

Alternative Features to better served the unbanked and under-banked Population

Becoming an entrenched go-to credit provider in
Indonesia, Philippines, and Vietnam

Addressable Market

Potential market size and why it has not been addressed previously

01

Traditional & Alternative Features

What are alternative features

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Dataset & The Borrower

Breaking down the data into different consumer segments

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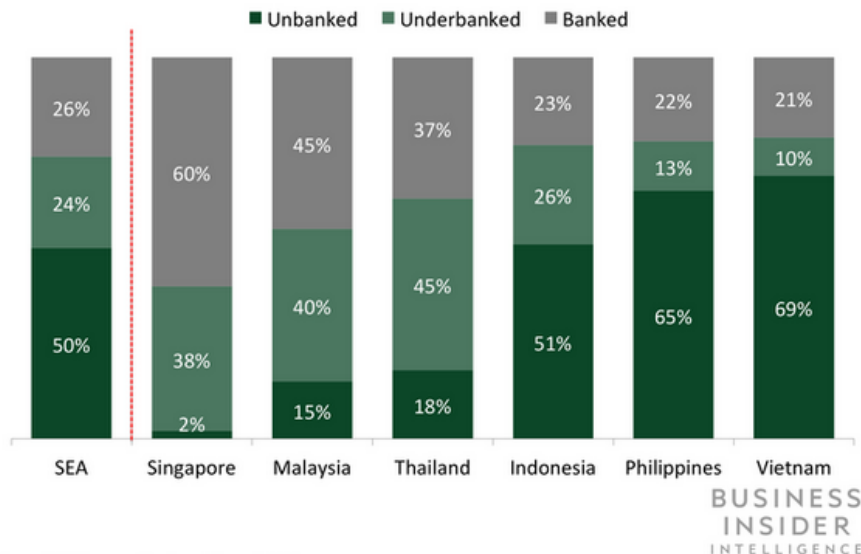
01

Addressable Market

Potential market size and why it has not been addressed previously

Almost 75% of SEA are unbanked or underbanked

Share Of Unbanked, Underbanked, And Banked Consumers In Southeast Asia (SEA)



Source: Bain&Company, Google, and Temasek, 2019

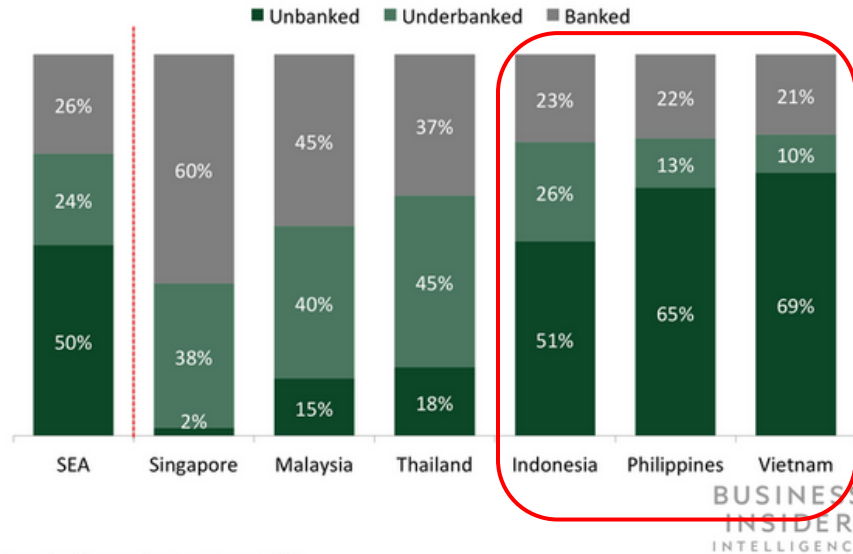
Business Insider Intelligence

- **Underbanked:** no access to credit cards or have no long-term savings product
- **Unbanked:** without access to a basic bank account



Immediate Addressable Market Potential

Share Of Unbanked, Underbanked, And Banked Consumers In Southeast Asia (SEA)



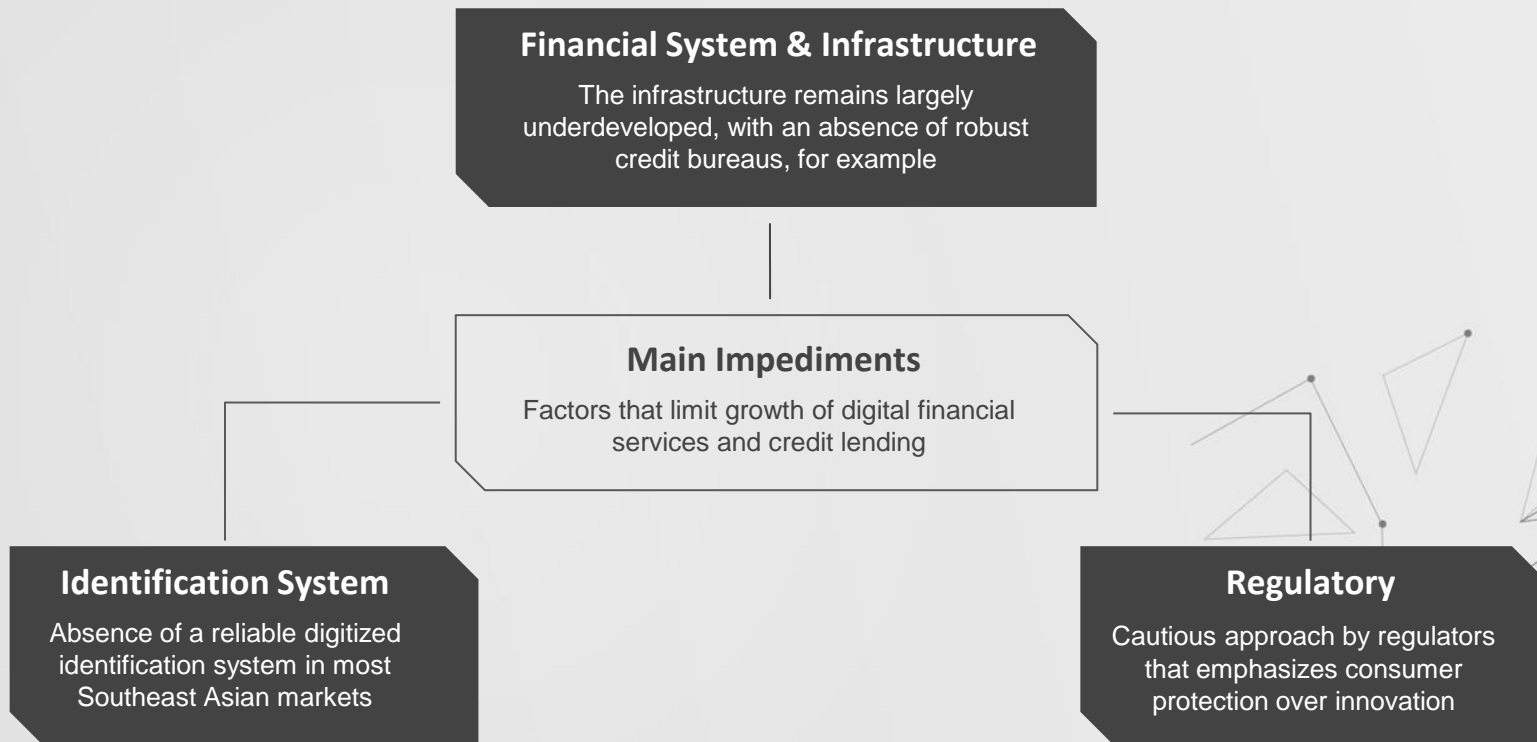
Source: Bain&Company, Google, and Temasek, 2019

Business Insider Intelligence

- 3 Largest countries in Southeast Asia offers an immediate **addressable market of 270 million people** who are either unbanked or underbanked
- Represents **close to 80% of the population** in each country



Why is the Potential Untapped?





02

Traditional & Alternative Features

Traditionally, why were Credit Bureaus so important?

Importance of Credit Bureau



Connections

Credit Bureaus are centralized institutions that connect to all lending / financial institutions

Stores the financial footprints of borrowers from all lending / financial institutions

Repository



Reports

Compile and sale of credit reports to financial institutions so that they can make informed decisions

Traditional vs Alternative Features



Traditional Features

Information based on Income, Age, and credit bureau data (less than 20 features)

System is better able to capture payment history and trend, including each product type (No. of features depends on no. of product types)

Traditional+ Features



Alternative Features

Data from consumer behaviour that looks at preferences & habits (> 500 features)

Problem Statement

Entrenched Go-to Credit Provider

- Fintech identified the huge potential in Indonesia, Philippines and Vietnam of more than 270 million people who are unbanked and underbanked
- Train and improve a credit model that will assist in addressing new customers
- First mover advantage could lead to being entrenched and becoming the go-to provider of credit in these markets



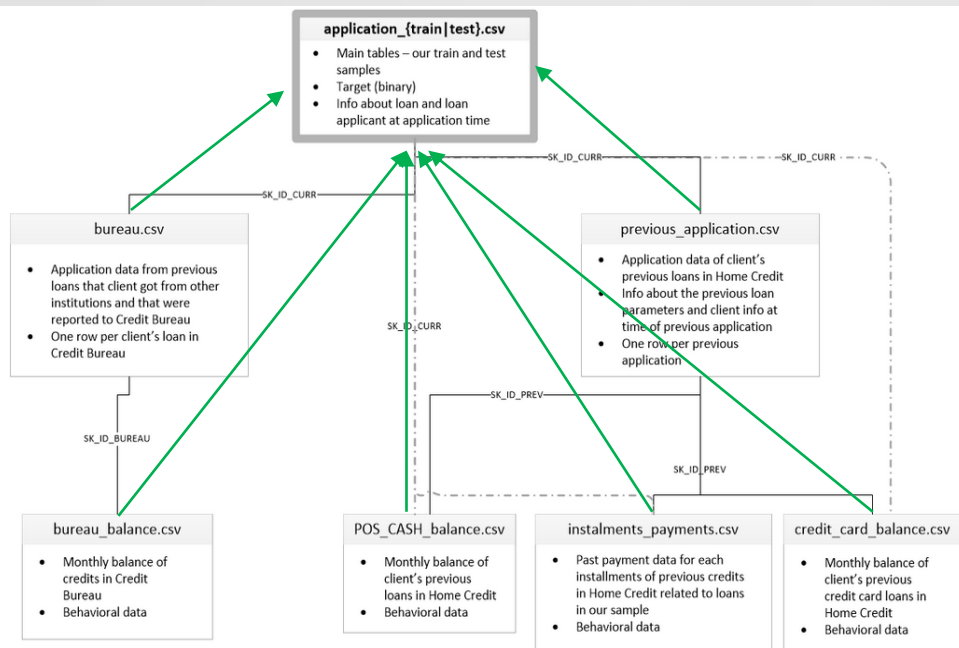


03

Dataset & the Borrower

Identifying different consumer segments

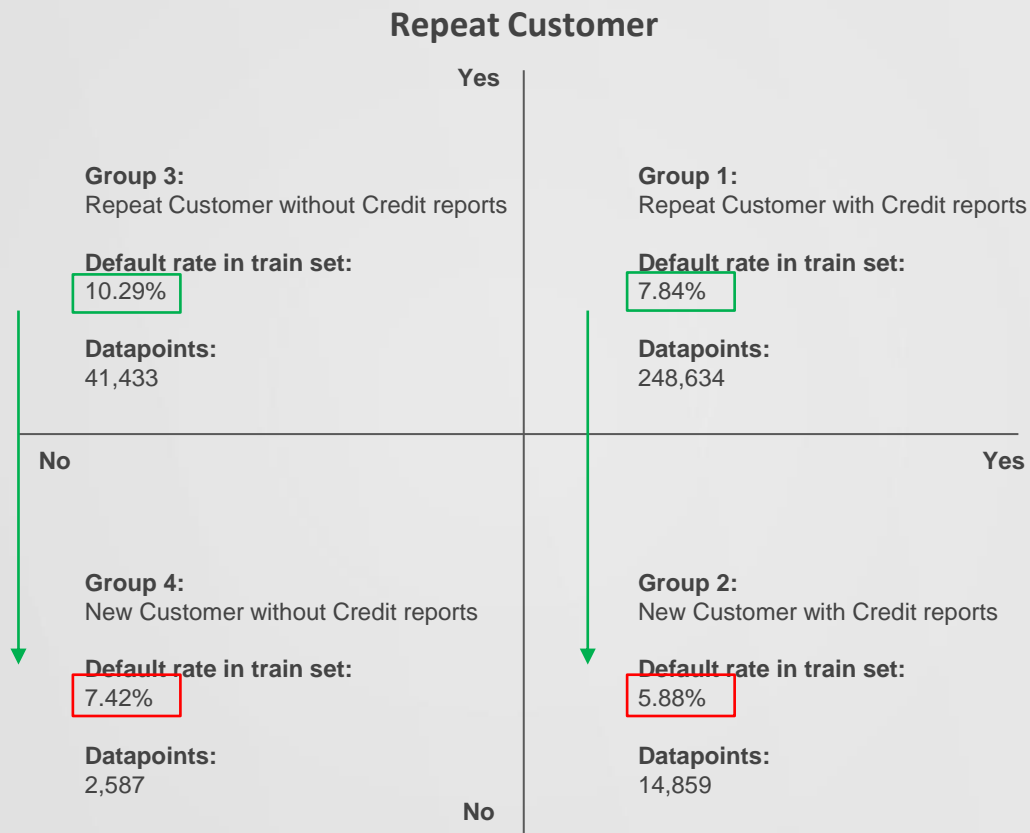
Home Credit Dataset



- **6 separate dataset** on top of the **main training set**
- **Main training set** with target feature (whether the applicant defaulted on the loan)
- **Bureau data** showing other loans for the applicants
- **Previous applications** showing details of previous applications made by the current applicants
- **Pos cash, instalment payments and credit card balance** show details of loans in these specific products made by the applicants previously

→ Aggregate & merge

4 Different Consumer Groups



Bureau Report

What makes a good borrower?



Timeliness

Meets payment schedules



Not over-burdened

Number of active loans and monthly payments is not a high proportion of monthly income



Good track-record

Payment history for past loans

Features Examples

- Days Past Due (15, 30, 60 days)
- Payment date vs due date

- Number of active loans
- Loan – Income ratio
- Monthly payments – Income ratio
- Credit limit / overdrafts

- Number of completed / defaulted loans in the past
- Recent loan trends and payments (time-series)

Problem: Most of these information does not exist for new customers and / or without bureau records

Alternative Features in the Dataset



Social Observation

- Number of people with Home Credit loans in the applicant's social account
- Number of people who defaulted on the loans



Routine Observation

- Who accompanied the applicant when they apply for loan
- Time of day when applicant applied for loan
- Day of week when applicant applied for loan



Mobile Phone

- When was mobile phone last changed
- Was mobile phone contactable
- Did applicant provide work / home phone?

04

Impact of Alternative Features

Training and evaluating
alternative features on model scores



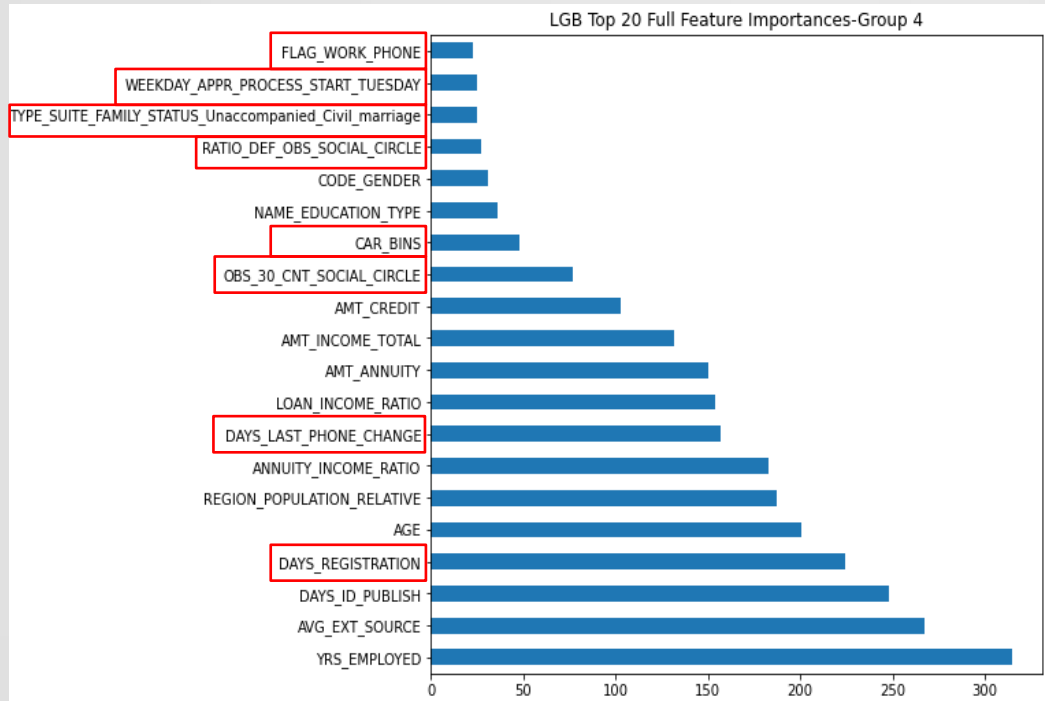
Train Model on Traditional and Full Features


	Cross-Val AUC	Val AUC	Recall	Change compared to traditional score	
Group_1_Trad	0.776	0.783	0.69	↑	0.001
Group_1_Full	0.777	0.784	0.69		
Group_2_Trad	0.737	0.731	0.27	↓	-0.004
Group_2_Full	0.748	0.727	0.26		
Group_3_Trad	0.739	0.74	0.53	↑	0.001
Group_3_Full	0.742	0.741	0.53		
Group_4_Trad	0.717	0.693	0.12	↑	0.041
Group_4_Full	0.739	0.734	0.12		

- Alternative features have marginal benefits for groups with existing credit or past histories
- **Largest benefit in Group 4**
- Validation AUC reached almost similar levels to Group 2 and 3 on **limited alternative features**



Top Feature Importance – Group 4



 Alternative features

- 8 out of 20 features were alternative features
- Spread across our 3 types of alternative features



The background of the slide features a complex, abstract geometric pattern. It consists of numerous small, dark grey circular nodes connected by thin, light grey lines, forming a network of triangles and polygons. This pattern is most prominent on the right side of the slide, with some elements extending towards the left. The overall aesthetic is modern and technical.

05

Conclusions

Other forms of alternative features

Alternative Features can help supplement Traditional Data

Group 4

26 to 94

68 alternative features added

+ 0.041

Increased in model accuracy

-0.09 to -0.05

AUC gap compared to Group 1



Rich possibilities of Alternative Features



Clickstream Data

How customer moves through the website, where they click and how long they take



Psychometric Assessment


- Length of time to answer question
- How many times did applicant change their mind
- Consistency with written request for credit
- Whether the applicant is 'gaming' the question




Social Network

- Text analysis based on posts
- Data based on connections to network

Study this image and click next when you've memorized the image.



How many items have changed in the image?
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3 4 5
6 7 8



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