



REDO

**Digital nano-lending con scoring
non convenzionale: uno spazio
di mercato inesplorato**

– Agenda –

- Introduction
- Market Opportunity
- How it Works

– Introduction –

- Redo is a cloud based mobile platform to issue nano loan in real-time;
- Redo has developed a repayment probability model based on cell phone data for a fast and inexpensive assessment;
- Redo aims to address an unmet market that, in Italy only, we estimate a more than 20M people;
- Redo expects lending and payment to converge over time.

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More and more people look for options to finance small and unexpected expenses

– Evidences of Nano Lending Need –

- 10% of the US personal lending customers get a loan to fund small current expenses (i.e., utility bills)¹ ;
- BNPL loans grew from 16.8M in 2019 to 180M in 2021²;
- In China, micro-lending platforms had grown from 10 in 2010 to 1,575 in 2014³;
- 1/3 of the EU population would look for financing to support an unexpected expense of €400⁴.

In Asia, Africa and Latam nano-lending is extremely popular, pushing local authorities for an industry regulation if not in place (i.e.: China, Kenya).

Sources:

- (1): LendingTree: Q4 - 2022 - <https://www.lendingtree.com/personal/personal-loans-statistics/>;
(2): Consumer Financial Protection Bureau - 2022 - Buy Now Pay Later : Market trends and consumer impact;
(3): Elsevier 05-2022: "Social capital, phone call activities and borrower default in mobile micro-lending";
(4): Eurostat 2019: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200505-1>.

Financial service providers have so far neglected this potential demand because of their operations' inefficiency and IT legacy

– *Reasons for Not Serving Small Loans* –

- High loan origination cost due to inefficient and not standardized procedures (i.e., average personal loan application cost in Italy €40-€70)¹;
- Inconsistent evaluation creditworthiness process as financial institutions do not offer small loans;
- Lack of robust and easy-to-integrate nano-lending platforms for regulated markets.

Sources: OCS Internal Analysis - 2023

Even credit cards are unable to answer the demand for small ticket financing

– Payment Cards in the EU¹ –

	2014	2021	Growth
Nr. of Cards with Debit Function	417M	554M	32%
Nr. of Cards with Credit Function	49M	55M	12%

Only 12.3% of the EU population has a credit card²

Source:

1. European Central Bank – Payment Statistics 2022 - <https://sdw.ecb.europa.eu/reports.do?node=1000001964>;
2. Eurostat: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_and_population_change_statistics

Nevertheless, recent trends suggest that financial service providers are starting to take into consideration this space

– Some Trends to Nano Lending –

- A limited number of lenders started to offer small personal loans into regulated markets (i.e., Compass, Lydia, PendFed, Upstart,...);
- Some banks are offering their customers the option to pay by installments debit cards purchases (i.e., PayandPlan BBVA, Banca Intesa,..);
- Prominent e-Commerce players launched revolving lines to finance online purchases (i.e., Amazon-Cofidis).

Redo's customers are banks and financial institutions. We expect them to offer nano-lending to existing customers and new market segments

–Redo's Customers–



Tier 1

Top 5 personal loans provider of each target market. Representing more than 55-60% of the total annual production.

Tier 2/3

Other lenders represent up to 20% of the market.

–Nano-Lending Users–



UPSELLING

Offer nano-lending to existing customers:

- Higher retention;
- Increase market share;
- Risk control.

NEW SEGMENTS

Attract new customers in different segments traditionally not served by lenders.

Millennials (27-42) could become the largest borrowers over the next ten years¹

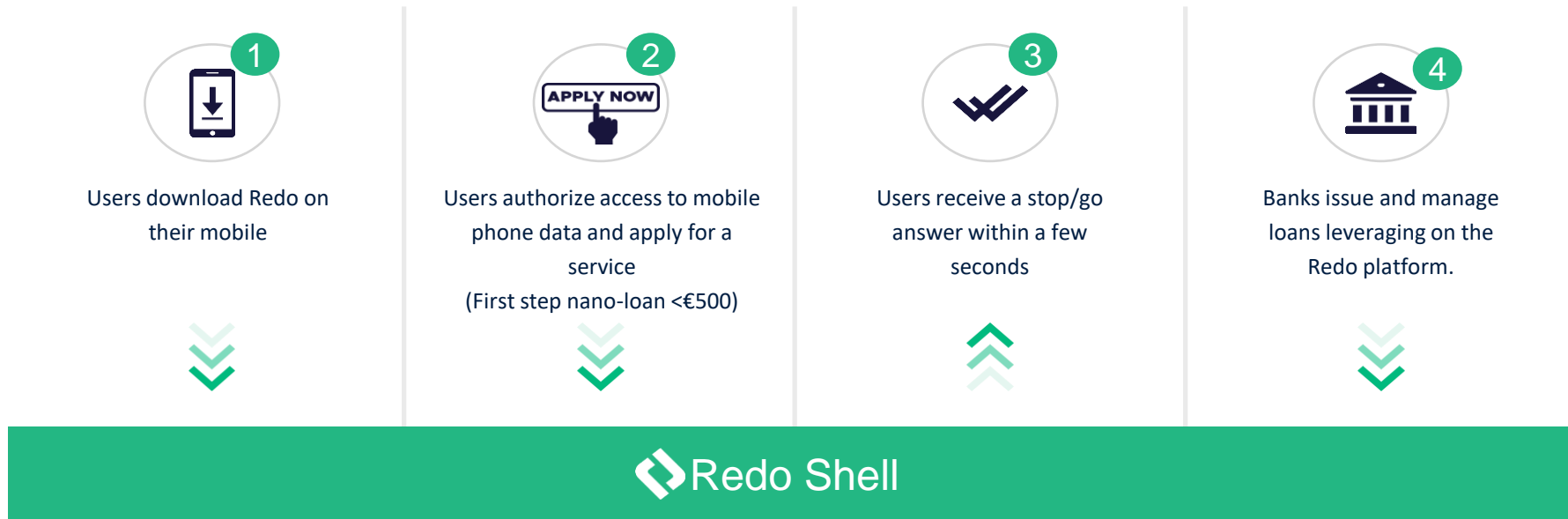
Source: Federal Reserve, Morgan Stanley Research forecasts –
59% of Experian loan requests come from millennials: TransUnion CIBIL Consumer Bureau Jan. 2019-Jan. 2021

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Few minutes from the app install/access to cash delivery

– Customer Journey –



Redo Shell is a non-conventional scoring model based on the customers' mobile phone data

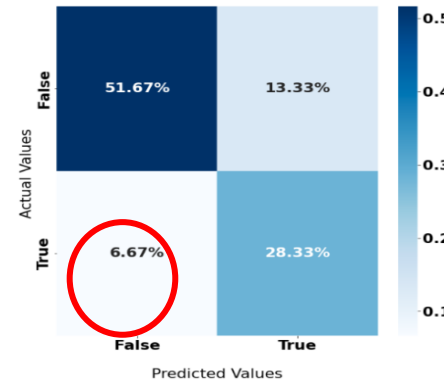
– Redo Shell Models –

Redo Shell is an evidence-based (i.e., data and knowledge) A.I.-based decision support system.

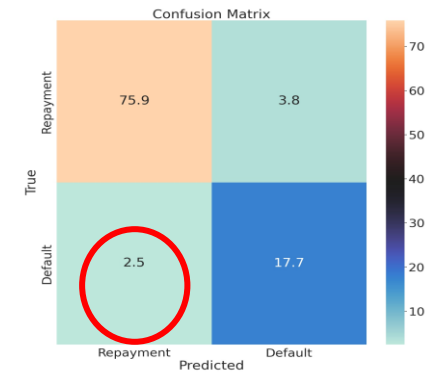
Redo Shell:

- Extracts relevant features from raw data predictors of a repayment;
- Uses tailored forecasting models to access repayment probability based on consumers' behaviors;
- Constantly updates the prediction model.

– Model 1 –



– Model 2 –



By applying constraints on the model hyper-parameters during the A.I. learning process, the baseline (logistic regression) model has an **expected default rate of 2.5%**

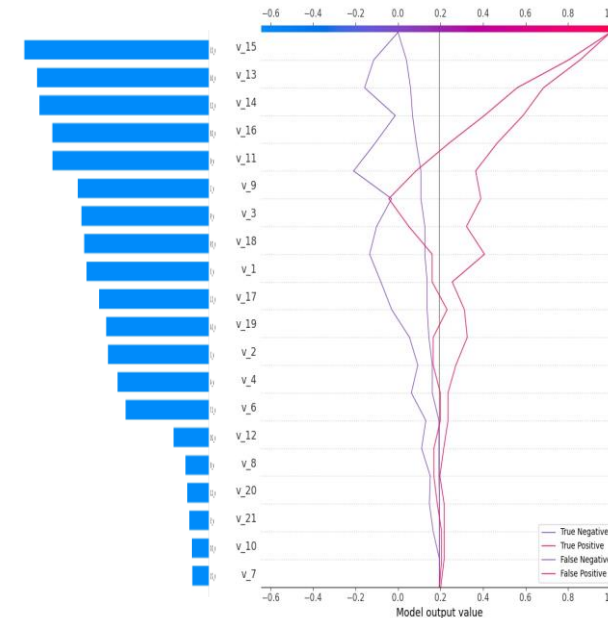
Redo Shell has been designed following the EU Commission ethics guidelines for trustworthy A.I.

– Key A.I. Guidelines –



Sources: <https://ec.europa.eu/futurium/en/ai-alliance-consultation/guidelines/1.html#Human%20agency>

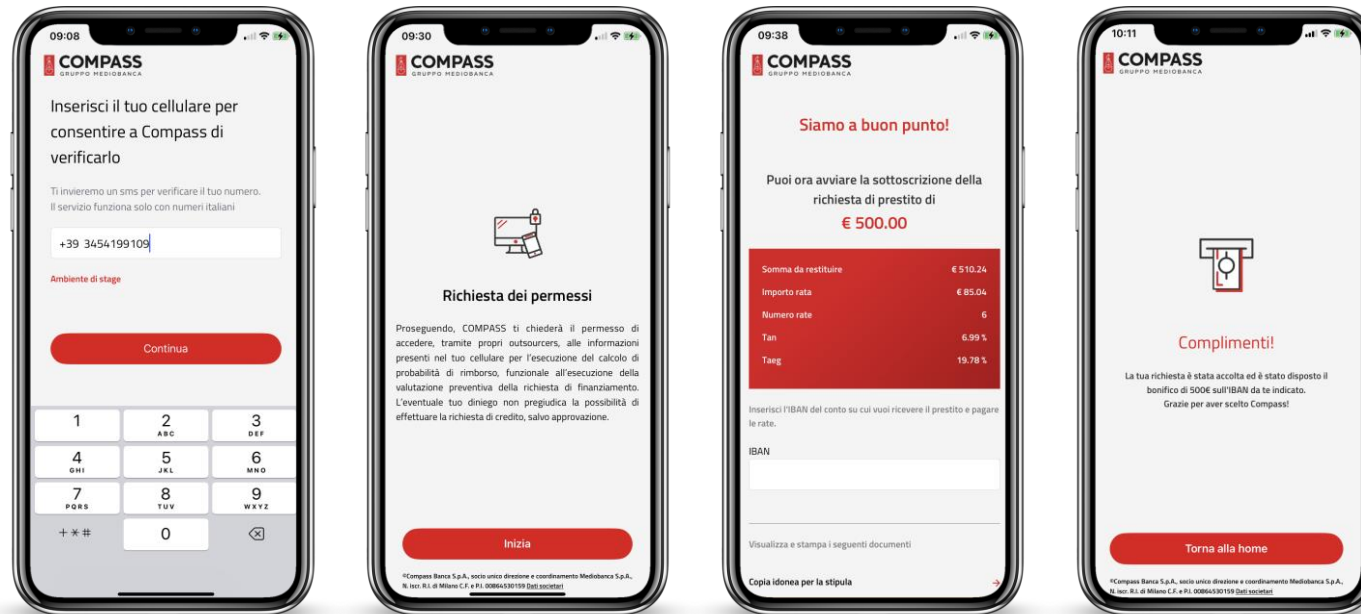
– Explainability of Redo Shell: features relevance –



(*) We used **Shap Analysis** to explain any ML model's output by measuring each feature's relevance in the model outcome.

A flowless and customizable user experience

–€ 500 per i tuoi desideri–



Using mobile phone data to predict payment probability is based on extensive academic studies and real adoption

– Sources Selection –

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Progress in Artificial Intelligence, 2017

Effective credit scoring using limited mobile phone data

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Behavior revealed in mobile phone usage predicts credit repayment

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The World Bank, 2019

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Springer International Publishing, 2020

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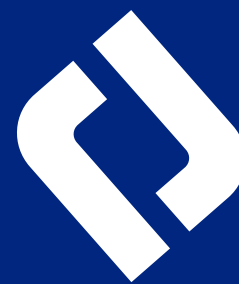
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arXiv [cs.CY], 2020



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