USING MOBILE DATA TO REACH THE UNBANKED
AGENDA

• Technology in Financial Inclusion
• Introduction to Cignifi
• The Project
• Analysis and Results
• Other Applications
• Conclusions
TECHNOLOGY IN FINANCIAL INCLUSION

- Financial Inclusion is a global goal
  - FI2020
  - G20 Top initiative

- Traditional approaches are not getting results
  - Over 2 billion people still unbanked

- Mobile data can provide insights to make this possible
  - 3.2 billion people with mobile phones
First proven analytic platform to deliver credit and marketing scores for emerging consumers using mobile phone data.

Global team with expertise in credit analytics, Big Data behavioral modeling, and mobile money.

Headquartered in Cambridge MA with offices in San Francisco, Sao Paulo, Mexico City, and Accra.

Patent-pending modeling and big data platform developed by team of world-class data scientists and software engineers.
MOBILE PHONE BEHAVIOR IS NOT RANDOM

It is a rich proxy for the consumer’s lifestyle
TRANSFORMS RAW DATA INTO VALUABLE CUSTOMER INSIGHTS
MOBILE PHONE BEHAVIOR AND SAVINGS

• WSBI and Cignifi partnered to investigate the relationship between mobile usage and savings behavior

• Objectives:
  • Demonstrate feasibility of using mobile data to identify potential savers
  • Provide banks with a new way to qualify and contact new market segment
  • Extract lessons for other WSBI member banks and partners globally
PARTICIPANTS

WSBI
Facilitator & Project Manager

HFC BANK (GHANA) LIMITED
Leading Mortgage and Savings Bank

airtel (Ghana)
Mobile Operator with business in 17 African Countries

cignifi
Data Analytics
Ghana has a strong culture of savings
- 64% of adult Ghanaians claim to save
- Top reasons to save include emergencies and future expenses
- 41% go without basic things to be able to save

Ghana is young
- More than half of the population is under the age of 24
- The median age is approximately 21 years old for both men and women
- Only 8% of the population is older than 55

Ghana is Mobile
- 104% mobile phone penetration
- Six mobile operators
- Branchless banking aggressively targeted by MNOs, but not reaching expectations

GHANA MARKET OVERVIEW
THE DATA

HFC BANK (GHANA) LIMITED

- July to September 2013
- 180,000 Customers
- 194,000 Accounts
- 2.3 million Transactions
- 93% of customers have a single account
- 37% accounts are dormant (no activity during the period)

airtel (Ghana)

- July to September 2013
- 1,648 Customers
- 53.4% pre-pay, 47.6% post-pay
- Call Detail Records (CDRs)
  - 592,451 Outgoing Calls
  - 279,919 Incoming Calls
  - 58,356 Outgoing SMS
  - 208,810 Incoming SMS

93% of customers have a single account
37% accounts are dormant (no activity during the period)
THE ANALYTIC PROCESS

Airtel CDRs

HFC Bank Customer data

‘Closed Group’
1,648 Common Accounts
- 1,118 Active
- 530 Dormant

Cignifi Modeling Engine

Behavioral Segmentation
# Uncovering HFC Customer Segments

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Name</th>
<th>Description</th>
<th>Percentage of Accountholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wealthy &amp; Engaged</td>
<td>Older, high balance, active savers</td>
<td>19%</td>
</tr>
<tr>
<td>2</td>
<td>Wealthy but Inactive</td>
<td>Older, high balance, non-savers</td>
<td>19%</td>
</tr>
<tr>
<td>3</td>
<td>Youth Accounts</td>
<td>Young, some balance &amp; activity</td>
<td>19%</td>
</tr>
<tr>
<td>4</td>
<td>High Utilization</td>
<td>Low balance, active savers</td>
<td>14%</td>
</tr>
<tr>
<td>5</td>
<td>High Churn Risk</td>
<td>Low balance, non-savers</td>
<td>28%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>
BUIDING A CIGNIFI SCORE

• Build multi-variable behavior-based model
  • Number of calls/text messages (SMS) made per day
  • Number of calls/text messages (SMS) received per day
  • Duration of outgoing calls per day
  • Duration of incoming calls per day
  • And over 100 more…

• Calibrated with known savings behavior using:
  • Account balance
  • Activity level

• Create scores that identify potential customers
  • 5 score groups (low to high potential)
PROBABILITY THAT CUSTOMERS HAVE DISCRETIONARY INCOME AVAILABLE FOR SAVING
PROBABILITY OF HAVING HIGH ACTIVITY AND LOW BALANCE
MOBILE SAVINGS OFFER SIGNIFICANT BENEFITS FOR BOTH BANKS AND MOBILE OPERATORS

For Banks
• Low cost channel to acquire customers (growth opportunity)
• Efficient Alternative to branches (lower capex)
• Blend traditional (interest rate) and non-traditional (mobile services) incentives

For Mobile Operators
• Greater utilization of mobile wallets (transactions fees)
• Subscriber retention (churn)
• Revenue growth (ARPU)
Mobile usage behavior opens up a new data-driven way to qualify the ‘unbanked’ for savings products

Challenges the myth that mobile subscribers with the lowest incomes are not interested in financial services

Aids financial institutions in understanding different segments of the market and what products to offer to each

Opens up opportunities for innovative, hybrid products that combine mobile spending with savings
• The Cignifi approach can be applied to create:
  – Credit scores
  – Response scores

• These scores can be used for a variety of products including:
  – Insurance
  – Small-scale consumer loans
  – Credit cards
  – Other financial products
RISK IS INVERSELY RELATED TO ‘CONNECTEDNESS’

*Unique outbound counterparties as % of total calls

3% Average
RISK IS RELATED TO OUTBOUND CALL VOLUME

Default Rate

Low

Outgoing Calls

High

3% Average
CIGNIFI CREDIT SCORE COMBINES
>60 BEHAVIORAL VARIABLES

>90dpd within 6 months
Based on data for 2m pre-pay customers
RESPONSE SCORES DRAMATICALLY REDUCE COST PER ACTIVATION
SEGMENTATION FOR CUSTOMIZED PRODUCT OFFERS

Cignifi Risk Score

% of Mobile Population

0.0% 2.0% 4.0% 6.0% 8.0% 10.0% 12.0%

350 400 425 450 475 500 525 550 575 600 625 650 675 700 725 750
CONCLUSIONS

• Financial institutions currently do not have an efficient way to reach and qualify large portions of the market.

• Mobile phone data is the most ubiquitous form of data in emerging markets.

• This data can help unlock huge market potential by:
  
  • Enabling FI’s to segment and target previously unknown customers.
  
  • Optimize portfolios with a wider variety of products instead of the ‘one-size-fits-all’ approach.
  
  • Create a cycle of data collection to enhance and enrich customer profiles.