

# Fraud Prevention in Consumer Finance

HOME CREDIT PHILIPPINES

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April 2019

# Home Credit Group Introduction

HOME  
CREDIT



Client base  
116 million customers



Started operations in 1997 in Czech Republic,  
further developed in Europe, CIS, Asia



10 countries around the world

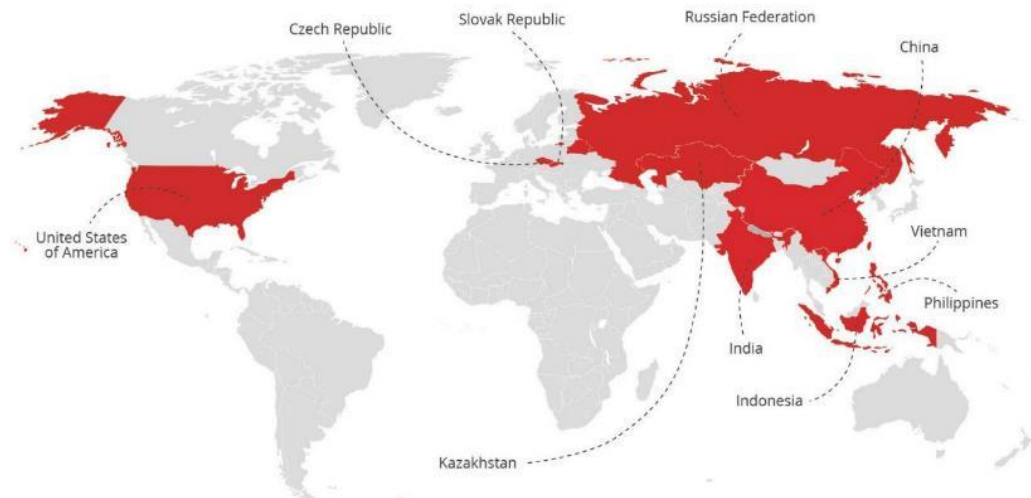


437,417 distribution points



125,446 employees

*All figures as of 31 December 2018*



We focus on **responsible lending** to people with little or no credit history, who may be underserved by traditional banks, usually **first-time borrowers**.

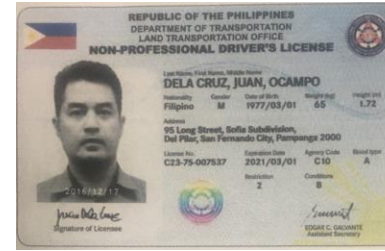
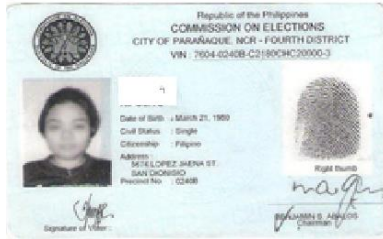
Our core business is **no-collateral in-store financing of purchase** to qualified mass-market customers, seeking to purchase appliances and mobile devices through monthly installments.

Our services are **simple, easy and fast**.



# Client identification ~ documents

- This problem is linked to the fact that there is **no unique identity document present**
- Philippines is a country with high risk of **stolen or fake identity**




- Current documents can be **easily falsificated** in local markets and cheaply purchased




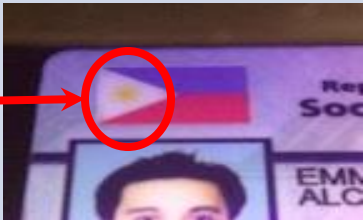


# Client identification ~ fraud prevention

- Quality of fake documents good enough to visually recognize.

| Document        | Original  | Fake  |
|-----------------|---|---|
| Driving license |  |  |

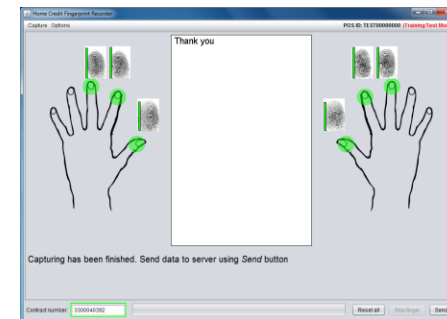
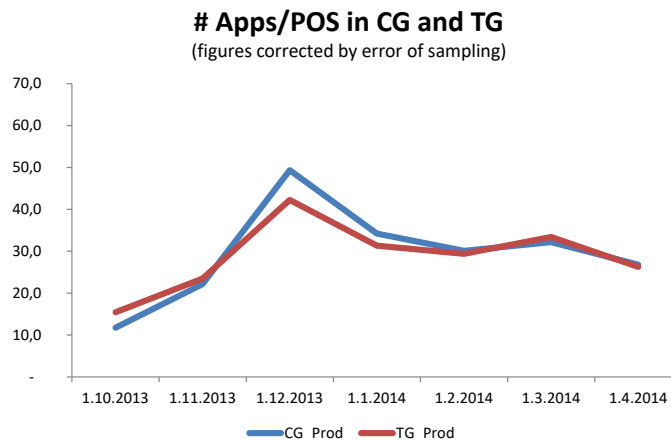
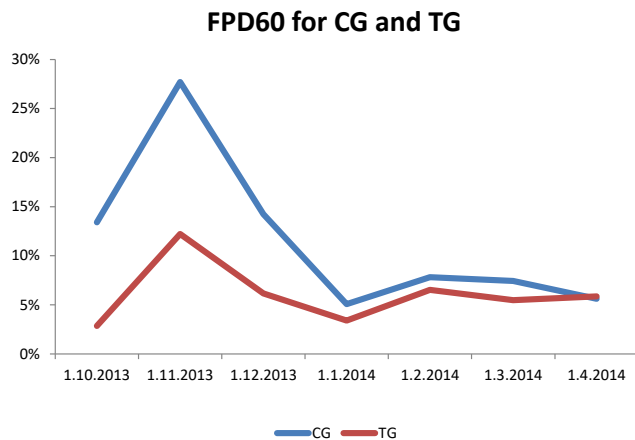
- Alternative methods of verification in place ~ not full protection with human factor impact

| Document | Original  | Fake  |
|----------|---|---|
| SSS      |  |  |



# Client identification ~ finger biometrics

- Decision to pilot finger biometric was made ~ 6 fingers to be collected (champion/challenger mode for risk/sales impact)
- Pilot results with positive CBA



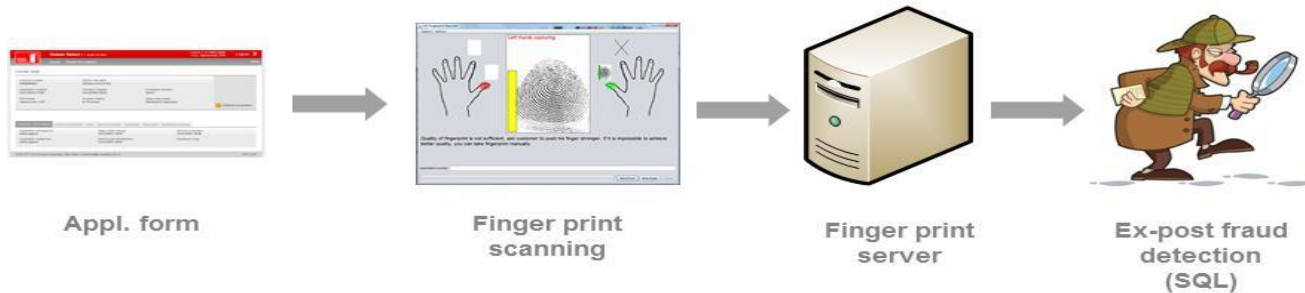
## Lower Risk

During first 3 months, FPD60 (1MOB60) of Target Group [TG] is consistently and significantly higher compared to Control Group [CG], this translates to **6.2% of savings on Loss To Sales.**

## Negligible Sales Decrease

Shops without fingerprints devices have only 3.3% more applications in the pilot period.

# Anti-fraud prevention with finger biometric HOME CREDIT



## Example of case detected:

Same person but used different name

CUID: 636f Show more details

Fingerprint set id: 88691a3f-ce5e-4d35-8b98-b6ceb7839748

Computer: MoDAAAAAAAAAAAAA

Score: 10000

Right thumb

Right index

Right middle

Left thumb

Left index

Left middle

CUID: 250f Show more details

Fingerprint set id: 844220e7-79ca-4f84-b974-170cc38eca83

Computer: MoDAAAAAAAAAAAAA

Right thumb

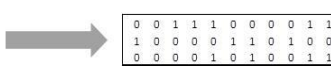
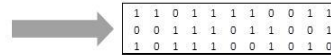
Right index

Right middle

Left thumb

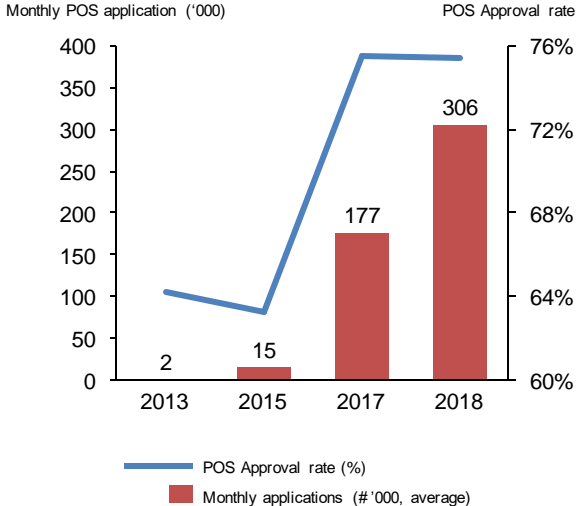
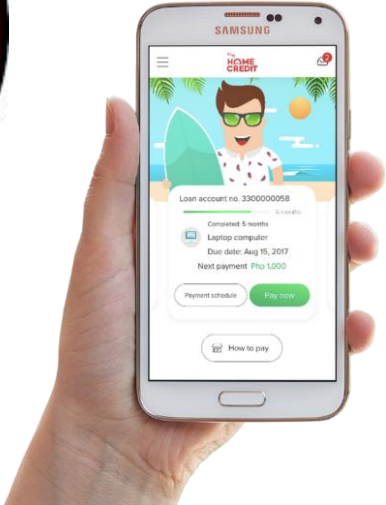
Left index

Left middle



- We use positive and negative hit for duplicity
- In 2018 we were able to protect 500+ contracts with potential loss 4.4 MM PHP (73k EUR)

# Finger biometric vs digitalization





# Face biometric decision made

- In the light of business digitalization we decided to replace fingers by **face biometric back in 2018**
- Home Credit has one of the biggest selfie databases in the Philippines exceeding **6 million unique client pictures**
- In last 6 months we have prepare the infrastructure for AFIS replacement to **ABIS** (Face/finger biometric solution) with supported **Digital onboarding toolkit** (DOT) delivered by Innovatrics



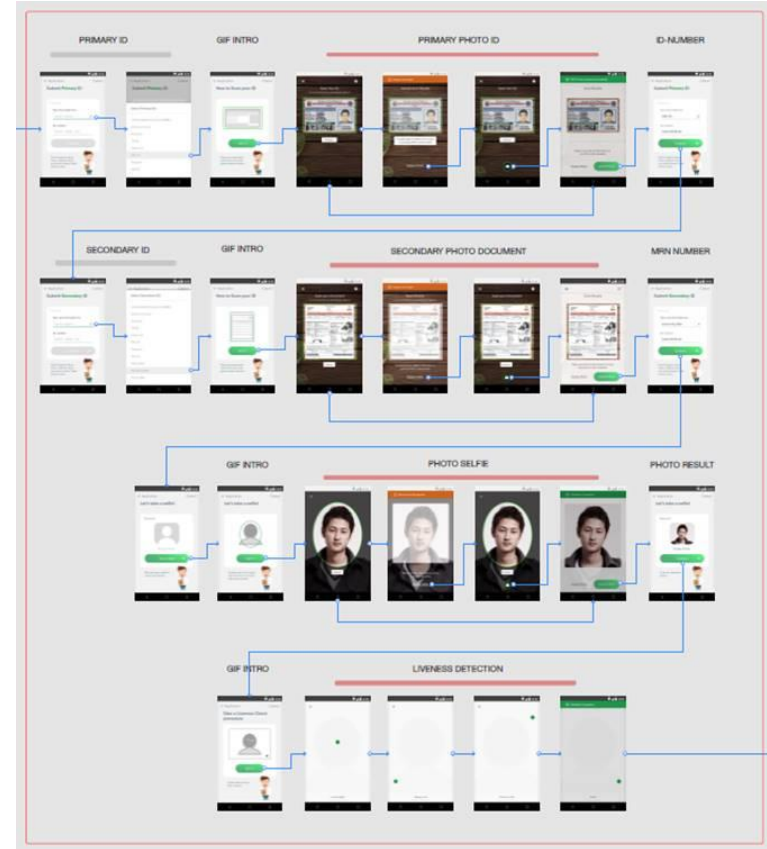
**e-KYC** support (selfie + docs picture comparisons + liveness check)



**OCR** (Optical character recognition) to prefill clients data from documents



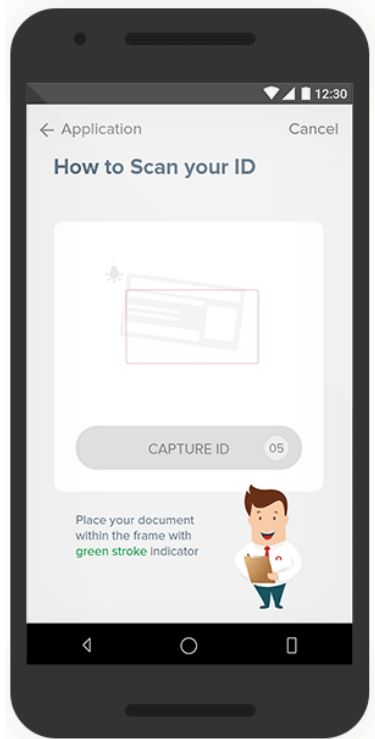
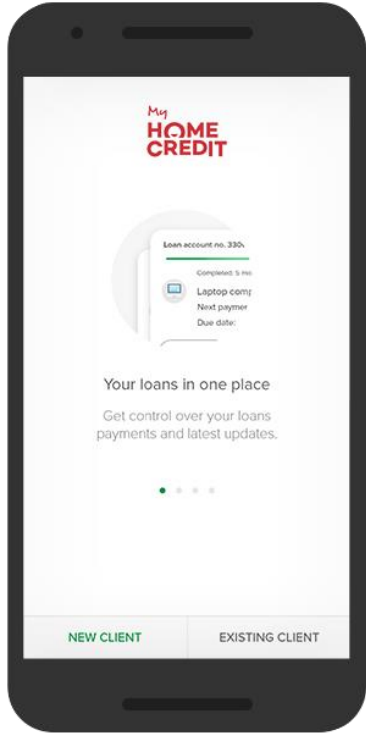
**1:N picture comparisons** (Anti-fraud tool for full replacement of finger prints)



# Application Form ~ Mobile App

## Document scanning

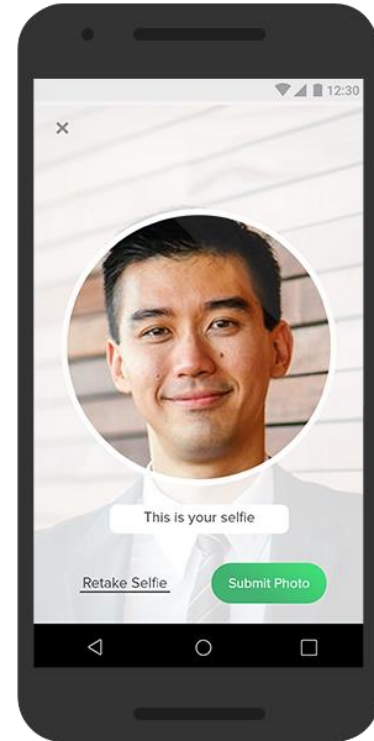
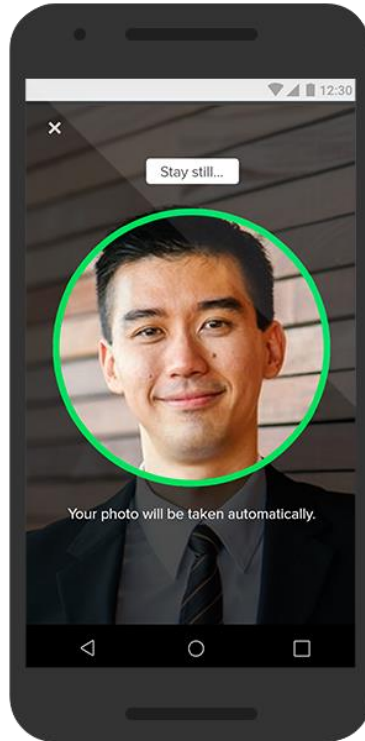
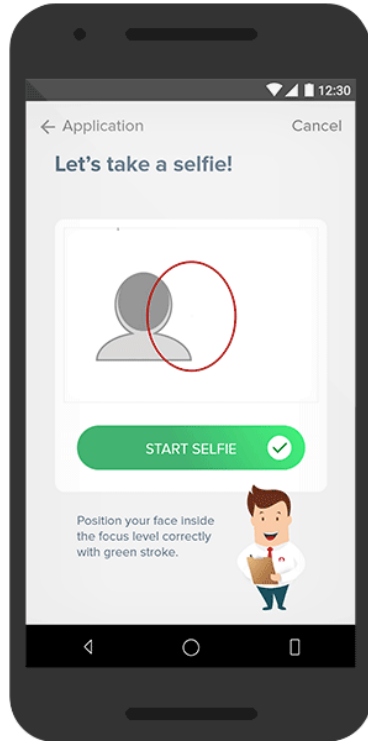
HOME  
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# Application Form ~ Mobile App

Selfie picture

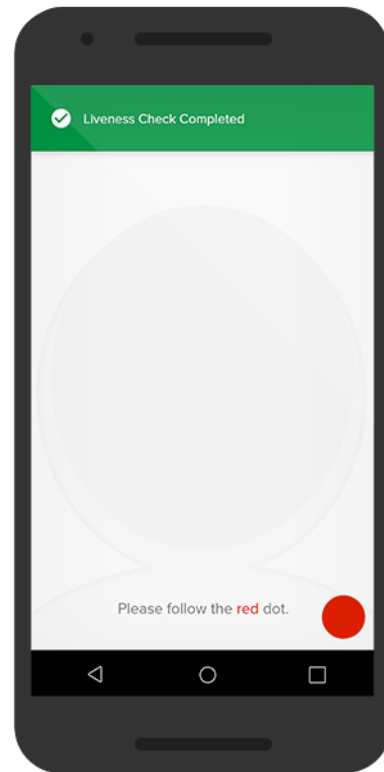
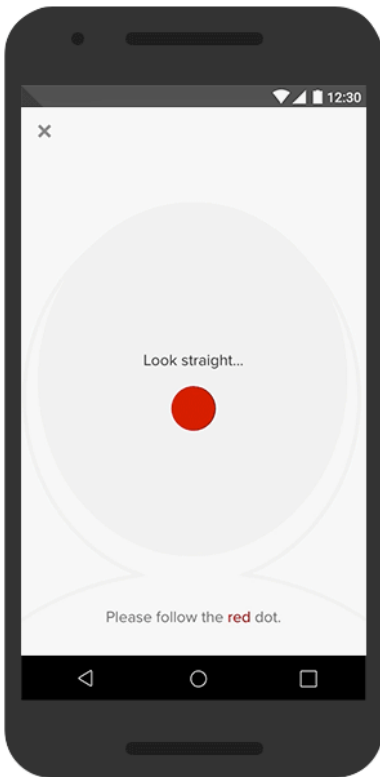
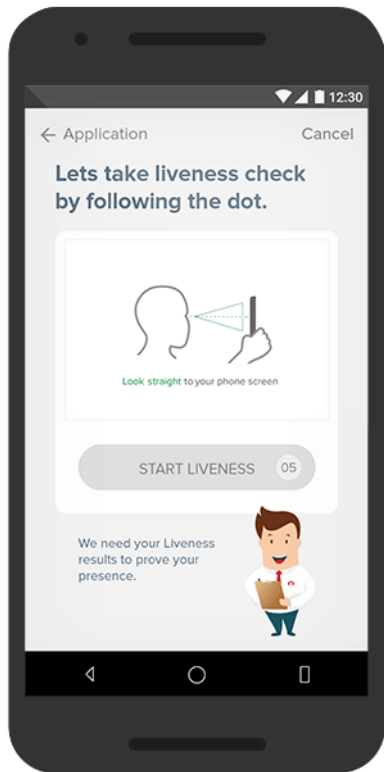
HOME  
CREDIT



# Application Form ~ Mobile App

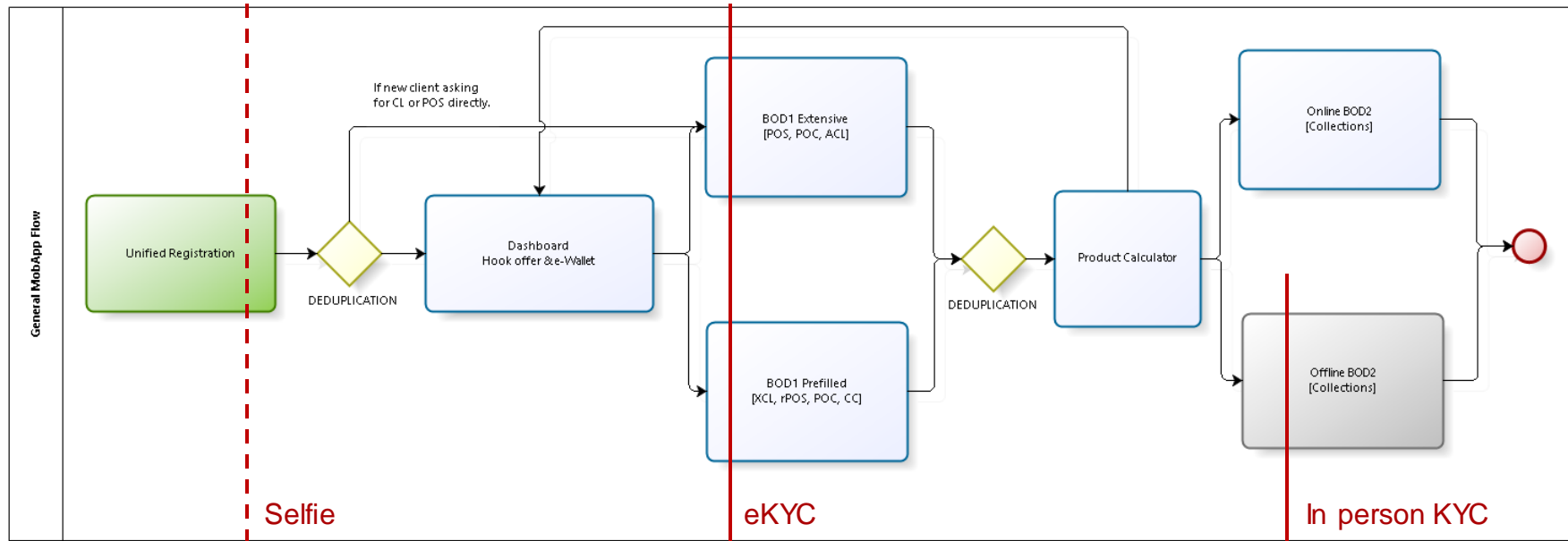
Liveness detection

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# Underwriting strategy

Face biometric defines approval process

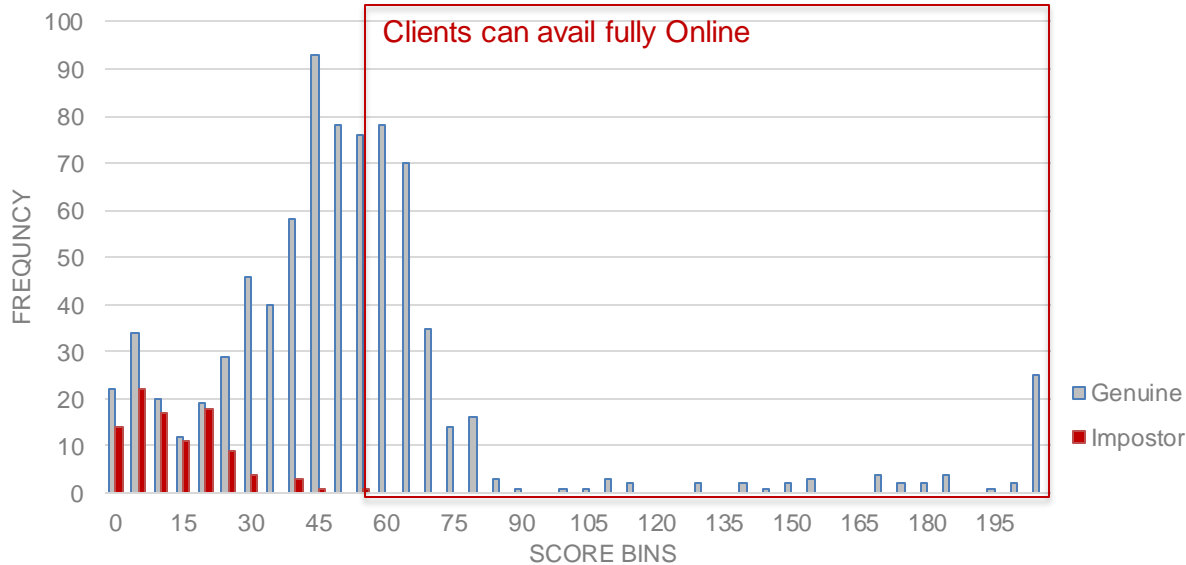




# eKYC Simulation

## Expert Business Impact

### Genuine and Impostor Score Distributions



|                |     |
|----------------|-----|
| SAMPLE SIZE    | 901 |
| IMPOSTOR COUNT | 100 |
| GENUINE COUNT  | 801 |

Innovatric’s technology allows to process **30%** of clients fully Online. This number will be increasing because:

1. Technology Improvements
2. Camera Quality Improvements
3. Unification of PH documents
4. Better Client Instructions

| SAFE ZONE | Threshold 60 |          |
|-----------|--------------|----------|
|           | COUNT        | RELATIVE |
| PASS      | 274          | 30%      |
| IMPOSTORS | 0            | 0%       |

| SUGGESTED ZONE | Threshold 50 |          |
|----------------|--------------|----------|
|                | COUNT        | RELATIVE |
| PASS           | 429          | 48%      |
| IMPOSTORS      | 1            | 1%       |

| RISKY ZONE | Threshold 40 |          |
|------------|--------------|----------|
|            | COUNT        | RELATIVE |
| PASS       | 579          | 64%      |
| IMPOSTORS  | 4            | 4%       |

# Challenges of automated face biometric

| ID | CATEGORY                  | DESCRIPTION  | DIFFICULTY TO SOLVE | SOLUTION  |
|----|---------------------------|--|---------------------|---|
| 1  | LIVENESS DETECTION        | Fake the check by video or mask.   | 5                   | Detect devices (detect phones and monitors) on screen.                    |
| 2  | FAKE PHOTO ON ID          | Stick the photo with glue to document.   | 5                   | Solution is impossible by photo picture.                                  |
| 3  | OLD ID                    | Face do not match.   | 4                   | Only POS Endorsement  |
| 4  | CLIENTS with DISABILITIES | DISABILITIES - Squint, Old people  | 4                   | Only POS Endorsement  |
| 5  | DEVICE                    | POOR QUALITY PHONES – Poor quality phones takes longer to evaluate the picture.  | 3                   | Difficult but possible- iFace parameters based on type of phone.          |
| 6  | SELFIE                    | DARKER PEOPLE - have worst comparison score.                                     | 3                   | Algorithm training- include darker people in testing set.                 |
| 7  | SELFIE                    | LIGHT – Light in background lowers the quality of taken pictures.                | 3                   | Light indicator as the output of picture taking.                          |
| 8  | LIVENESS DETECTION        | GLASSES - Client can proceed even with glasses - the quality is slightly lower.  | 2                   | Instructions - people should not wear glasses.                            |
| 9  | LIVENESS DETECTION        | MOVING HEAD - Clients are moving with head and not eyes.                         | 2                   | Instructions - show video.  |
| 10 | SELFIE                    | SMILE - Expression in face doesn't fit with expression on ID.                    | 2                   | Ask clients not to smile on selfie.                                       |
| 11 | LIVENESS DETECTION        | DIFFERENT PERSON - Selfie and on liveness check can be totally different person. | 2                   | Match picture from liveness detection with selfie.                        |
| 12 | ID                        | HOLOGRAM - more pictures on the document = fails.                                | 1                   | Train algo on certain templates to take picture from some area.           |
| 13 | SELFIE                    | CIRCLES - people don't know how to take selfie.                                  | 1                   | Instructions - show video that circles should overlap. Change parameters. |
| 14 | ID                        | AUTOMATIC PICTURE TAKING - The ID picture should be taken automatically.         | 1                   | OCR - This will be ready with introduction of OCR.                        |

# Impacted Processes ~ what is next?



**Know Your Customer**  
*Online identification for client*



**Mobile App Login**  
*Existing client can use their face to access the mobile app.*



**Document Validation**  
*QR Codes and OCR should provide a basic validation check.*



**Contract e-Signing**  
*Instead of OTP signature, cost can saved by biometric signature. This can also serve to prove that contract was signed be in front of court.*



**Personal Information Management**  
*Clients should be able to edit their personal information without contacting customer service (phone numbers, bank accounts etc.).*



**Blacklisting**  
*Fraudsters won't be allowed to avail for loans.*



**Credit Cards**  
*Card Activation, PIN Generation, Card Unblocking*



**Access to Internal Systems**  
*Verification of employees accessing building or login in sales application on tablet.*

**Thank you**

