

UNLOCKING VALUE FROM TELCO DATA

TELCOSCORE X-MNO CREDIT RISK SCORING FROM THE CZECH REPUBLIC

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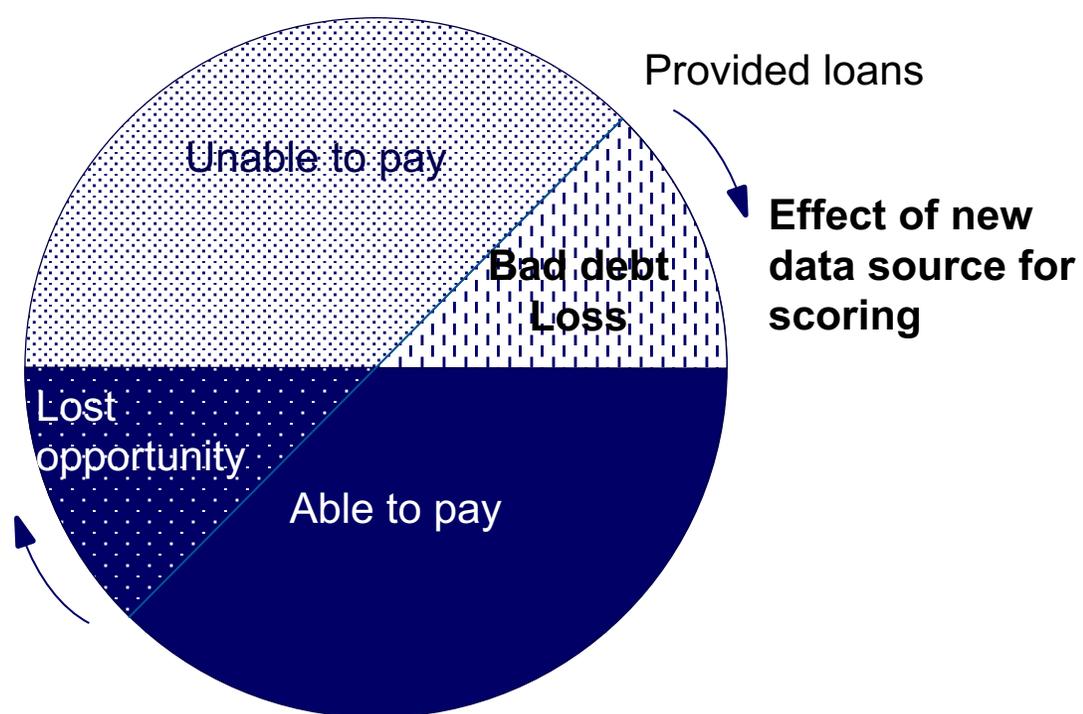
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The business problem

- 20% of population has no/limited bureau data
- This creates substantial risk for lending
- Banks want better data to reduce risk

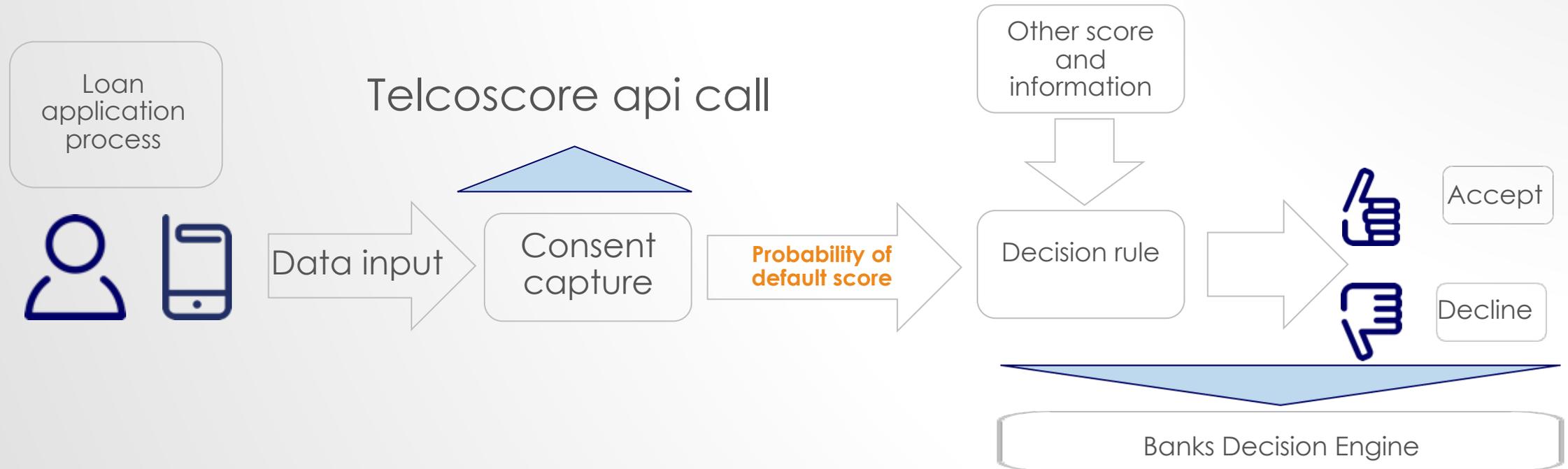


- **There is always a trade-off between higher interest revenue and bad debt loss when providing loans**
- This means good opportunities to lend are missed (lost revenue) or poor decisions to lend are made (bad debt)
- This resulted in the creation of **TelcoScore** which adds scores information about MNO customers and adds to the bank loan scoring process improving the quality of risk assessment and lending

PRODUCT CONSTRUCT –OVERVIEW

- **TelcoScore = one number** - value in the range 1-1000- which confirms a risk score predicting the probability of the customer defaulting on a personal loan in the next 3 to 6 months
- The Calculation is based on customer's **contractual, operational and credit data with their MNO**
- O2, T-Mobile and Vodafone → cover 90% of the domestic market
- The phone number or personal identification number is scored
- **The data variables in the model and the scoring methodologies are standardized across the MNOs so that a consistent product is delivered to the FS vertical as if the customer was scored as part of a group made up of all the customers together**
- **The models are proven to be very predictive of risk proving the value of the data**
- There is a model for postpaid, prepaid and business (employees phones)
- The product has been fully audited by the Czech Republic **Office for Personal Data Protection** and tested with the **Czech National Bank**

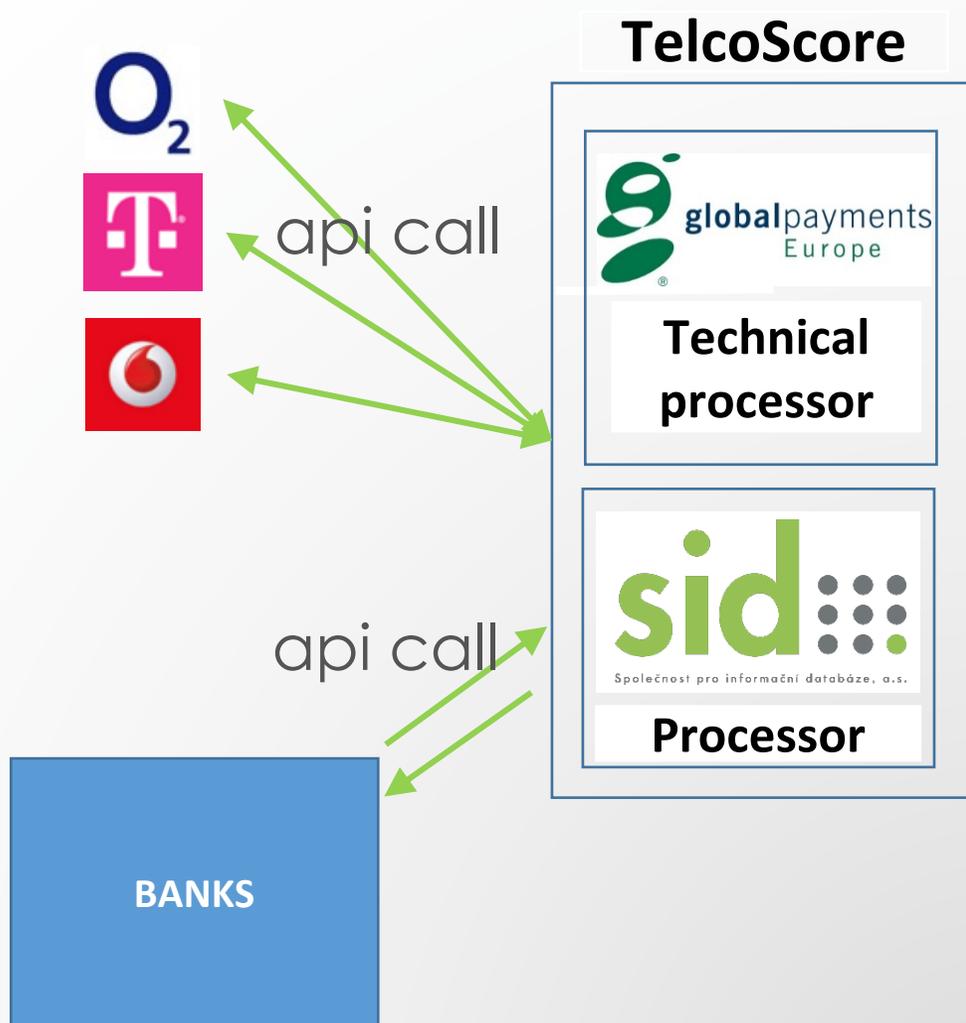
HOW does TelcoScore work? Business process (1) – bank channel



Telcoscore is combined with other data to make more informed and therefore better decisions.

HOW does TelcoScore work?

Business process (2)



- The bank makes one api call to aggregator partner
- The platform is operated by the **SID (Society for Information Databases, a.s.)**
- Technical processor - **Global Payments Europe**
- **Customer data remains the property of operators**
- The calculated score is created in real time by the MNO
- Customer consent capture is required and will be controlled by the platform operator, all in accordance with GDPR compliance

DATA PRIVACY



- Specific **Customer consent** to calculate and use the score is secured at point of credit application (face to face or digital)
- As the score relates to propensity to default on a financial services credit product, **GDPR regulations** confirm this is not required for day to day operation of the Telcos
- Accordingly, MNOs pre-calculate certain fields e.g. average data use in the last 6 months, then bring the score from each attribute together to calculate the actual **Telcoscore in real time** when the api call comes
- Some **attributes had to be left out** of the model due to privacy reasons (e.g. calls from debt collection agencies, geolocation...)
- MNOs are data controllers and **SID is a data processor**
- The product has been fully audited by the Czech Republic **Office for Personal Data Protection** and acknowledged by the **Czech National Bank**



I want to take
a loan



- Minute loan from 4.8% p.a.
- Online approval in 3 minute
- Up to CZK 700,000

Apply online

[More about loan](#)

Udělení souhlasu s dotazem na mobilní operátory může mít pozitivní vliv na vyhodnocení Vaší žádosti

Souhlasíte s tím, aby

- Equa bank a.s., IČO 47116102 v souvislosti s Vaší žádostí o uzavření smlouvy předala **Vaše telefonní číslo a/nebo rodné číslo operátorům**: O2 Czech Republic a.s., IČO 60193336 a virtuálnímu operátorovi O2 Family, s.r.o., IČO 24215554 (100% dceřiná společnost O2 Czech Republic a.s.), T-Mobile Czech Republic, a.s., IČO 64949681 a Vodafone Czech Republic a.s., IČO 25788001;
- operátoři jednotlivě zpracovali Vaše telefonní a/nebo rodné číslo **za účelem vytvoření agregované informace vypočtené z údajů o způsobu využití služeb elektronických komunikací** (platbách, druhu, množství, místě) vedených na Vaši osobu nebo z údajů o způsobu využití služeb elektronických komunikací poskytovaných na telefonním čísle, jehož jste uživatelem, a předali tuto agregovanou informaci spolu s typem služby Equa bank a.s. **za účelem posouzení Vaší schopnosti a ochoty plnit své závazky**. Prohlašujete, že telefonní číslo uvedené v žádosti je ve Vašem výlučném osobním užívání.

Jste si vědom/a, že souhlas můžete odvolat způsobem uvedeným v [Memorandu o zpracování osobních údajů](#).

Více informací naleznete na www.equabank.cz/osobniudaje.

Nesouhlasím

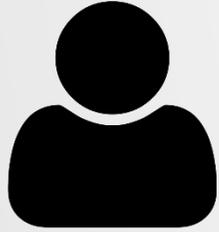
Souhlasím

In the final stage of the loan application a message appears requesting consent for mobile operators to calculate Telcoscore. Clicking the agree (Souhlasím) button at the bottom would trigger the request.

„Granting a consent to a mobile carrier can have a positive impact on the evaluation of your application”

...

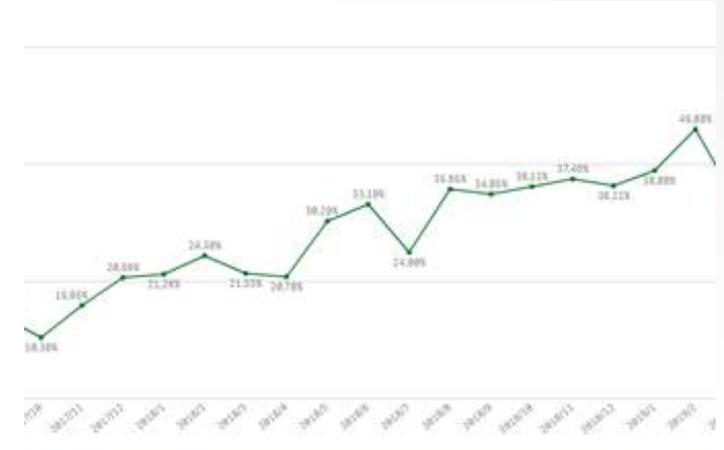
COMMERCIAL PROOF POINTS



Started late 2017 and now live with **13 financial institutions which includes 3 of the top 4 banks**



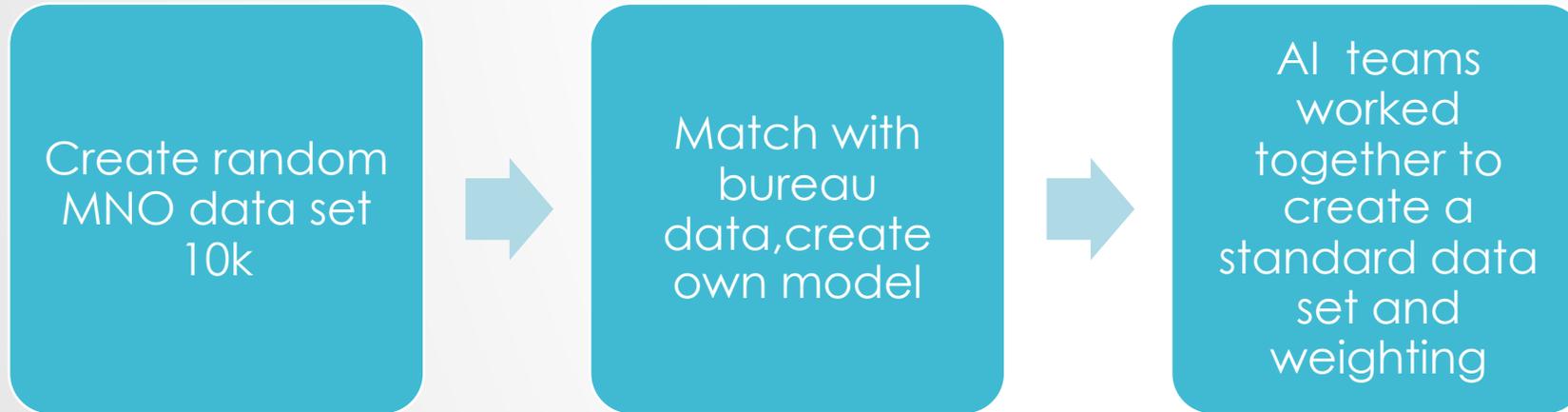
Monthly volume of api calls now close to 50k which represents c. 20% of market volume



Telcoscore has helped us to increase the approval rate for the new to market portfolio by more than 100%. Our loans are now available to a much wider customer audience.

Peter Balazi. Head of Retail Credit Risk, Equabank

SCORING MODEL DEVELOPMENT

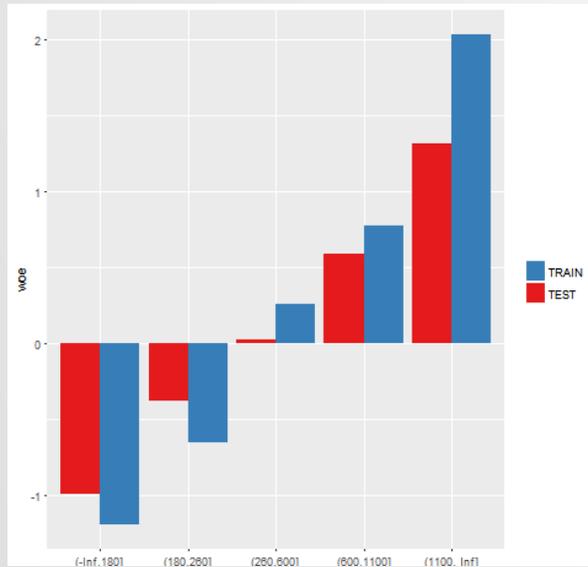


Key points-

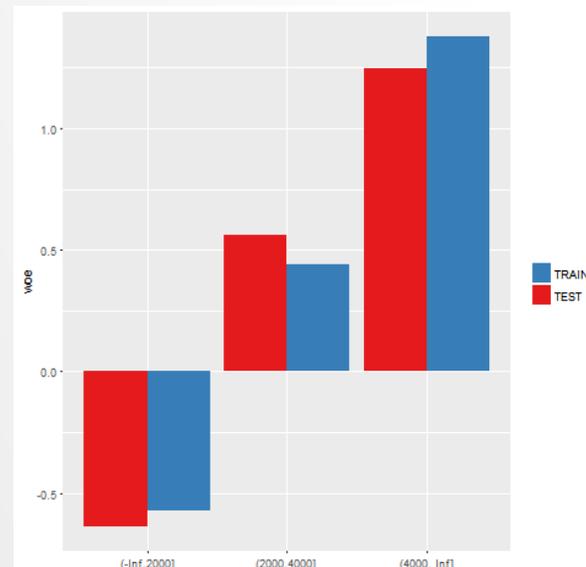
- MNOs are members of the Czech Republic Credit Bureau Solus
- Used separate training datasets for each MNO and each customer segment to create own model
- Established a working group to create a standard product
- Reviewed the data variables that were used in the models and normalised so that we used the same variables.
- Where definitions varied created sql queries to translate the variables into the same definitions

EXAMPLES OF VARIABLES IN THE MODELS

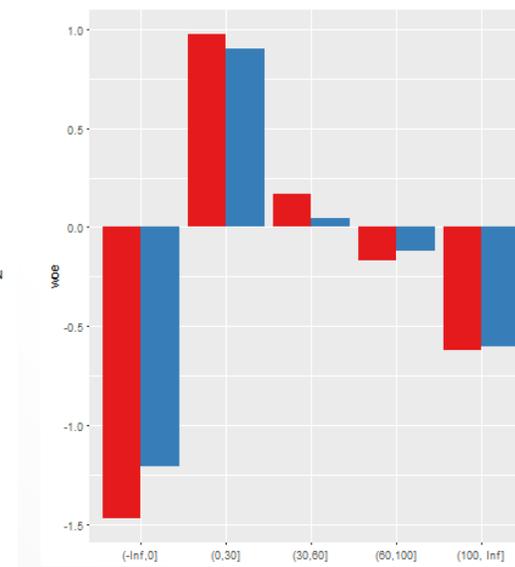
Average device usage time



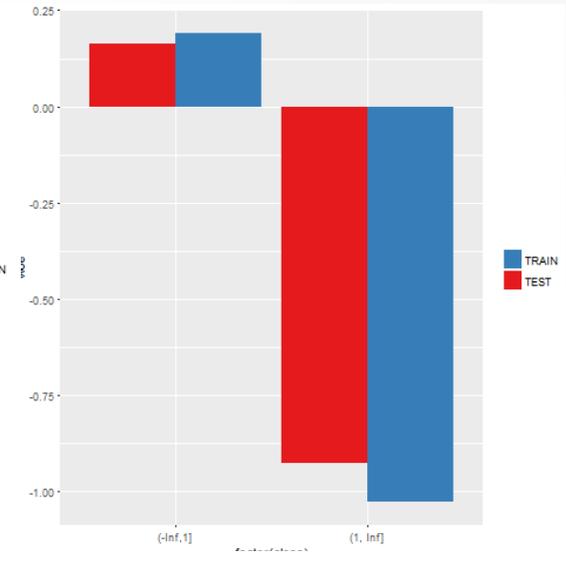
Number of days since SIM activation



Number of incoming SMS from own network per month

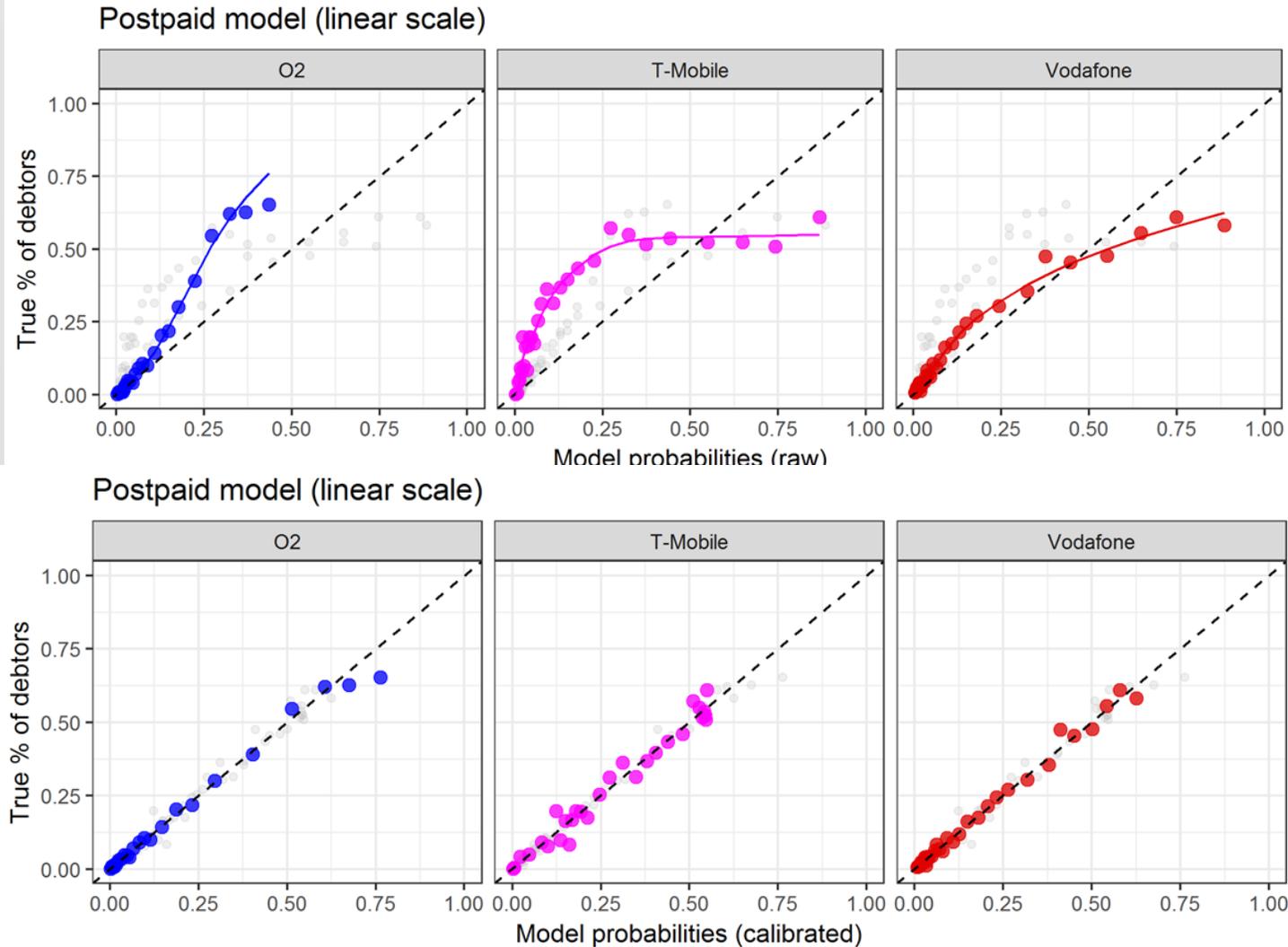


Number of devices used per month



Graphs show the association between data variables and their impact on creditworthiness with <0 a negative score impact

Models calibrated across MNOs to score as 1 population



- The 3 postpaid models are developed from 3 different audiences and so will predict default on scales with different distribution shapes. This is illustrated in the graphs at the top which show the individual models risk score distribution versus real population.
- The market requirement was 1 consistent score as if the customer was a member of the whole population not just that 1 telco brand.
- We created a process to do this with the result that scores are normalised as if that customer is a member of the whole population.

THE MODELS HAVE VERY GOOD PERFORMANCE

The strength of the product is based on its ability to predict.

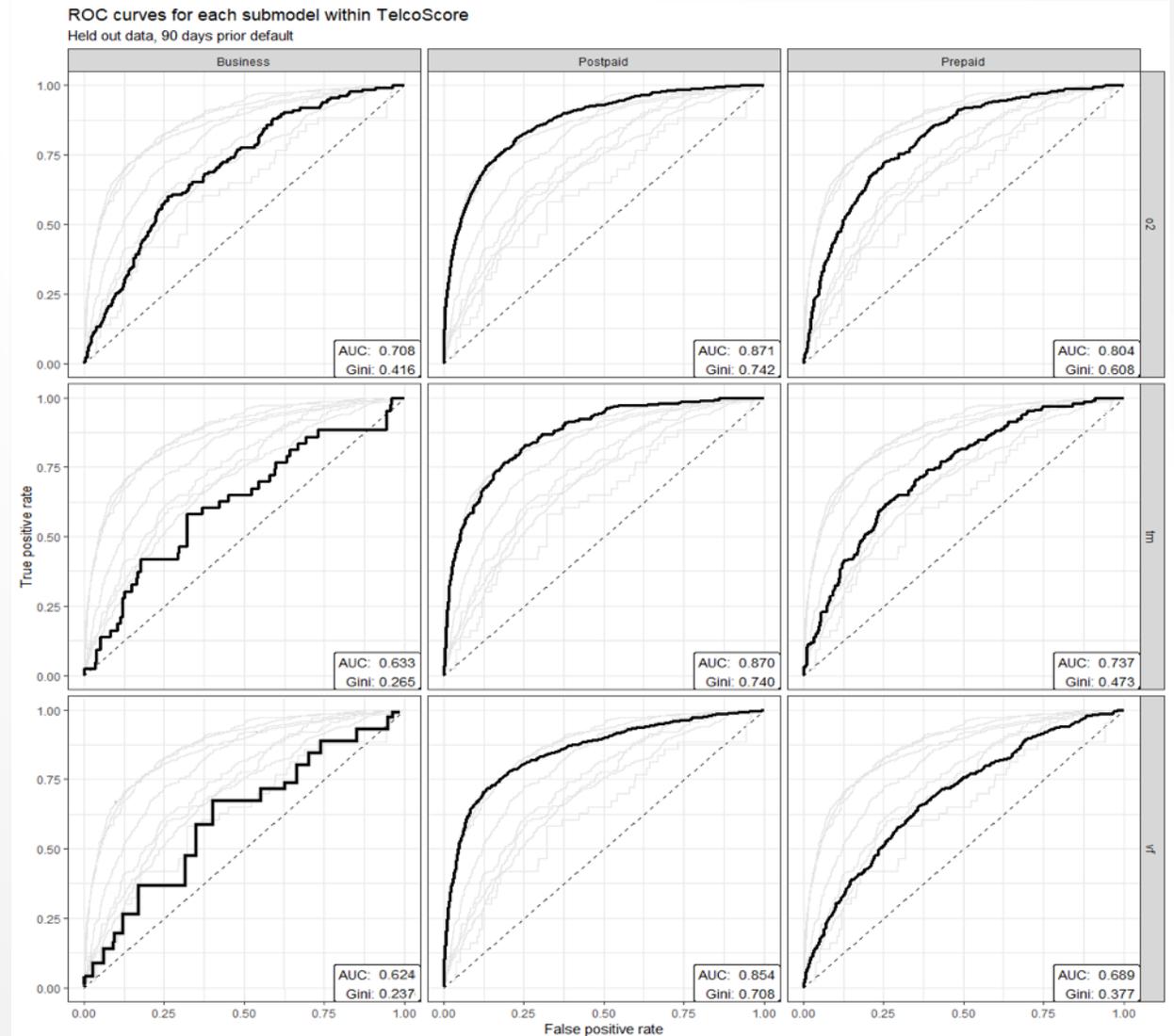
Periodical reevaluation is performed on a large sample of customers to confirm this ability.

Gini postpaid: **0,73**

Gini prepaid: **0,60**

Gini business: **0,41**

Gini describes the quality of the models with 1 = a perfect model easily separating goods from bads



SUMMARY

The FS vertical has a real business need for more data to help improve the quality of credit assessment, particularly for new to bank

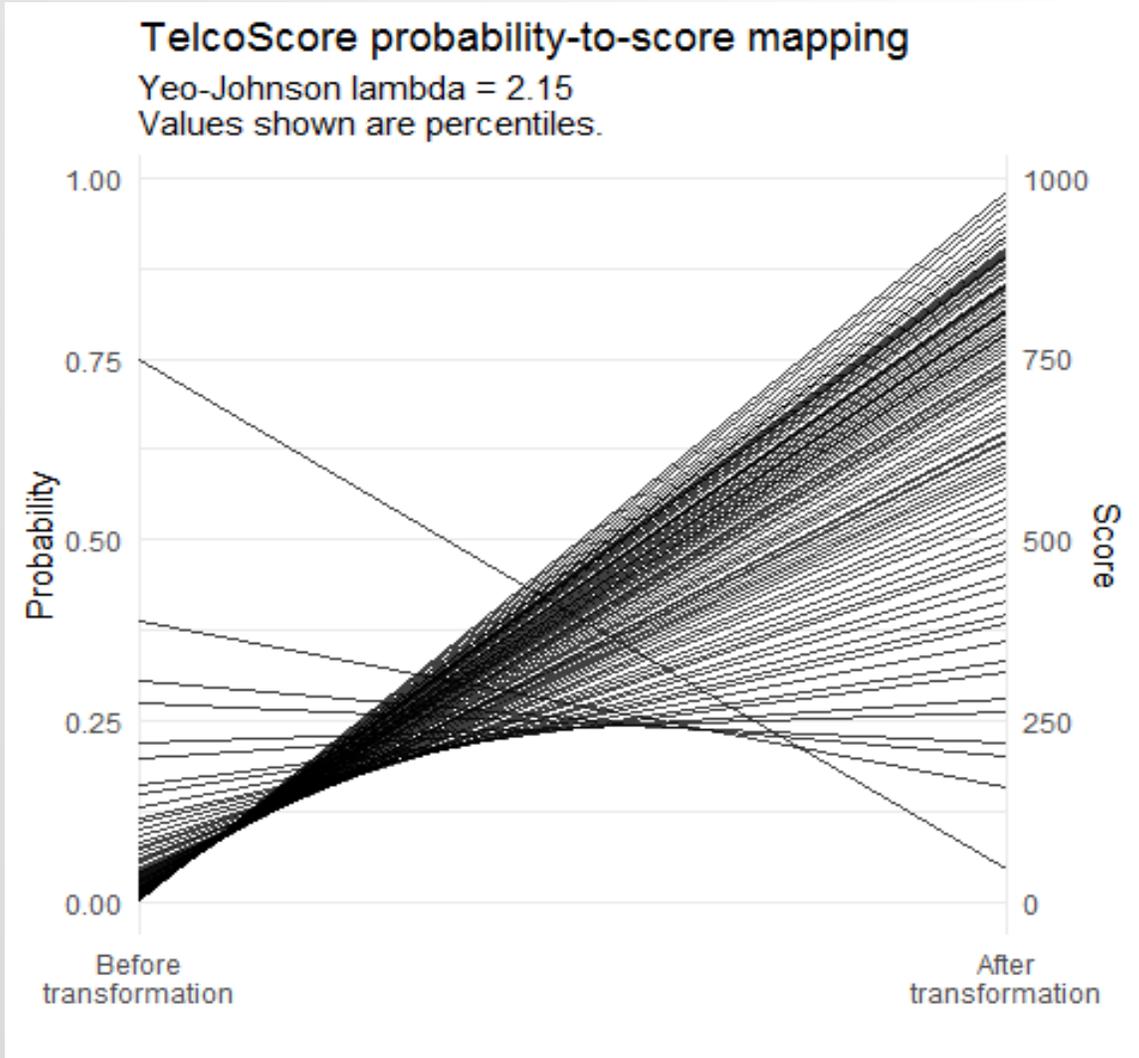
We have created a credit scoring proposition using MNO customer data that

- is fully compliant with privacy regs
- had low market entry costs
- is a standard product across the MNOs that was asked for by the market
- has proven to create value for both the MNOs as well as the FS vertical

We are now in discussions with other countries to discuss and evaluate opportunities to create a risk scoring proposition for their banks.

APPENDIX

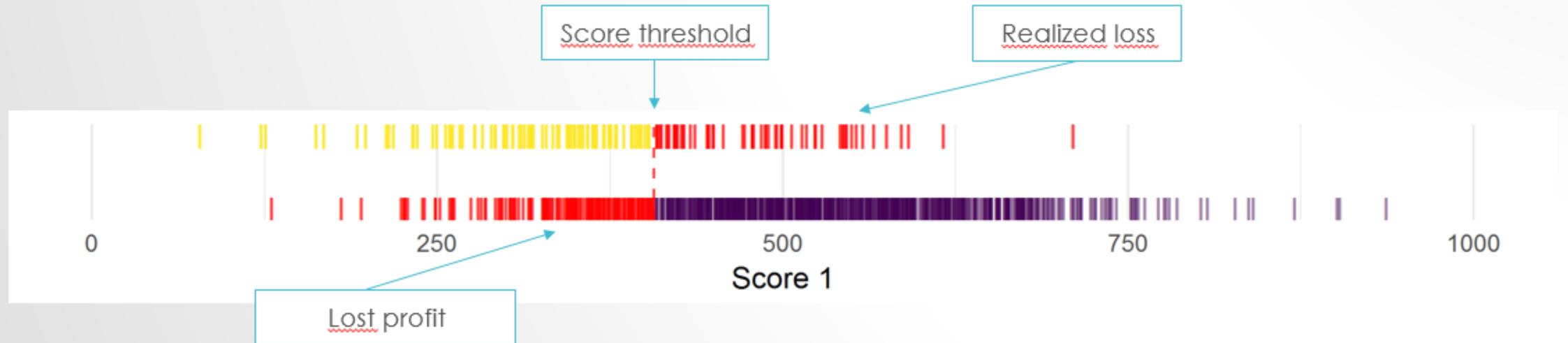
CONVERTING PROBABILITY INTO THE SCORE

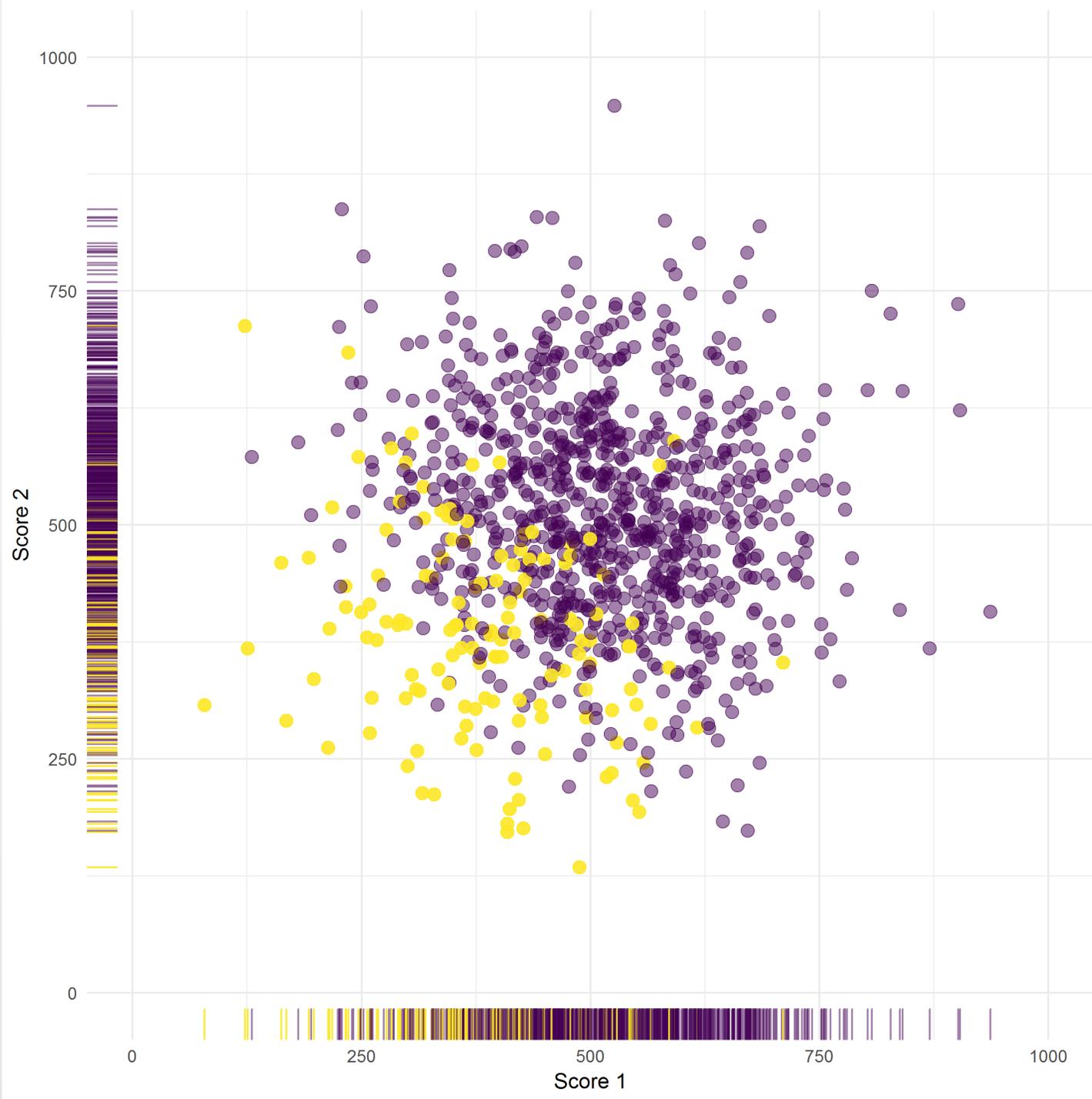


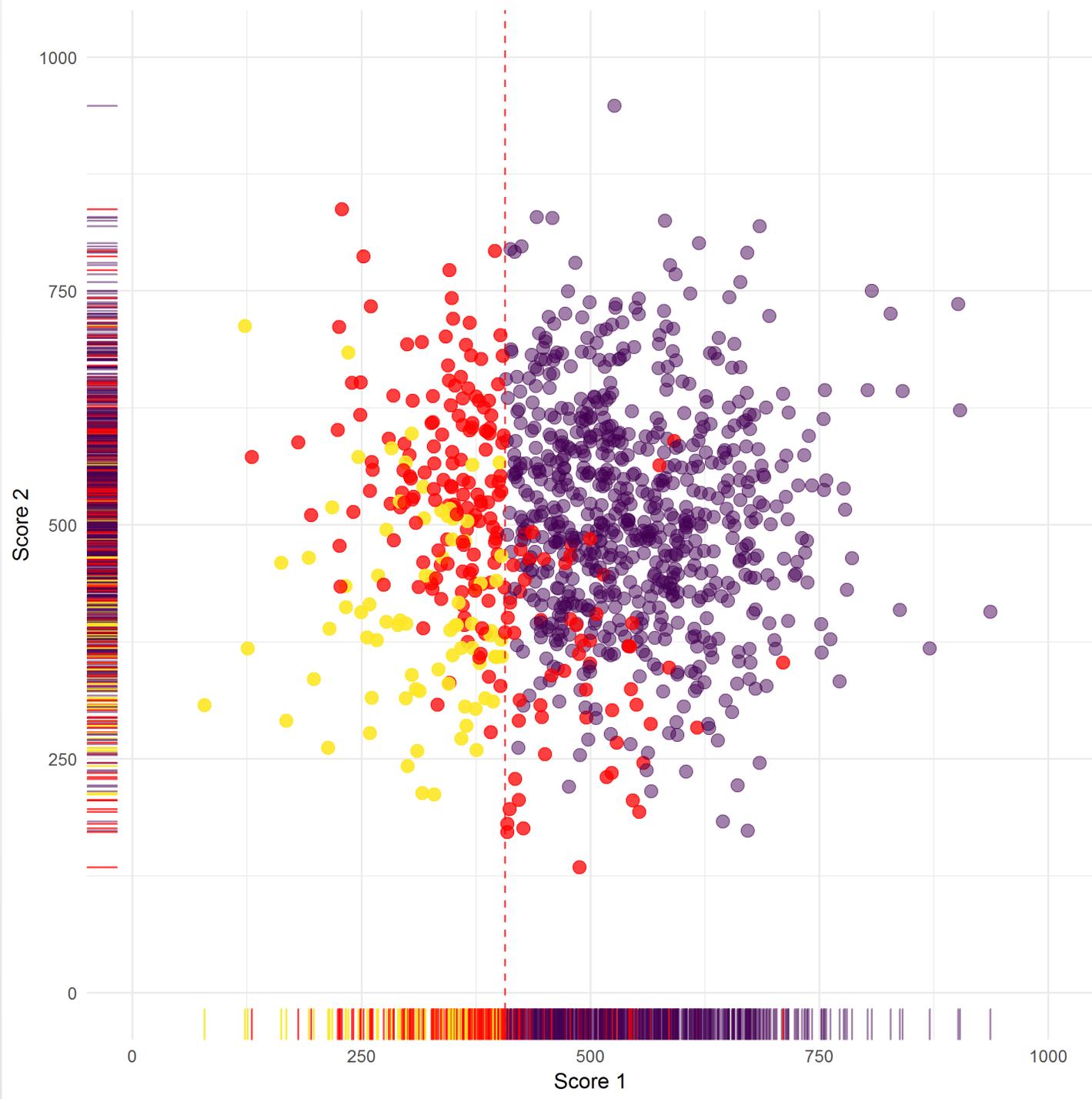
Graph shows how the default probability score translates to a risk score that is more commonly understood

RATING	SCORE	DEFAULT RATE
VERY BAD	100	100,00%
BAD	200	81,25%
POOR	300	40,82%
FAIR	400	17,52%
GOOD	500	5,98%
VERY GOOD	600	1,53%
EXCELENT	700	0,43%
EXCELENT	800	0,00%

TELCOSCORE REFINES EXISTING SCORING







TelcoScore (Score 2)
will provide
additional
information to help
a bank make a
better decision rule.

