mobile Subscribers in India

>1 Billion

330 Million on Internet! Creating a data trail
Newer sources of data have emerged; Data deluge!

- Device Fingerprinting
- Sensors Data
- E-Commerce / Payment Data
- Psychometric Profiling
- Social Media Data
- Utilities (Telecom/ Electricity, etc.) Data
- Public Data Sources

New technology will enable us to harness this data

% Data captured that is useful/ tagged/ analysed <25%

How do we make all this data count?
Supply Side of Capital has opened up; and a new crazy breed of entrepreneurs want to change the world
So, we built Algo360
Lending decisions, simplistically, are powered by three questions

Identity
Do I know her?

Ability
Can she repay?

Willingness
Will she repay?
Algo360 is the baseline for multiple data assets and business use-cases

1. More Alternate Data
   - Digital Data Footprint
     - Device
     - Accounts
     - Social Media
     - Messages
     - Locations
     - Apps
     - Browsing
     -...

2. More "New Insights"
   - Comprehensive Unified Extraction SDK
   - Proprietary Information Libraries and Datasets
   - Machine Learning Algorithms & Advanced Analytics Models

3. More "Cutting Edge Outcomes"
   - Financial Profile
   - Utility Profile
   - Social Profile
   - Location Stability
   - E-Com Affiliation
   - Risk Indicators
   - Lending Scores
   - Marketing Scores
   -...

- Insta Loans
  - Buy Now Pay Later
  - Share of Wallet
  - Customer Value Segments
  - Marketing Triggers...

Strata Conference
Data from multiple sources can be brought together in a ML/AI/ NLP/ image processing enabled environment to establish identity.
We convert the digital footprint into 700+ consumable variables to establish the ability and willingness to pay.
We provided easily interpretable and consumable data assets for business users.
In short

Data Access Pipes
Real Time Processing
Extensive Pattern Libraries
Clustering & Profiling
Visualizations & Workflows
LOS Integrations
Machine Learning
Risk Simulation

Algo360
What did we observe? Learn?
100K+ prospects/applicants on a day

1 Million+ scattered data points every day

70%+ of them are underbanked/new to credit/have no bureau record
15% - 20% with reasonable alternative data profile for credit action
And with these small efforts, we’ve started to make a dent!
Series of innovative product experimentations have begun

Pay Later
Digital Credit
Salary Advance
Microfinance
Virtual Line of Credit
Vocational Education

... and much more
Road Ahead

- More data sources need to be organized; institutions need to be brought onboard for sharing data
- Algorithmic enhancement to how and how much data is processed and maintained
- New segments, new hypotheses, new design of experiments – hyper personalization of products
- Automated credit product design
- Better risk management and monitoring; early warning systems
And it’s a huge opportunity that we are chasing

Expected Consumer Lending Opportunity in India (2020)

$1.2 Trillion

And this is just India I am talking about!
One last thing

Data Privacy!

- User awareness
- User Consent
- Data Protection
- Governance
We often wonder if history was written by the victor. No more, because, now we will have recorded data.
Thank You

Email: amit.das@thinkanalytics.in
Twitter: @not_ghalib
Linkedin: https://linkedin.com/in/dasamit