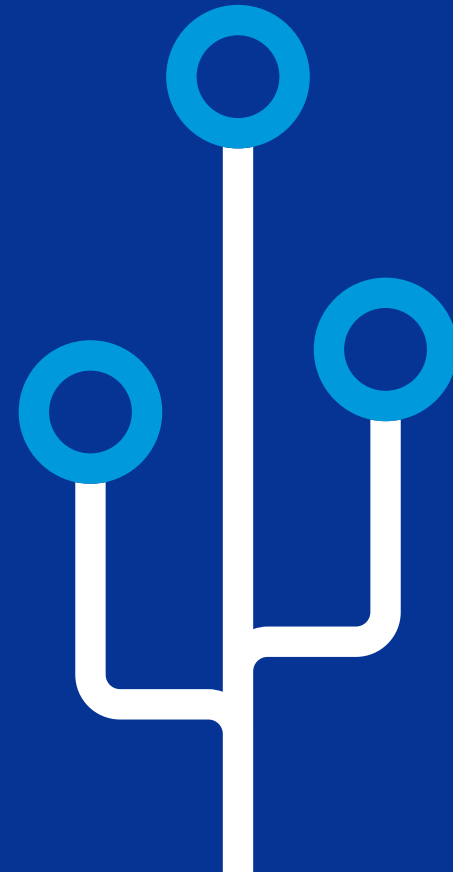# fabrick

Personal Finance Management

Open Banking

Why PFM?

Why BANKS need PFM?

User's benefits

- ✓ An experience that makes the customer feel "at the center" of the service.

- ✓ Tools to analyze, track and plan their financial management

- ✓ Include all accounts in one fulfilling experience.

- ✓ Personalized, relevant service and a dedicated digital saving coach.

Bank's benefits

- ✓ Smooth integration with core banking system.

- ✓ Native integration to PSD2 API Ecosystem for Account Aggregation

- ✓ The base of a data strategy for the future of banking

- ✓ Loyalty in a long term relationship

1. PFM User are more **profitable**.
2. Neo-banks and non-banking competitors are acquiring millions of customers using PFM. **Millennials are attracted by with a better UX and a personalized service**.
3. PFM **reduces dramatically the churn** rate.
4. Customer Journey is more and more important. More than the banking service itself. **PFM with a multibank approach disintermediates traditional banking services.**

fabrick

SHAPING FINANCE, TOGETHER

There are three ways of relating to **innovation**: reacting, supporting or anticipating it. Even when innovation is triggered by a widely announced directive, as in the case of **PSD2**, which has definitively opened the banking market, allowing the disintermediation of services no longer tied to a single provider.

Fabrick's team was the first in Italy to be found ready when PSD2 came into force, thanks to new organizational methods in the financial landscape.

The secret to being ready is to leave early, as it was done for one of the flagship products of Fabrick's offer, **Personal Financial Management (PFM)**.

Personal Financial Management

PFM is a software for personal financial management, a tool that allows you to customize and modify easily the flows of financial data in a highly evolved way. An instrument that had its usefulness even before the new Directive, but which in the aftermath of the adoption of PSD2 has significantly increased its importance.

Our PFM had space even where there was no PSD2, but the new openness makes everything exponential, because **PSD2** makes account aggregation finally possible, the possibility of viewing and managing within a single application all the current accounts of the same end customer, even of these are at different banking institutions.

fabrick
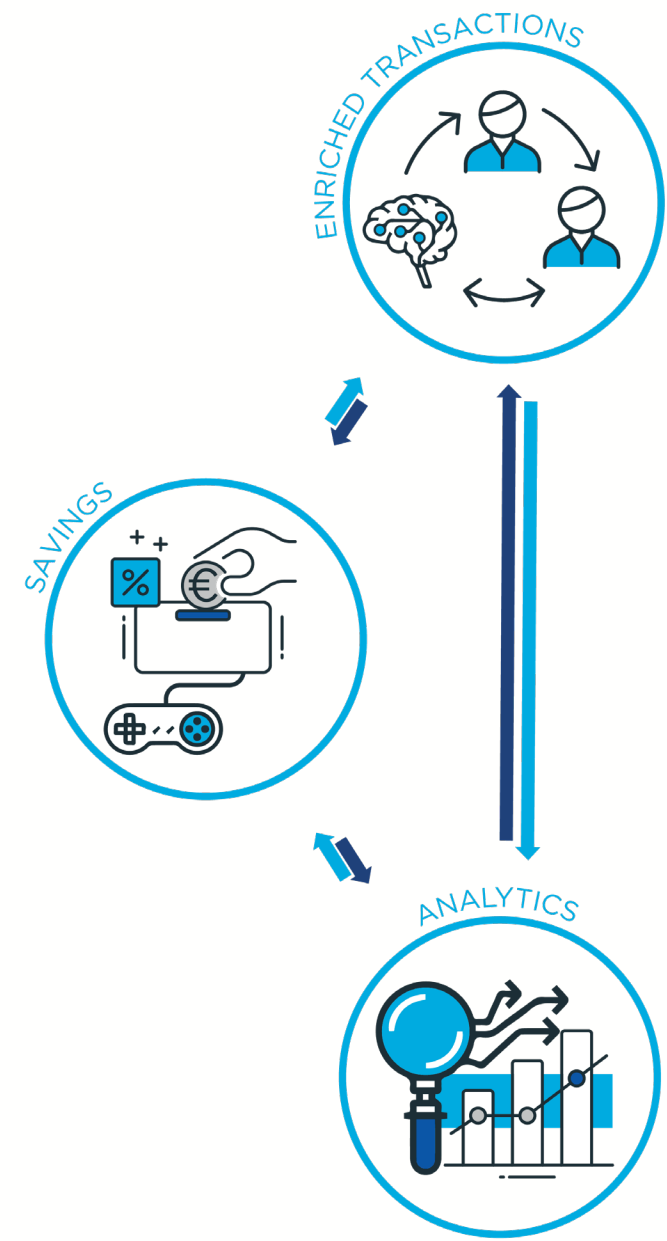SHAPING FINANCE, TOGETHER

One solution – Many modules

The PFM is modular, built around three core blocks.

The first is that of the so-called **enriched transactions module**, in which artificial intelligence solutions applied to payments allow the automatic recognition of future spending forecasts, for example by anticipating bills, mortgage payments and various deadlines.
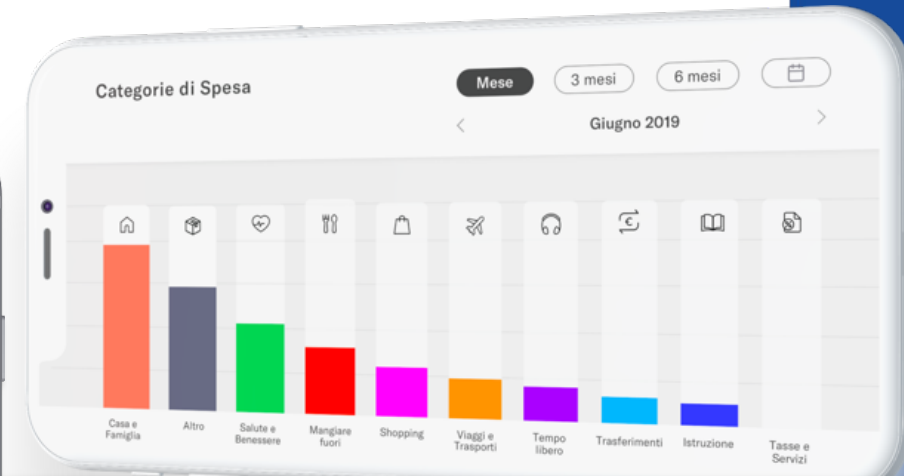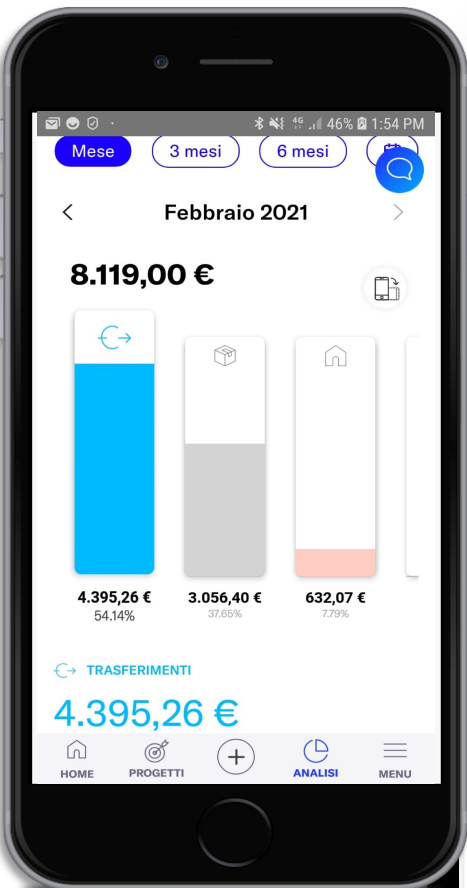
Then there is the **savings module**, in which very gamified saving paths can be created: the customer can decide whether to set aside money in a recurring and automatic way or in a manual way, for example with rounding expenses, allocating the change resulting from credit card transactions to the account.

Finally, there is the **analytics module**, which provides advanced search tools that include the services of the first two modules but come up with customized options, such as alerts in "push" mode, which automatically warn you of exceeding the limits of spending.

"Each module is interdependent from the others but also independent". Moreover, to the modules
developed by Fabrick it is possible to add also **plugins** developed by **fintech startups or third party providers.**

ENRICHED TRANSACTIONS

SAVINGS

ANALYTICS

fabrick
SHAPING FINANCE, TOGETHER

Enriched Transactions

Fabrick's PFM **enriches transaction** information even starting from an extremely poor description.
Determine "**what**" a transaction is, **which payment methods** are used, in **which expense or income categories**, whether or not the transactions are **recurring**.
And again : at which **merchant** was the shopping made and where.
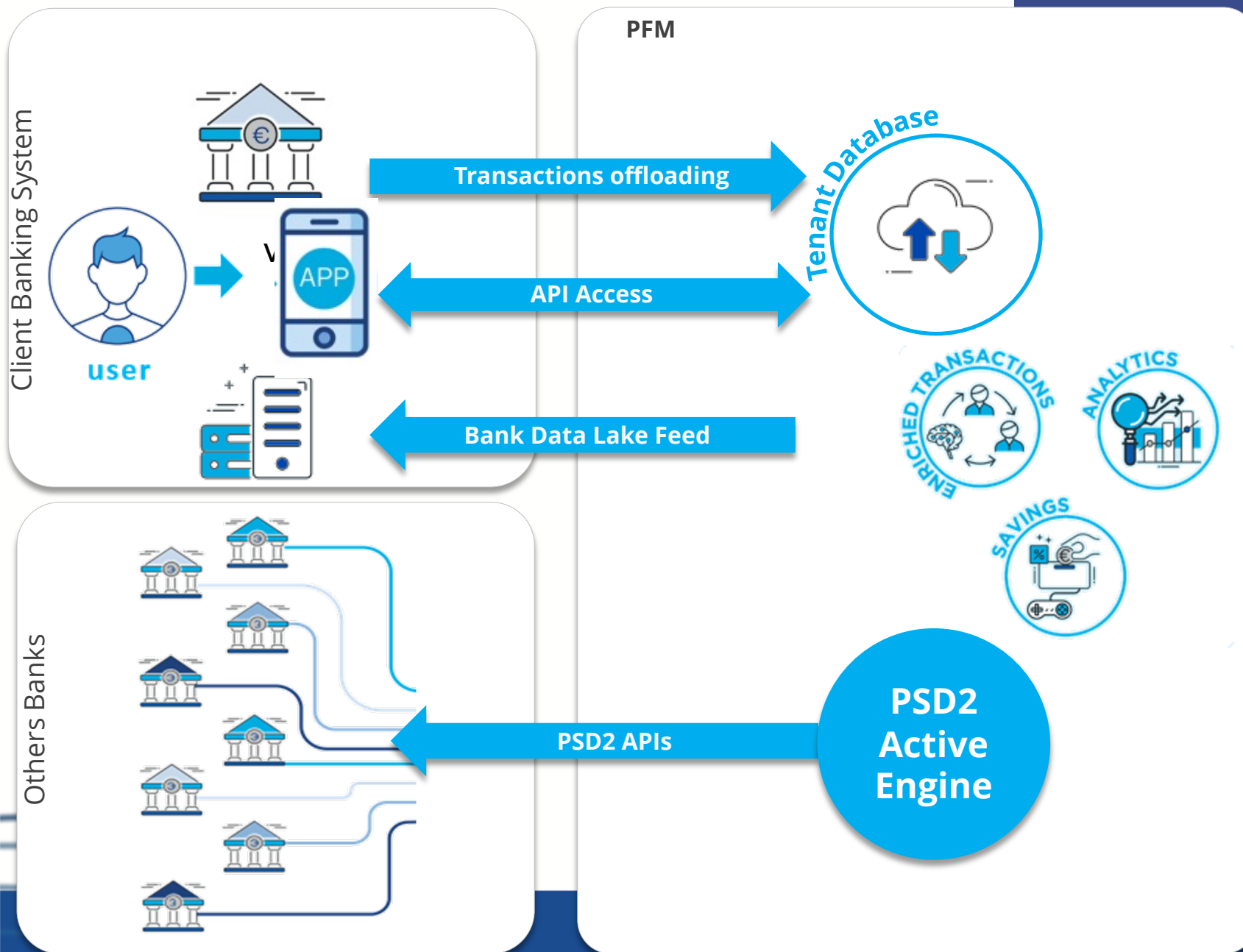Precisely categorizing is the cornerstone of the data strategy.

fabrick
SHAPING FINANCE, TOGETHER

From Raw Data

```json
{
  "amount": {
    "currency": "EUR",
    "value": "-332.250"
  },
  "bookingDatetime": "2019-10-02T22:00:00.000+0000",
  "valueDatetime": "2019-10-03T22:00:00.000+0000",
  "bankTransactionCode": null,
  "chequeId": "0",
  "creditorAccount": null,
  "creditorId": null,
  "creditorName": null,
  "debtorAccount": null,
  "debtorName": null,
  "endToEndId": null,
  "entryReference": null,
  "exchangeRate": null,
  "mandateId": null,
  "proprietaryBankTransactionCode": null,
  "purposeCode": null,
  "reference": "09266000147564931120191003000010",
  "remittanceInformationStructured": null,
  "remittanceInformationUnstructured":
    "DISPOSIZIONE DI BONIFICO BONIFICO  SEPA"
  "ultimateCreditor": null,
  "ultimateDebtor": null
}
```

To Labeled Data

```json
{
    id: 228732,
    bankId: "1",
    bankProfileId: "11207",
    accountId: 23488,
    userId: "6132",
    tppUid: "150251",
    tipoOperazione: "bon",
    importo: 332.25,
    stato: "ESAURITO",
    tipo: "outcome",
    causale: "DISPOSIZIONE DI BONIFICO BONIFICO SEPA ...",
    data: 1570053600000,
    valueDate: 1570140000000,
    createdDate: 1576575359010,
    accounted: true,
    recurrent: true,
    categoria: "home",
    sottoCategoria: "rent",
    vecchiaCategoria: null,
    vecchiaSottoCategoria: null,
    recurrentManual: null,
    nomeBeneficiario: STEFANOXXXXXXXXXX,
    reference: "09266000147564931120191003000010",
    entryReference: null,
    divisa: "EUR",
    eseguitoDa: MAUIRIZIOXXXXXXXX,
    ibanBeneficiario: IT03268XXXXXXXXXXXXXXXXXXXXXX,
}
```

fabrick

SHAPING FINANCE, TOGETHER

How does it work? Let's take a look inside the engine hood...

PFM

Client Banking System

user

APP

Transactions offloading

API Access

Bank Data Lake Feed

Tenant Database

ENRICHED TRANSACTIONS

ANALYTICS

SAVINGS

Others Banks

PSD2 APIs

PSD2 Active Engine

The PFM delivers its service in **Cloud SaaS** (Software as a service) mode.

It is possible to feed the PFM with payment transactions in **2** ways:

1. Directly from the core banking system via "**transactions off loading**"

2. The transactions of the other banks are acquired by Fabrick's **PSD2 Active Engine**® to which the PFM is "natively" integrated

Once enriched, the transactions are available via **REST APIs** for transactional use or in "asynchronous" mode to populate bank's **data lake.**

fabrick

SHAPING FINANCE, TOGETHER

Fabrick PFM Multi-bank features are "turn key"
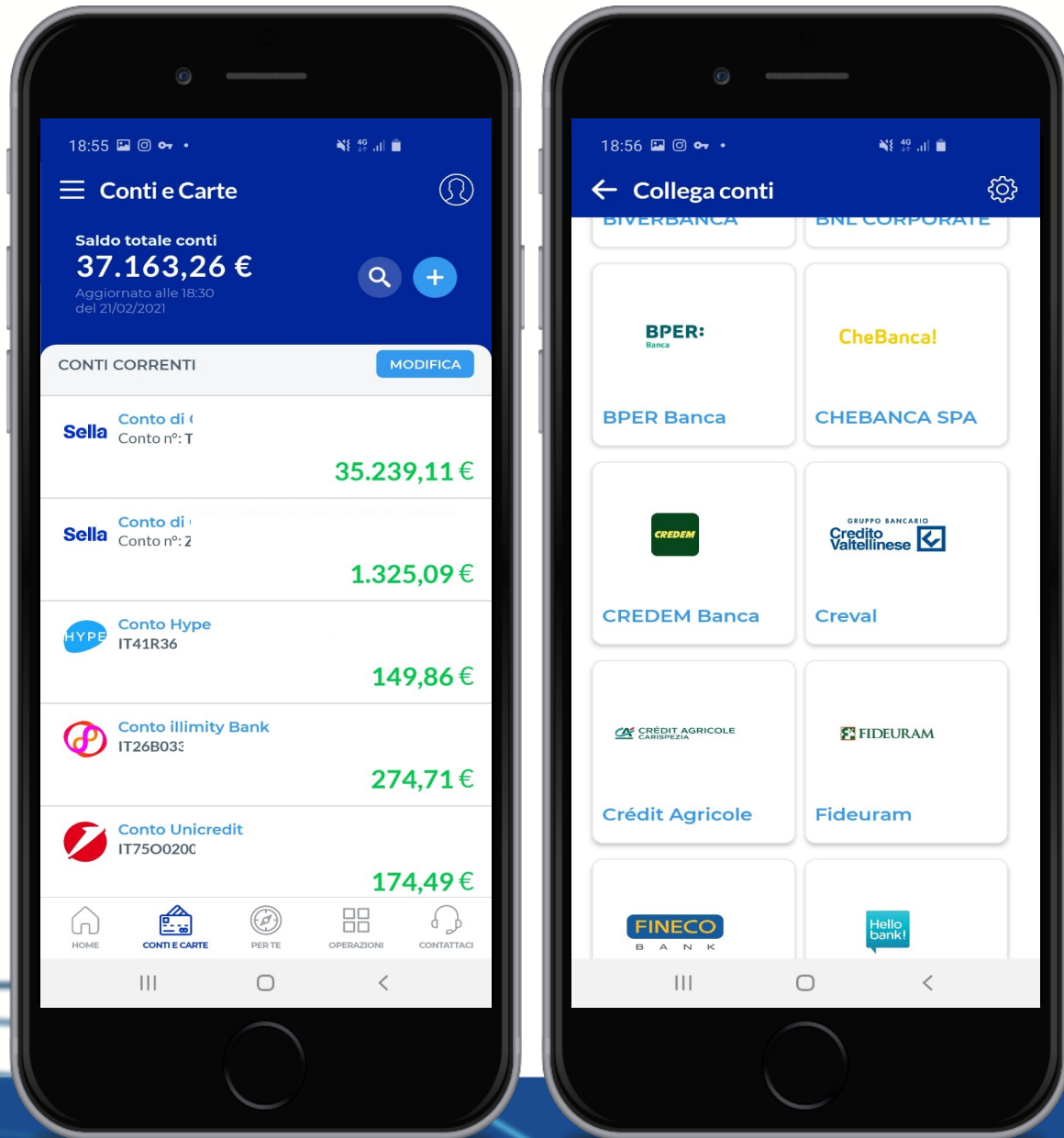
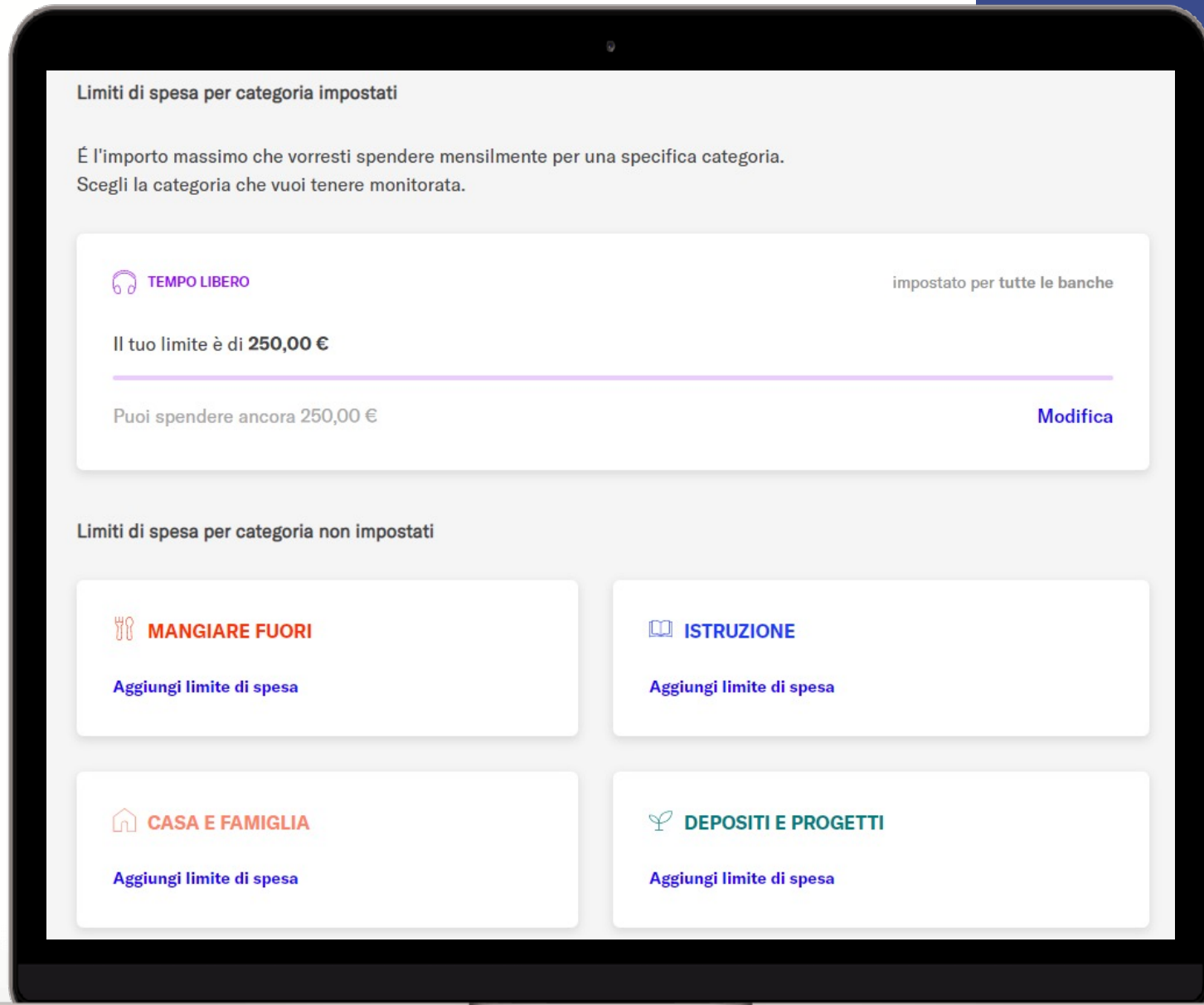- The Fabrick PFM leverages the "**Fabrick PSD2 Active Engine**" to allow customers to access the accounts of other institutions.

- The categorization and all the analytical functions of the PFM are thus **homogeneous** and comprehensive of all the customer's banking management.

- PSD2 Active Engine is connected to **98**% of the Italian banks (including challenger and neo-banks) and successfully categorizes

their transactions even when the outgoing information set is extremely poor thanks to its **semantic analysis engine**.

- Fabrick was the first company to build a natively multi-bank PFM leveraging the PSD2 API and can help you build a unique **customer journey** by helping you, with its great experience, to unravel the existing differences bank by bank.

- **One API for all banks.**

Help your client manage expenditures

Limiti di spesa per categoria impostati

É l'importo massimo che vorresti spendere mensilmente per una specifica categoria.
Scegli la categoria che vuoi tenere monitorata.

🎧 **TEMPO LIBERO**   impostato per **tutte le banche**

Il tuo limite è di **250,00 €**

Puoi spendere ancora 250,00 €   **Modifica**

Limiti di spesa per categoria non impostati

🍴 **MANGIARE FUORI**   📖 **ISTRUZIONE**

Aggiungi limite di spesa   Aggiungi limite di spesa

🏠 **CASA E FAMIGLIA**   🌱 **DEPOSITI E PROGETTI**

Aggiungi limite di spesa   Aggiungi limite di spesa

But where the hell is all my money going?

Through the **advanced statistics**, your customer will be able to carry out a careful analysis of expenses and revenues by planning their savings actions or modulating their projects.

For each expense category, allow your customer to **set limits, budgets and receive notifications**.

Do it for all the customer's banks or for one.

Categories and Subcategories for a careful analysis worthy of a coach!

5.645,80 €

| 2.639,81 € | 1.937,90 € | 871,33 € | 149,79 € | 36,12 € | 10,85 € | 0,00 € | 0,00 € | 0,00 € | 0,00 € | 0,00 € | 0,00 € |
| 46.76% | 34,32% | 15,43% | 2,65% | 0,64% | 0,19% | 0,00% | 0,00% | 0,00% | 0,00% | 0,00% | 0,00% |

fabrick
SHAPING FINANCE, TOGETHER

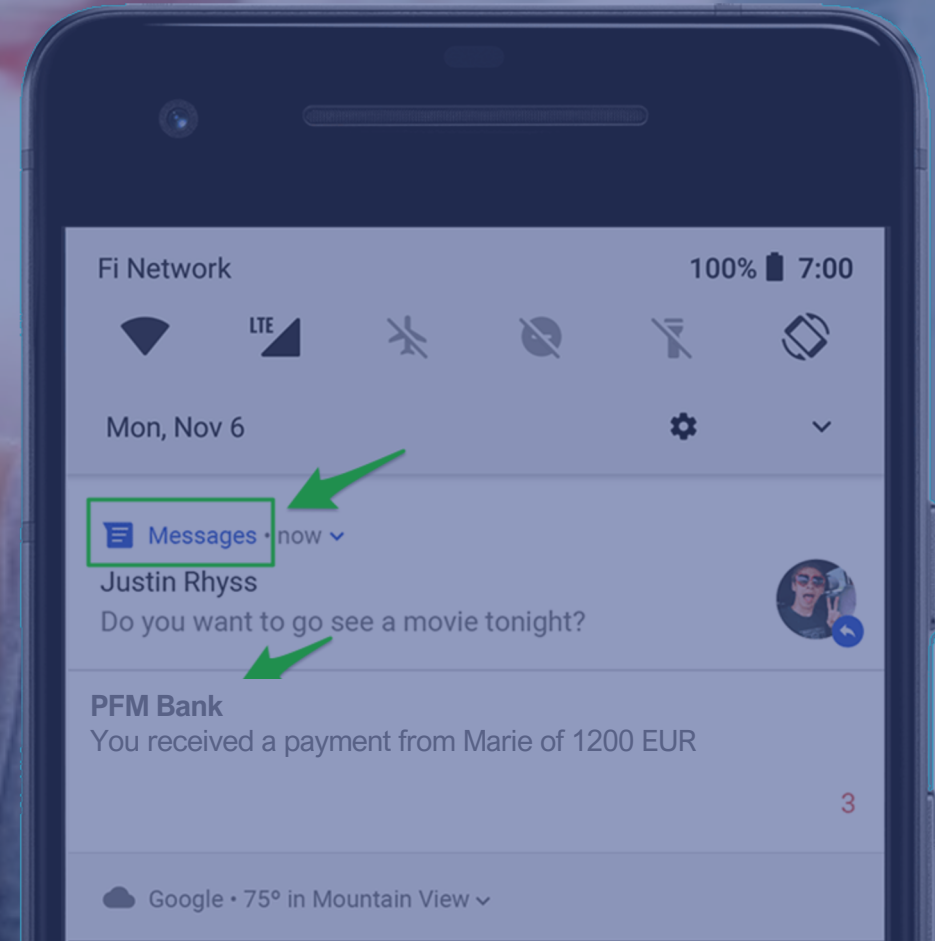# With PFM alert your customers are always aware about their accounting

Your client can keep track of all of his accounts (**including those of other banks**):

Each **payment**, account **balance**, **transactions**, trends and excesses on the spending limits set.
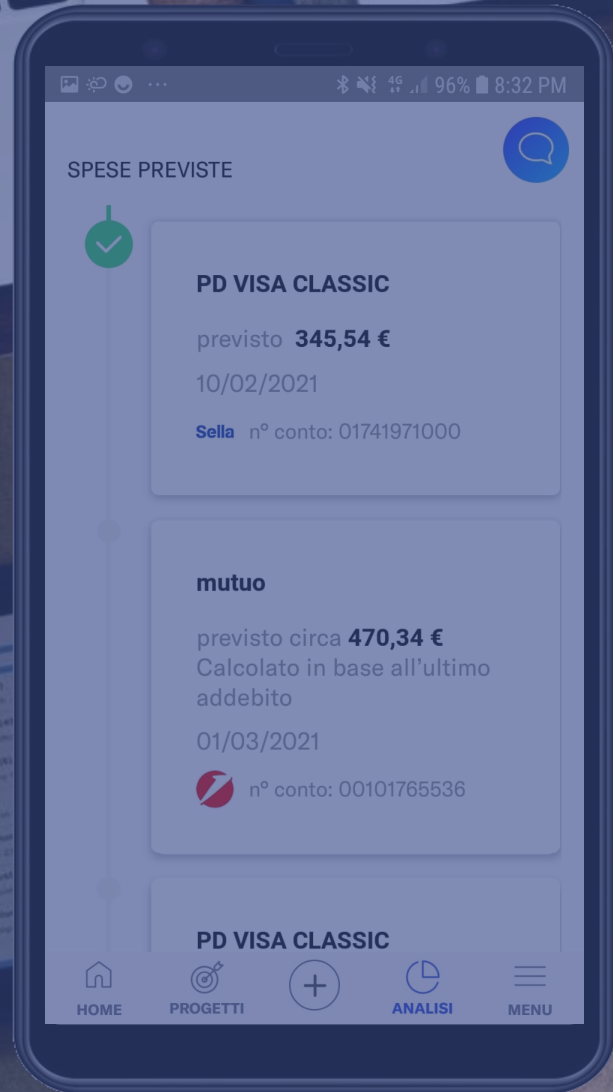
How savings projects continue.

If his friends collect money to pay for the pizza or the tennis game.

If someone logs into the account or if the PSD2 consents to access the accounts of other institutions are expiring.

Fi Network   100% 7:00

Mon, Nov 6

Messages · now

Justin Rhyss
Do you want to go see a movie tonight?

PFM Bank
You received a payment from Marie of 1200 EUR

Google · 75° in Mountain View

fabrick
SHAPING FINANCE, TOGETHER

Financial Calendar help the customer to schedule expenditures

SPESE PREVISTE

PD VISA CLASSIC
previsto **345,54 €**
10/02/2021
Sella n° conto: 01741971000

mutuo
previsto circa **470,34 €**
Calcolato in base all'ultimo addebito
01/03/2021
n° conto: 00101765536

PD VISA CLASSIC
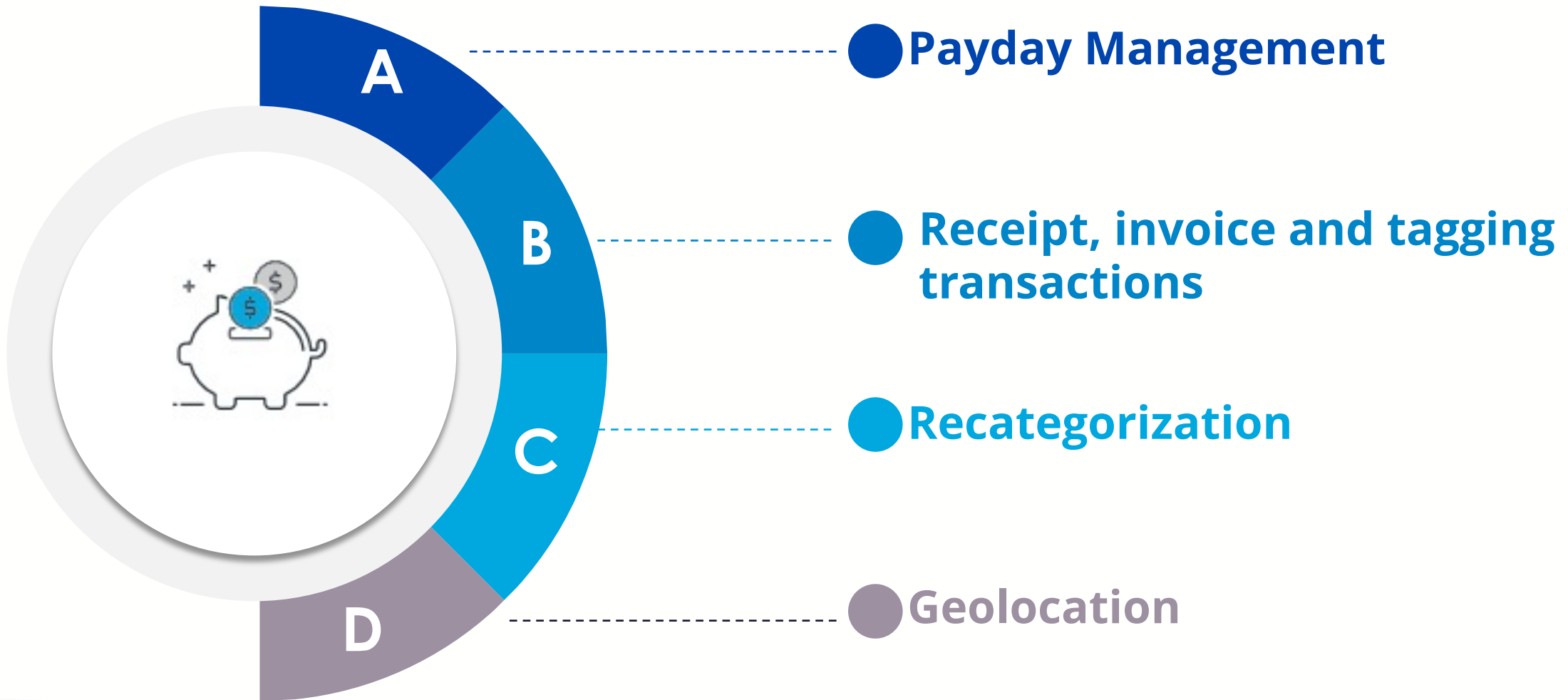
HOME   PROGETTI   ANALISI   MENU

Fabrick's PFM has the ability to discover **recurring expenses** autonomously basing upon the transaction history, the type of payments and description analysis.

This allows the customer to have a **schedule of expenses** and to be able to predict the progress of their finances.
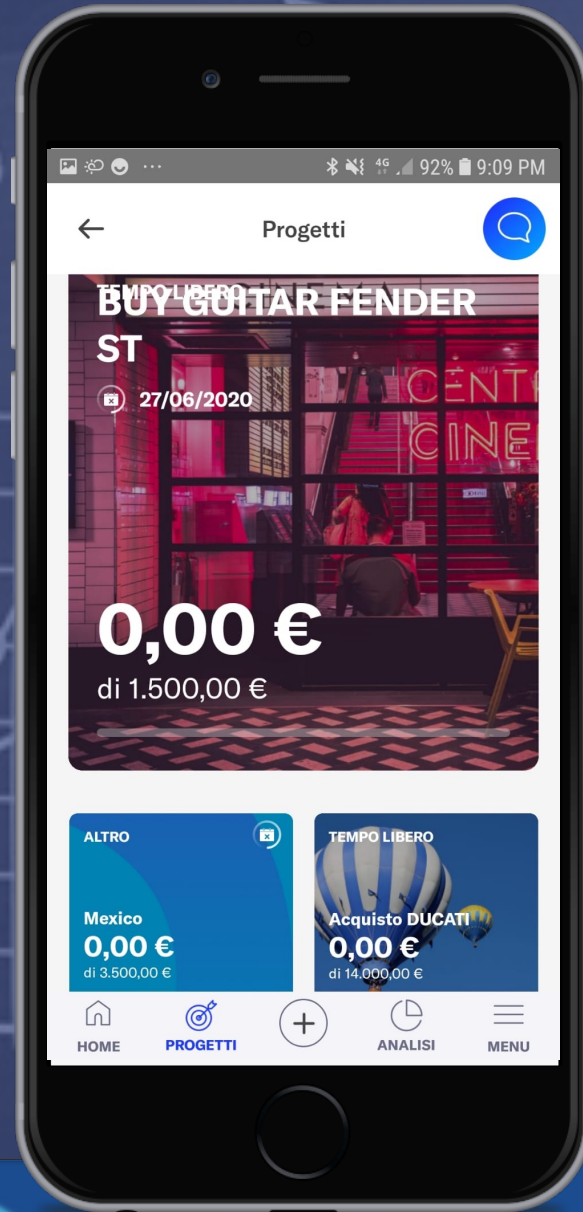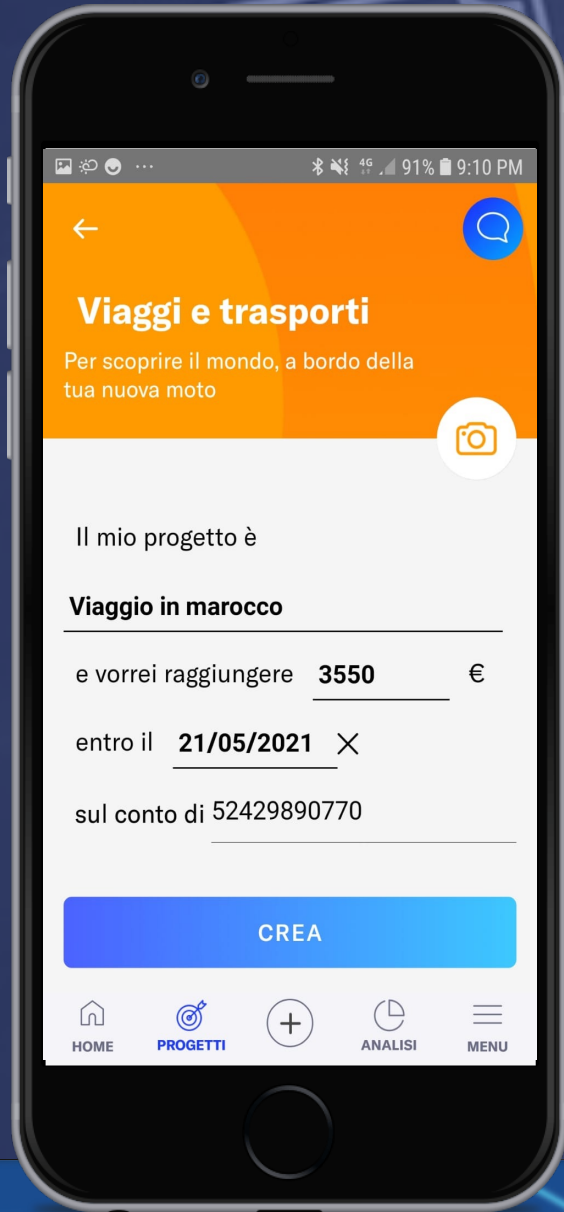
The customer will be **aware** of the mortgage payment, the credit card charge or the loan installment again.

fabrick
SHAPING FINANCE, TOGETHER

And other exciting features are available

A ● **Payday Management**

B ● **Receipt, invoice and tagging transactions**

C ● **Recategorization**

D ● **Geolocation**

fabrick
SHAPING FINANCE, TOGETHER

Savings Projects

Saving Projects helps the "financial education" of your customer

"Savings projects" are a great way to help your customers save and create "**financial culture**".

The customer creates a **project** with a goal with respect to a predefined deadline.

Contributions to the project can be **manual** (on the client's initiative each time) or **automatic** (managed by the digital coach).

The **digital coach** will send your client notifications with the right incentive necessary to achieve the goals.

fabrick
SHAPING FINANCE, TOGETHER

Some ideas to manage customer savings on the "bank side"

While the PFM manages **the life-cycle of a saving project,** the bank can associate it to a **real saving product** or, in any case, freeze "**in the real world**" the money that have been put into the piggy-bank.

Here are **3 ways** to do it with the help of fabrick into the "**core banking**" accounting system.

01

Gamification
The amount of money "saved" is not really "put aside" but the PFM Engine does not include it in all balance calls.

Easy Medium Hard

02

Rolling Reservation
Based on the variations of the amount to be frozen, the PFM requests the core banking system to make a "rolling reservation" so as not to make the sum available for expenses.

Easy **Medium** Hard

03

Deposit Account
A true "multiline" deposit account is opened for each PFM client. Based on changes in money in projects, the PFM triggers the creation of new lines and transfers of money from the master account to the deposit account lines.

Easy Medium **Hard**

fabrick
SHAPING FINANCE, TOGETHER

Let your customer save money with rounding of change when he pays with card
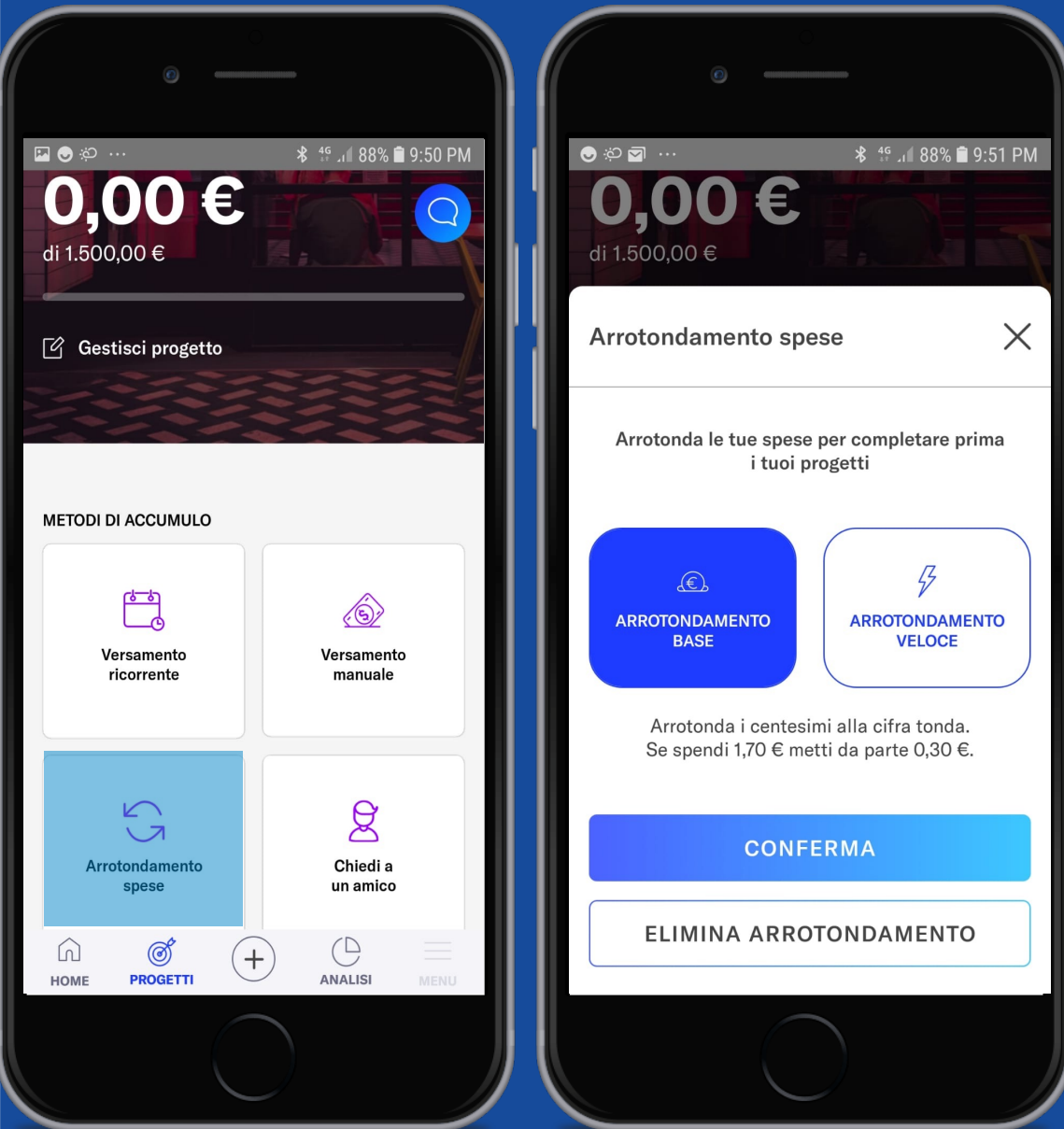
The PFM is powered by **all customer payment transactions**

It is therefore possible to create **savings triggers** on a specific project based on the rounding of card payments.

Basically, Fabrick's PFM manages **rounding** to the "euro" or "ten euro" but it is possible to imagine creating "ad hoc" rules for payments.

Let your customer reach his **saving goal paying** the coffee day by day (!)

And other exciting features are available

Sub projects can be managed in order to let the customer to achieve "Intermediate" goals in his long walk to his saving target.

Feed projects with friends requesting to be helped. This can be used also to collect money together for a travel or a trip .

A coach is always ready to spur your costumer via notification on your smartphone.
20% of your goal reached.
50% of your goal reached.
Console him on failures (target not reached).
Celebrate the success (target reached).

Ciao,
ho espresso il desiderio Mexico e PFM BANK mi sta aiutando a realizzarlo.
Vuoi aiutarmi? Non ti resta che fare un bonifico sull'IBAN IT26B03395129XXXXCC29890770 inserendo l'intestatario GIULIO ROSSI e nella causale 0167.

Realizza anche tu il tuo desiderio. Scopri di più subank pfm.com o scarica l'app   22:36

22:36
22:36
22:36
22:36
22:36
22:37
22:37

Scrivi un messaggio

fabrick
SHAPING FINANCE, TOGETHER

Analytics

Banking and Data is an "undiscovered treasure". The other side of PFM

Pressure on Bank Margins

Estimates suggest that up to **30 percent** of traditional bank revenues could disappear over the next two decades thanks to the threat from new digital players, regulatory change and the adoption of cryptocurrencies powered by blockchain.

Data leverage of GAFAM

Google generated around **US$90 billion** in revenue last year, largely made up of advertising revenue which is powered by data insights. There are also over 15 big data analytics pure play firms now valued at over **US$1 billion.**

Margins

Value

DATA STRATEGY REASON WHY

Monetise

Bank Experience

How to get value…

The value is there but how banks use their data **to provide actionable insights to others**, not the data itself, is the key to realising this new value.

And in banking sector?

One large US bank, for example, has added US$1.2 billion in new annual revenues (**1.5% of total annual revenue**) by partnering/co-branding with merchants executing marketing campaigns powered by data insights to increase sales conversions. The bank raised its conversion rate **on targeted marketing to 3.5 percent against an industry average of 0.4 percent.**

SOURCE: Accenture Strategy and Fabrick Intelligence

What can the banks do about?

INSIGHTS PROVIDER

Customer offers enable third parties to target tailored marketing offers and promotions at tightly-defined customer segments. While potentially the highest value model of all, it also comes with the greatest degree of risk and requires sophisticated data capabilities to realize at scale.

DATA MERCHANT

As the name suggests, data merchants sell their data to third parties who, in turn, use it to generate and sell insights. This model has very low barriers to entry, but is arguably not maximising value and operating at the bottom of the data value chain.
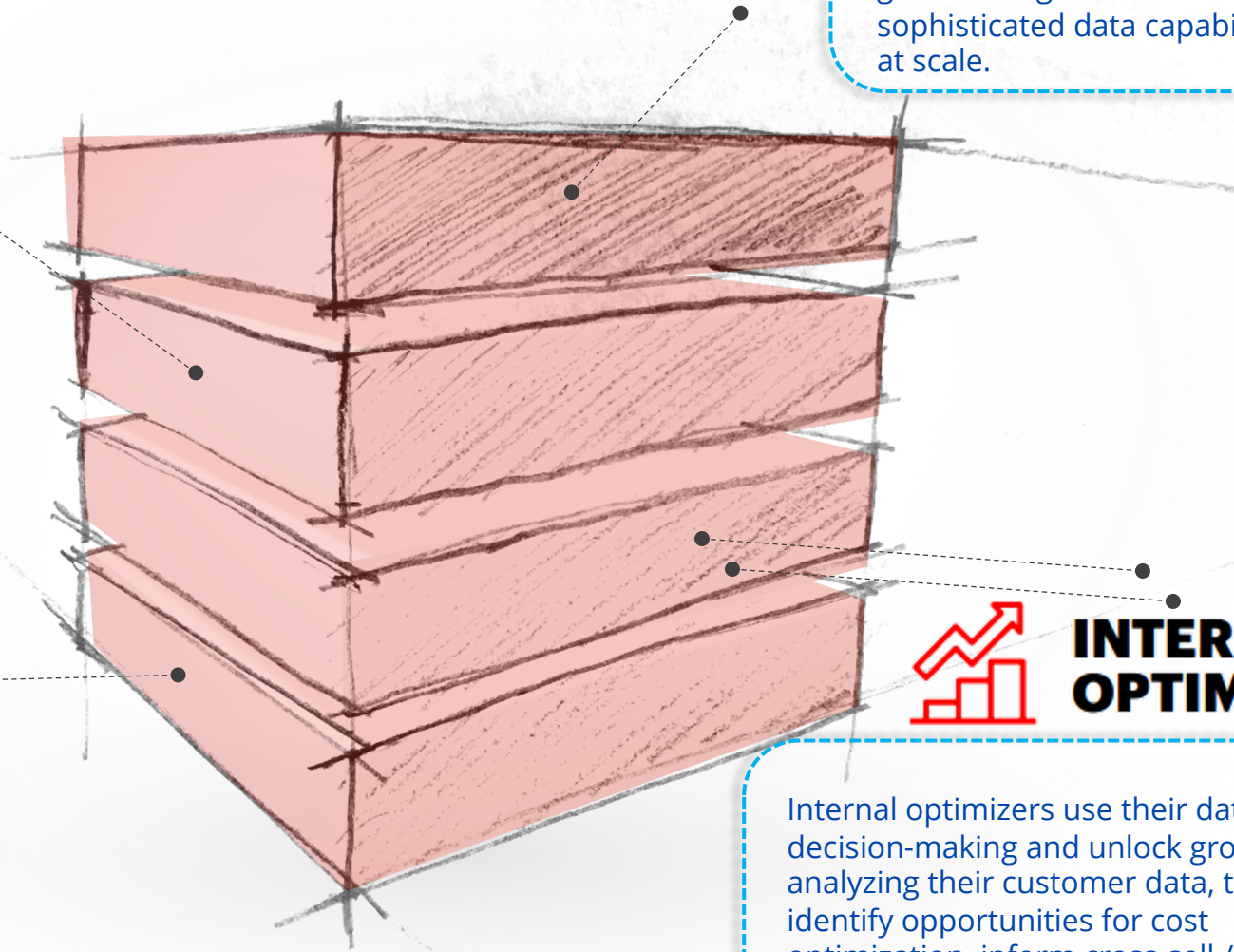
CUSTOMER OFFERS

Customer offers enable third parties to target tailored marketing offers and promotions at tightly-defined customer segments. While potentially the highest value model of all, it also comes with the greatest degree of risk and requires sophisticated data capabilities to realize at scale.

INTERNAL OPTIMISER

Internal optimizers use their data to drive decision-making and unlock growth. By analyzing their customer data, they can identify opportunities for cost optimization ,inform cross-sell / up-sell and drive pricing optimization.
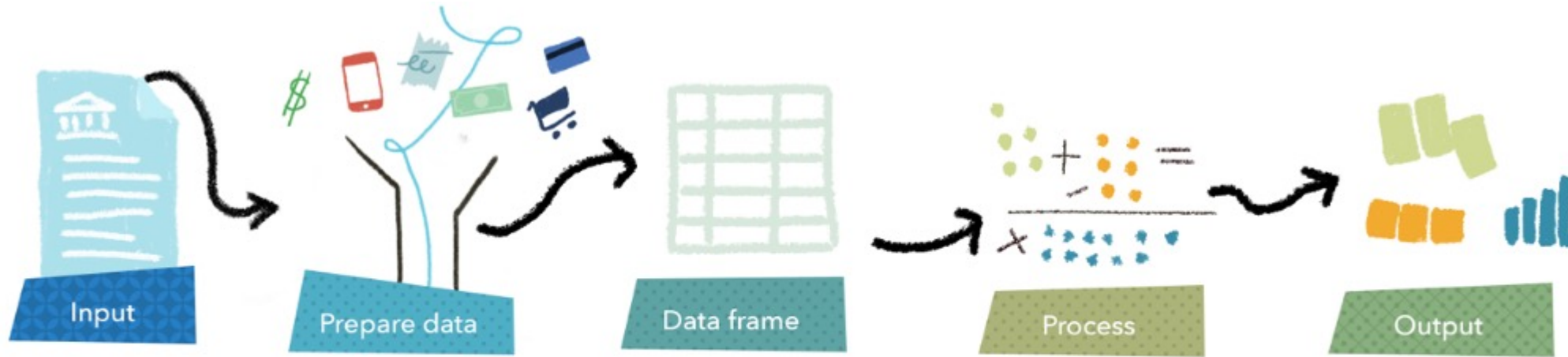
fabrick

..considering the risk factors..

fabrick

Risk Factor	Description	Severity
Open Banking	Developments in regulatory directives such as PSD2 in Europe & Open Banking developments globally are acting as catalysts in driving current revenue decline as well as posing a direct risk to data commercialization opportunities.	LOW RISK
Data Privacy	Existing data privacy constraints could restrict business model execution.	HIGH RISK
Data Quality	Only once organisations mobilise insights offering solutions do they realise the extend to which data quality is sufficient to unlock value.	LOW RISK
Competition	GAFAA's and telcos are more progressed in their insights offering journey and they could capture majority market share.	LOW RISK
Market Pricing	Global case studies indicate that competitors are giving away their data for free or at a very low cost which could drive a reduced market price.	MEDIUM RISK

How typically the data managed is implemented

Input
Raw bank transactions

Prepare data
Clean & categorize transactions
fabrick

Data frame
Place clean data into a pandas DataFrame

Process
Manipulate data: group, filter, apply mathematical function
fabrick codd&date

Output
Data attributes

The ingredients of the cake. Difficulty: high

Neural Network

Codd & Date starting from the experience made in a well-known Italian bank, it has created a neural network capable of predicting the payment behavior of users.

Tagging

PFM Fabrick solution provides tagging for card and account transaction of all the Italian banks.

Multibank

PFM + PSD2 Fabrick solutions generate an huge amount of data associated to payment transaction. This raw data can be used to train IA models.
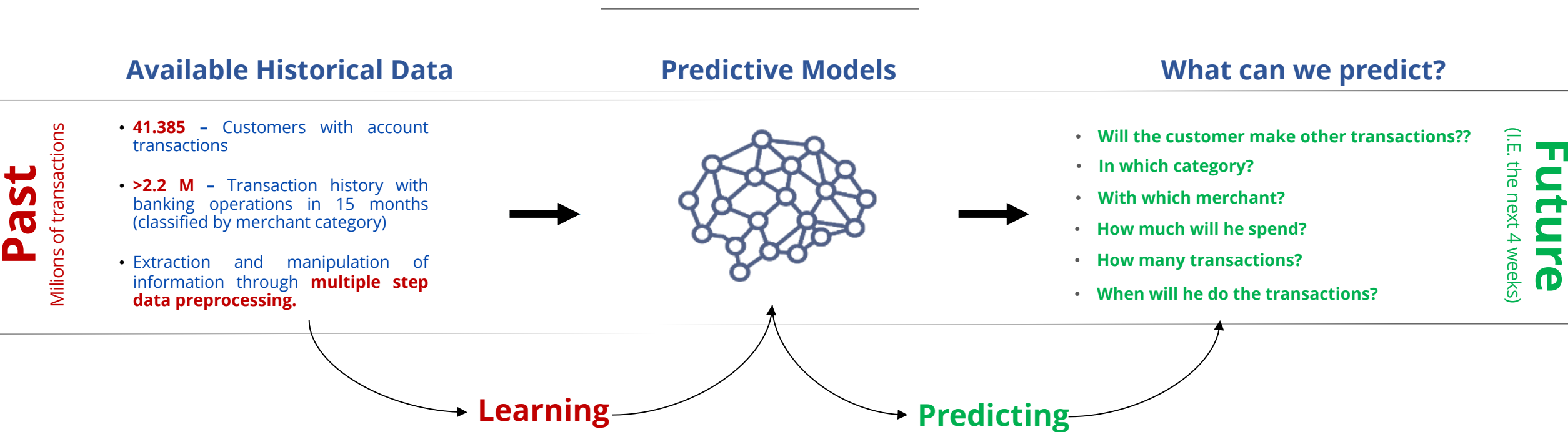
.....We tried to put everything in the oven

fabrick

Machine Learning: Predictive analysis with neural networks – An use case

Forecasting of customer spending behavior, by learning their current account movements and credit and debit card transactions

---

Available Historical Data

Predictive Models

What can we predict?

Past
Milions of transactions

- **41.385 –** Customers with account transactions

- **>2.2 M –** Transaction history with banking operations in 15 months (classified by merchant category)

- Extraction and manipulation of information through **multiple step data preprocessing.**

- **Will the customer make other transactions??**
- **In which category?**
- **With which merchant?**
- **How much will he spend?**
- **How many transactions?**
- **When will he do the transactions?**

Future
(I.E. the next 4 weeks)

Learning

Predicting

fabrick

Analytics – Predictive Modeling – Customer Behaviour Forecast*

Selling - Marketing

Transform deep knowledge of customer spending behavior into co-marketing programs, (with selected merchants), through communications via bank's App or Online Services.

Thanks to the calculation of the **residual economic capacity**, the bank could make specific commercial proposals (Investments / Loans)

Customer Behaviour Forecast

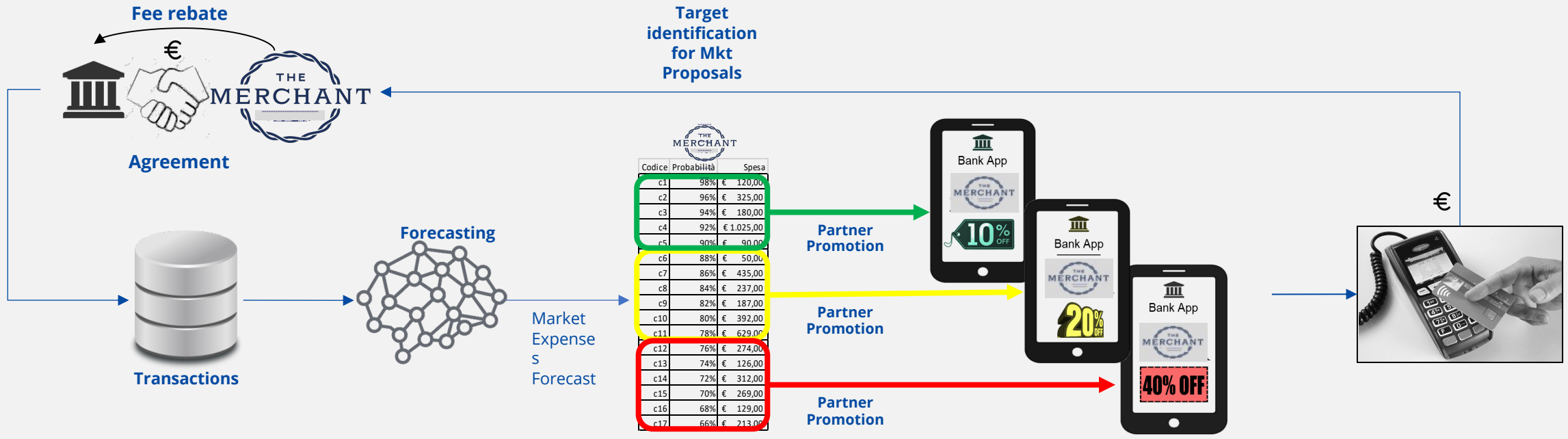Scheduling future expenses through the App or Online Services

Notifications to customers if real purchases occur with an amount that highly differs from the expected one

Customer Services

Possible applications of the forecasting model

Additional Use Cases potentially enabled by predictive modelling

Credit & investment Forecast

Forecast for the purchase of Funds, Unit-linked Policies, Personal Loan, Instant Credit through analysis of the socio-demo characteristics, lifestyle and the history of customers' history who in the past have decided to acquire a product or service.

Customer spending Potential

Evolution of spending info coupled with socio-demo characteristics, lifestyle and the customer's history allows neural network to qualify customers who have increased their purchasing power.
Predictive model can also assigns each individual a measure of the probability of a forthcoming increase in spending capacity.

Aftersales Enhancement

Friction probability analysis for post-sales management to help bank to identify possible problems relating to the product or service and their repercussions on customer satisfaction. allowing the bank to anticipate friction and act promptly to ensure greater service quality and ensure greater satisfaction.

Churn Probability

The analysis allows to identify the significant models that qualify potential churning customers. The predictive models to determine the probability of a real change to the competition, applied to the population that gave a negative result to a loyalty campaign, allow aggressive retention actions, in the latency period, to counteract the probability of churn.

Win-Back Campaigns

Predict the chance of Reacquisition by analysis of the socio-demographic characteristics, lifestyle and history of customers who in the past have been reacquired after a churn event, allows a neural network to identify significant patterns, which sought after in lost customers, allows customers to be assigned a chance of propensity to return in the future .

Contact optimization

Estimate Customer propensity towards contacts through cheaper channels leveraging on contact history with the Bank, analyzing in detail customer interactions with predisposition towards low cost channels.
Neural network can learn characteristic patterns and identify, among customers who currently turn to the telephone channel, those who might be lead to cheaper interaction's channels.

fabrick
SHAPING FINANCE, TOGETHER