Implementation of PSD2 and Open Banking: opportunities and challenges

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Artificial Intelligence Systems S.A. Spain

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• Successful people ask better questions, and as a result, they get better answers.

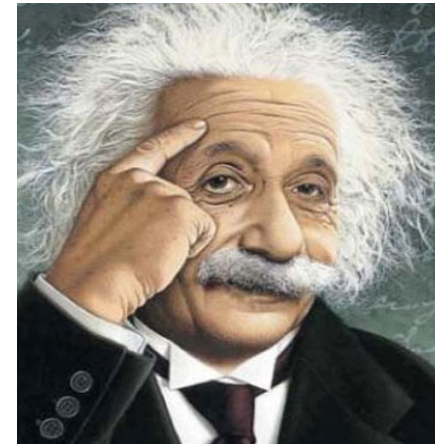• It's not what we do once in a while that shapes our lives, but what we do consistently

Tony Robbins

• "The world as we have created it, is a process of our thinking. It cannot be changed without changing our thinking."

Albert Eistein

there is nothing permanent except change

Heraclitus

AGENDA

➢ Who is AIS

➢ Financial sectors are changing rapidly

➢ Open banking and Digitalization

➢ PSD2 payment systems. Open Banking

➢ Success stories

➢ Questions and comments

AIS GROUP

sharing 33 years of accompanying financial sectors transformation

1987
AIS Group creation

> 250
Clients

50+
Countries

10%
Innovation investment

Applied Intelligence on digital finance for:

Banks

Financial Institutions

Fintech

Cars and fleets

Real state

Insurances

Retail

Industry Smart Cities

Countries where we work

AIS Group branches

CLICKS

AIS GROUP

Banks
Santander | BBVA | CaixaBank | ING | kutxabank | bankinter. | Sabadell | ABANCA | BANCA MARCH

Retail
CaixaBank | BBVA | iberCaja | bankinter. | Cofidis | Sabadell | ZARA

Cards
(credit card images)

Mortgages
BBVA | iahorro. tan fácil | Unicaja Banco | ING | BANCA MARCH | UCI | iberCaja

SME credit
Sabadell | CaixaBank | SGR CESGAR Sociedades de Garantía Recíproca | Banco Pichincha | Itaú | ICBC | nacional financiera

BNPL / eCommerce
MediaMarkt | IKEA | INSTANT CREDIT By Banco Sabadell | Xfera Consumer Finance EFC S.A.

Autos
FCA BANK | Lendismart SMART LENDING SOLUTIONS | BMW Financial Services | LeasePlan | Mercedes-Benz | VOLKSWAGEN FINANCIAL SERVICES FINANCE. RENTING. INSURANCE. MOBILITY.*

Fintech
4FINANCE | wenance | iahorro. tan fácil | ¡qué bueno! | Lendismart SMART LENDING SOLUTIONS

Insurance
AEGON | MAPFRE | ZURICH | AXA | Crédito y Caución Atradius | SegurCaixa Adeslas

Real State
Sareb | StockCrowd IN Investment Networks | Servihabitat | Solvia | PRONTOPISO | SlF

Telco
Telefónica | vodafone

Others
Coca-Cola | DANONE | Alcampo | LaLiga | INDITEX

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Changes…. Everything changes *Julio Numhauser*

New Users, new forms…
Millenials and platforms are changing radically the world we live in and our entire way of life

FTX

- Younger customers, more demanding and creative. Digital natives.
- Development of new tools in finance, shopping, payments, entertainment, trasportation, etc.

UBER   airbnb   AliExpress   amazon   ANT FINANCIAL   fintonic

- In entertainment

Spotify   NETFLIX

- The future is not what it used to be ….. The land, machines, comunications, data

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CHANGING LABOUR SECTOR STRUCTURES
TECHNOLOGY HAS CONTINUOUSLY CREATED & DESTROYED JOBS

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➢ PSD2 payment systems. Open Banking

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➢ Questions and comments

Effects of the pandemic on the financial service scenario

Major effects

- Smartphones use increased. UX measurement

- Suscrption to more financial services .

- Remote banking, only means for managing banking operations

- Substantial increase of digital customers.

- Adoption of cost reduction strategies.

- Fintechs. Faster capacity to adapt to the market than traditional F. I.

- Need to improve the exploitation of internal/ external data
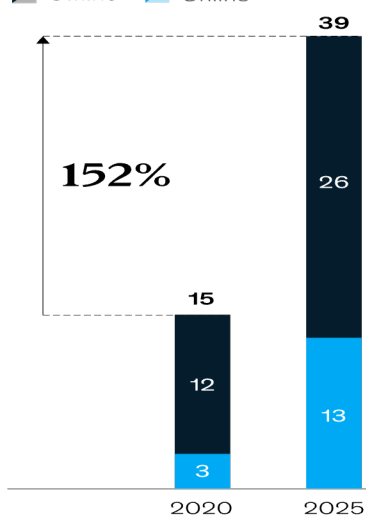
- Increased gap between rich and poor

Source© 2021 KPMG Consult. S.L.,

PAYMENT SYSTEM GROWTH -1

Africa's electronic-payments market is expected to grow by 152 percent from 2020 to 2025.

Revenue from electronic payments for Africa,[1] 2020–25,[2] billion

Type of payment, 2025, %

- Offline
- Online

152%

39
26
13

15
12
3

2020   2025

CAGR, 2020–25, %
Offline   16
Online   32

Electronic transfers
21
2

Cards
30
9

Wallets[3]
16
22

[1]Includes mobile, cards, credit transfers, and direct debits.
[2]At fixed US dollar exchange rates for the entire time series.
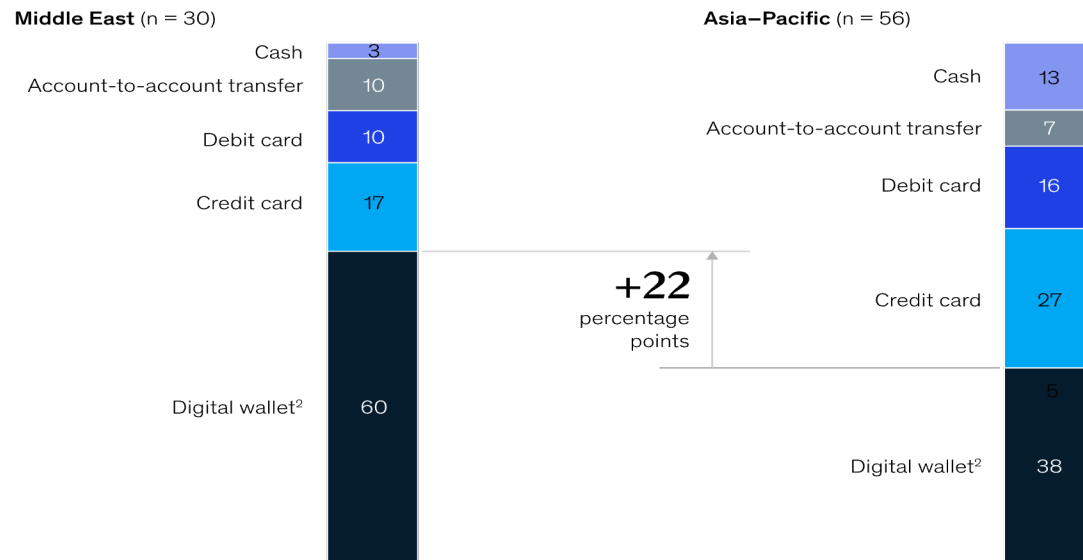[3]Online wallet transactions include all non-CICO (cash-in, cash-out) transactions.
Source: Central bank data; McKinsey Global Payments Map

McKinsey & Company

PAYMENT SYSTEM GROWTH -2

Some countries—in Africa—have managed the transition to digital faster than others and either have or are rapidly developing the appropriate infrastructure and relevant policy frameworks to deliver a sophisticated electronic-payments system.

Middle East experts say digital wallets will be the most preferred mode of payments; expectations in Asia are more diverse.

Most preferred payment mode in next 5 years,[1] % of survey respondents

Middle East (n = 30)

Payment mode	Value
Cash	3
Account-to-account transfer	10
Debit card	10
Credit card	17
Digital wallet[2]	60

+22 percentage points

Asia–Pacific (n = 56)

Payment mode	Value
Cash	13
Account-to-account transfer	7
Debit card	16
Credit card	27
	5
Digital wallet[2]	38

Note: Figures may not sum to 100%, because of rounding.
[1]Question: In the next 5 years in your market, what would be the preferred modes of payment for consumers? Rank from most preferred mode to least preferred.
[2]Including mobile money and pass-through wallets (Apple Pay, Samsung Pay, etc).
Source: McKinsey MEA payments survey and APAC industry survey

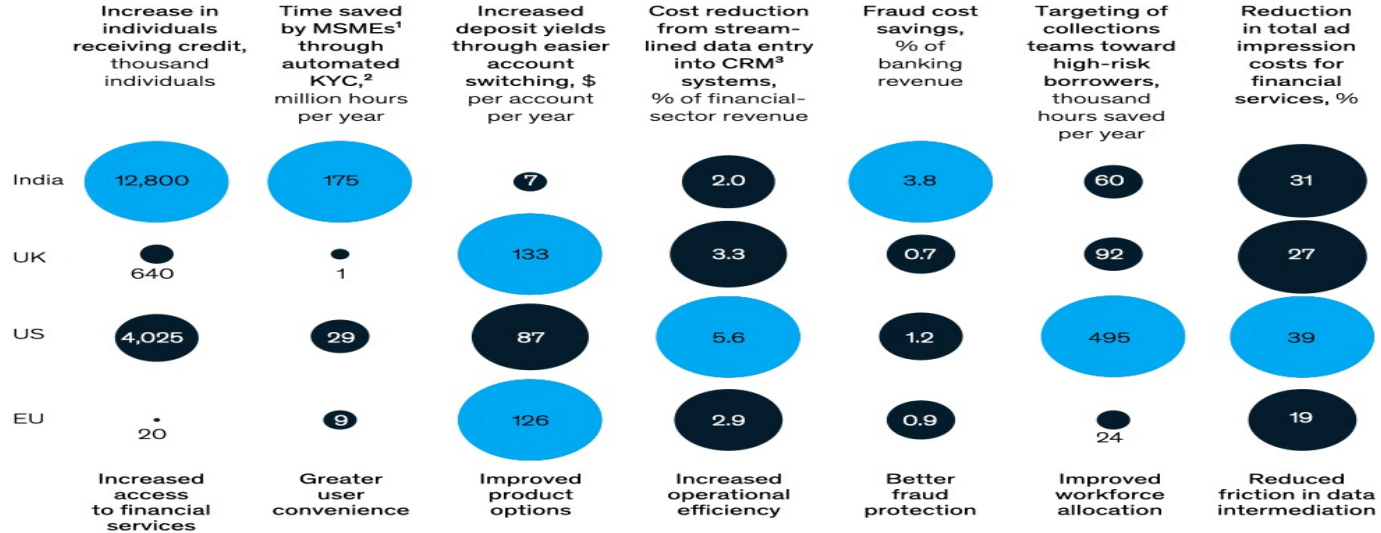McKinsey & Company

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- ➢ **PSD2 payment systems. Open Banking**
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OPEN BANKING IS LOOMING LARGE

Mckinsey survey/the-future-of-payments-in-the-middle-east

- Open banking or "open financial data"—a regulatory reform that requires banks to share customers' financial data

- Other banks or authorized financial services providers

- Bahrain issued open-banking rules in 2018 on data sharing and governance in late 2020

- Saudi Arabia recently announced its plan to launch open banking in early 2022.

- 27 percent of regulators concerned about regulations approval for open banking, including digital KYC

- 80 percent of survey respondents expected open banking to drive the decoupling of savings account balances and payments capabilities in the future.

- Customer expect to rely on entities with more user-friendly payments offerings than traditional banks

OPEN FINANCIAL DATA ECOSYSTEM, SIGNIFICANT POTENTIAL (2030)

	Increase in individuals receiving credit, thousand individuals	Time saved by MSMEs[1] through automated KYC,[2] million hours per year	Increased deposit yields through easier account switching, $ per account per year	Cost reduction from stream-lined data entry into CRM[3] systems, % of financial-sector revenue	Fraud cost savings, % of banking revenue	Targeting of collections teams toward high-risk borrowers, thousand hours saved per year	Reduction in total ad impression costs for financial services, %
India	12,800	175	7	2.0	3.8	60	31
UK	640	1	133	3.3	0.7	92	27
US	4,025	29	87	5.6	1.2	495	39
EU	20	9	126	2.9	0.9	24	19
	Increased access to financial services	Greater user convenience	Improved product options	Increased operational efficiency	Better fraud protection	Improved workforce allocation	Reduced friction in data intermediation

Note: Estimated potential value assumes standardization and breadth of sharing of financial data as well as robust data privacy and consent frameworks, wide-spread access to digital financial infrastructure including digital ID, and regulations enabling strong product innovation.
[1] Micro, small, and medium-size enterprises, defined by the International Finance Corporation (IFC) as enterprises with sales and/or assets less than $15 million and/or with fewer than 300 employees.
[2] Know your customer data.
[3] Customer relationship management.
Source: Experian; Glassdoor; IFC; International Monetary Fund; OECD; Refinitiv KYC survey; various national sources and databases; World Bank Global Findex database; Zillow; McKinsey Global Institute analysis

McKinsey & Company

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- PSD2 payment systems
- **Success stories**
- Questions and comments

Generation of value Thruogh open baking and ML

3rd largest Bank s in Peru

- Development of an ML model for one of the segments of the current Behavioral Model in the Bank.
- The two models have been developed with the same sample and the same available variables.

Obtained results:

- The model developed with ML and OB achieves an improvement of 20 Gini points over its equivalent version with RL
- This represents an impact of a **27%** increase in placements, maintaining the same level of non-performing loans

Case 1
What ML and openbanking gives us in a model construction

Original model with logistic regression

Tranches	Unpaid	Good acum.	Unpaid Acum	DIF
5%	5,66%	6,5%	1,0%	5,5%
10%	6,72%	12,9%	2,4%	10,4%
15%	7,74%	19,1%	4,2%	14,8%
20%	9,49%	25,0%	6,9%	18,0%
25%	10,56%	30,8%	9,6%	21,2%
30%	11,24%	36,7%	12,3%	24,4%
35%	12,37%	42,3%	15,8%	26,5%
40%	13,38%	47,8%	19,5%	28,3%
45%	14,06%	53,3%	23,0%	30,3%
50%	14,93%	58,7%	27,2%	31,5%
55%	15,66%	64,0%	31,4%	32,6%
60%	16,85%	68,8%	36,8%	32,0%
65%	17,86%	73,6%	42,3%	31,3%
70%	18,99%	78,2%	48,4%	29,8%
75%	20,11%	82,6%	54,9%	27,7%
80%	21,22%	86,9%	61,8%	25,1%
85%	22,47%	90,9%	69,5%	21,3%
90%	23,76%	94,6%	77,9%	16,7%
95%	25,23%	97,9%	87,3%	10,7%
100%	27,47%	100,0%	100,0%	0,0%
Total			K-S	32,6%
			GINI	43,8%

Model developed with XGBoost

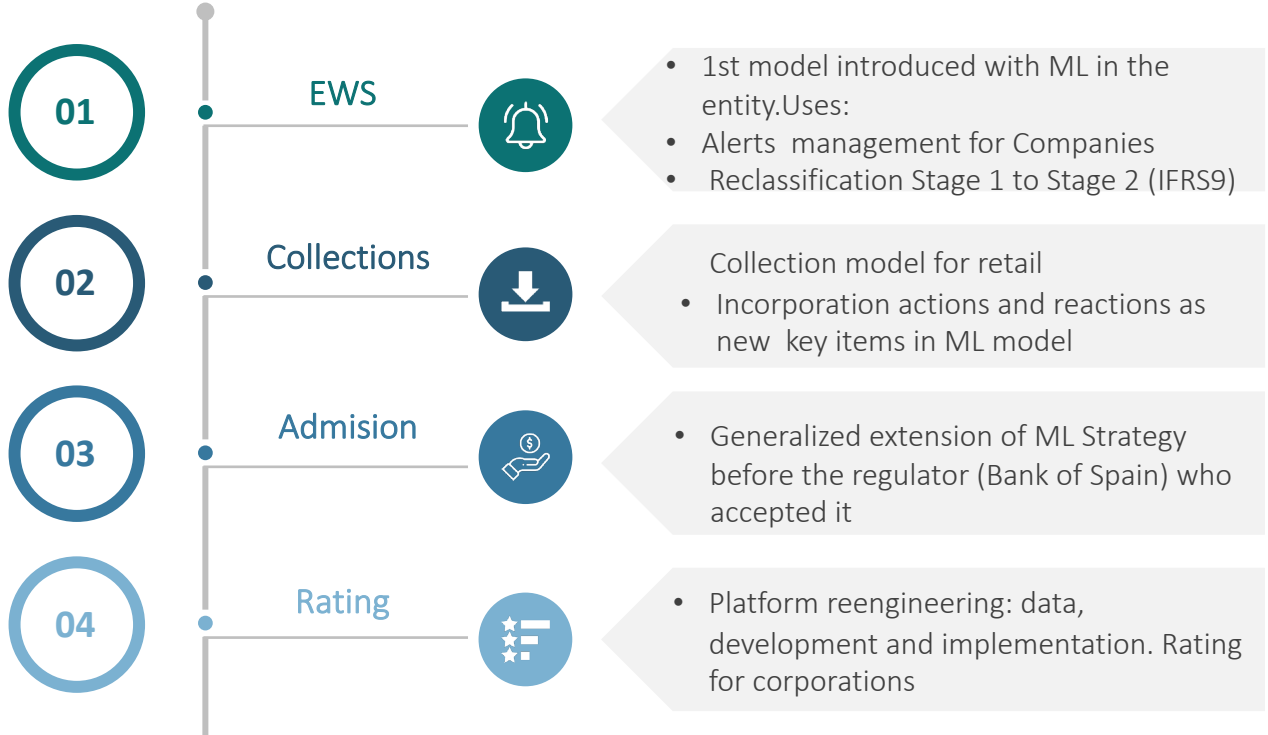| Tranches	Unpaid	Good acum.	Unpaid Acum.	DIF	Improve
5%	2,5%	6,7%	0,5%	6,3%	
10%	3,5%	13,3%	1,3%	12,0%	
15%	4,3%	19,8%	2,3%	17,5%	
20%	4,8%	26,3%	3,5%	22,8%	
25%	5,3%	32,7%	4,8%	27,8%	
30%	6,1%	38,8%	6,7%	32,1%	
35%	6,6%	45,1%	8,4%	36,6%	
40%	7,2%	51,2%	10,5%	40,7%	
45%	8,0%	57,1%	13,2%	43,9%	
50%	8,7%	62,9%	15,9%	47,0%	
55%	9,9%	68,3%	19,9%	48,5%	
60%	11,2%	73,5%	24,4%	49,0%	
65%	12,6%	78,4%	29,7%	48,6%	
70%	14,1%	82,9%	35,9%	47,0%	+27%
75%	15,7%	87,1%	42,9%	44,2%	
80%	17,6%	90,9%	51,4%	39,5%	
85%	19,6%	94,3%	60,6%	33,7%	
90%	21,7%	97,1%	71,2%	26,0%	
95%	24,3%	99,1%	84,1%	15,0%	
100%	27,5%	100,0%	100,0%	0,0%	
Total			K-S	49,0%	50,3%
			GINI	63,9%	45,9%

Case 2
TRANSPARENCY AND TRACKING OF THE MODELS

Spain – Top 3rd Bank

Challenges

- Strategic decisión for ML and OB

- Search for business impact, through performance improvement

- Since the beginning, the objective has reached all risk models, including IRB

- Migration of SAS infrastructure to R, integrating data, development and implementation

01 EWS
- 1st model introduced with ML in the entity.Uses:
- Alerts management for Companies
- Reclassification Stage 1 to Stage 2 (IFRS9)

02 Collections
- Collection model for retail
- Incorporation actions and reactions as new key items in ML model

03 Admision
- Generalized extension of ML Strategy before the regulator (Bank of Spain) who accepted it

04 Rating
- Platform reengineering: data, development and implementation. Rating for corporations

Case 3
Capacity to increase value and integration

Colombia – Leader Microfinance instit.

Challenges

- To improve the performance to improve increase the inclusión of the poor (installed in 9 months)
- Incorporation of alternative data sources
- Anticipate in the field the approval or not of the operation
- Avoid biases, both gender and caused by the pandemic
- Increase the number of approval without increasin risk levels

01 Performance
- Impact on inclusion: Between 15% and 30% increase in micro-entrepreneurs served
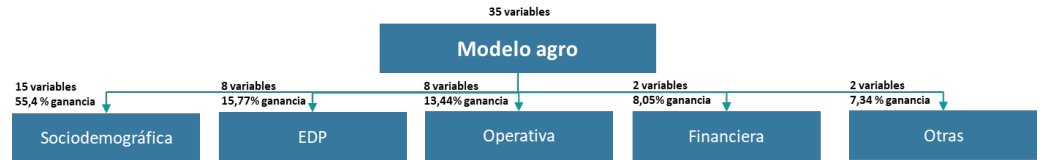
02 Productivity
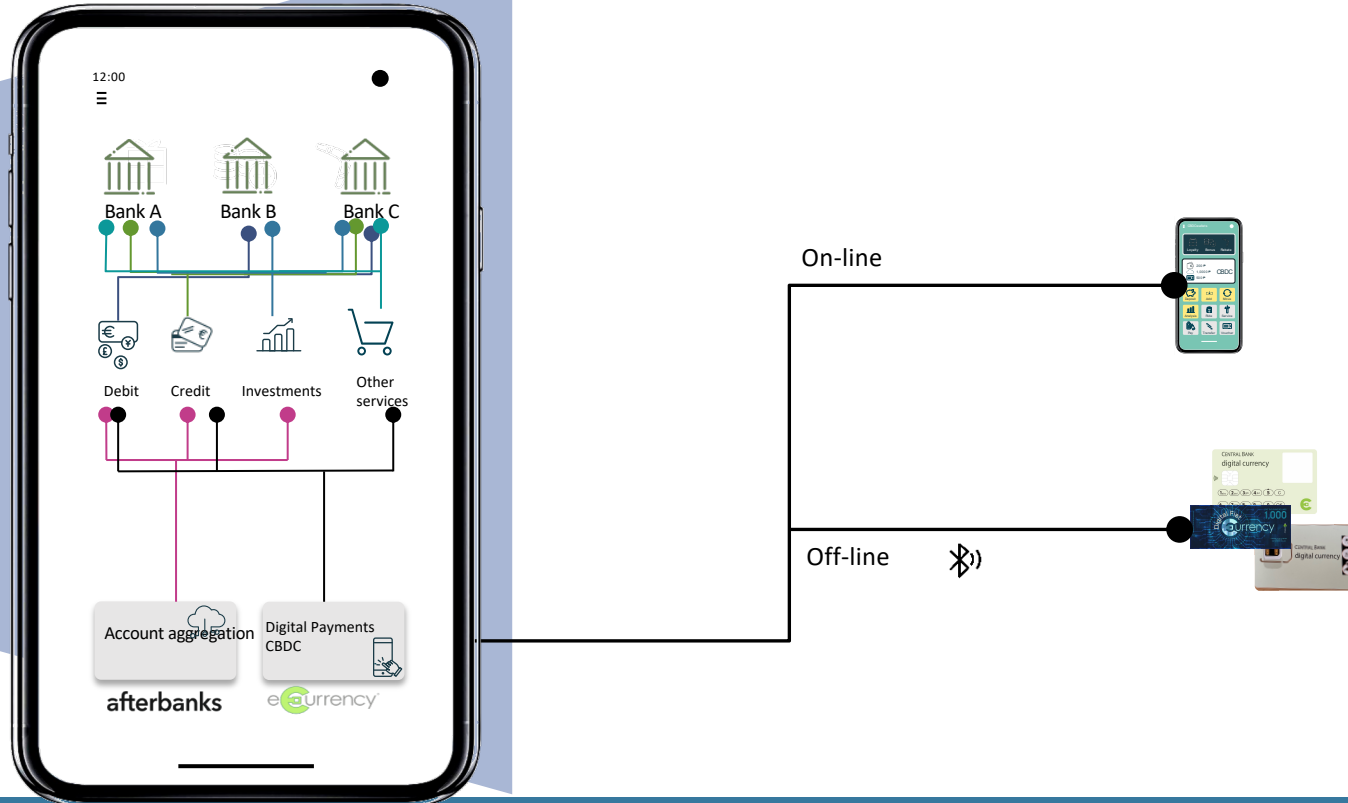- Reduction of the number of models in use: 50% model reduction

03 Data
- Use of data not included so far:
  EDP Characteristics
  Yield of crops

35 variables

Modelo agro

15 variables 55,4 % ganancia	8 variables 15,77% ganancia	8 variables 13,44% ganancia	2 variables 8,05% ganancia	2 variables 7,34 % ganancia
Sociodemográfica	EDP	Operativa	Financiera	Otras

AIS KnowU
Making new customers

Open banking is a strategic enabler of great importance for the digital transformation and Central Bank Digital Currencies (CBDC) amongst other means of payment, are set to play a significant role.

On-line

Off-line

12:00

Bank A   Bank B   Bank C

Debit   Credit   Investments   Other services

Account aggregation

afterbanks

Digital Payments CBDC

eCurrency

Enabling multiple use cases

Open Banking

afterbanks

Central Bank Digital Currency (CBDC)

eCurrency®

Aggregation of financial positions with categorization engines, reports and alerts offering a value-added service to the client

Streamlining of onboarding processes through access to data necessary for the registration process

Improvement of conditions through access to competition information

Optimization of **scoring processes**

Personalized advice for **cross-selling** and **up-selling**

Accessible with a wide range of payment systems, user devices and acceptance systems for different online and offline use cases

G2P Payments of salaries, allowances and pensions
G2P Welfare distributions
P2G Payments of fines and

P2P Payments of salaries
P2P Transfers
P2P Payments for goods and services

Person

P2P

Government

B2B

Business

G2B Payments for goods and services
B2G Payments of fines and taxes

B2B Payments for goods and services

minsait

AIS KnowU

Integration

AisKnowU is a softare solution that allows financial data integration. There are alternatives for the integration of data in AIS KnowU, from a total inclusion via webservice, to the use of models and their exploitation in an internal environment:
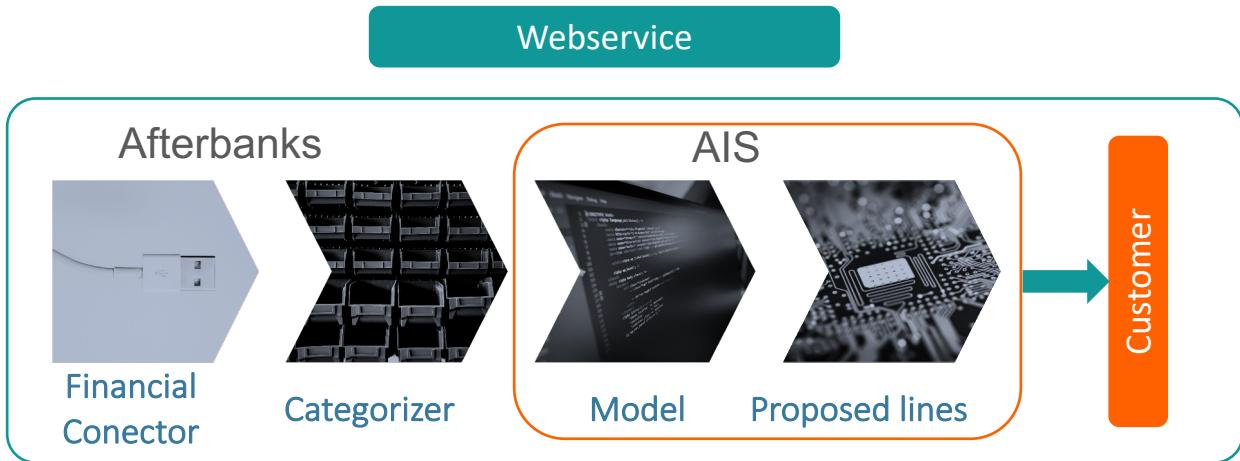
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We are concerned about UN-GOALS

SUSTAINABLE DEVELOPMENT G⊙ALS