Decentralized Data Cooperation Platform

aggregion.com

Data Collaboration is
the Next Frontier of Competition

> 40%

**of companies are forming or planning
to form some data collaborations[1]:**

- Business ecosystems
- Marketing and ad management
- Value chain optimization
- Researches
- Market analytics and benchmarking

$60T

**total estimated revenue of networked
economy by 2025[2]**

Barriers for collaboration:

Risk of losing control over data:
data leakages, commercial and privacy risks

**Complex compliance to tightening
personal data legislation**

Lack of infrastructure:
data standards, APIs, ML/AI tools,
metadata, data exchanges

High set up costs for data cooperation
(weeks and months) – easier not to start at all

1 Collaborating for the common good: Navigating public-private data partnerships | McKinsey
2 How companies can create value from digital ecosystems | McKinsey

Aggregion Allows Companies to Securely Cooperate on Data

A **decentralized data cooperation platform**, powered by **blockchain** and **confidential computing**

Suite of apps for cooperation

Partner 1   Partner 2   Partner 3

Aggregion Protocol
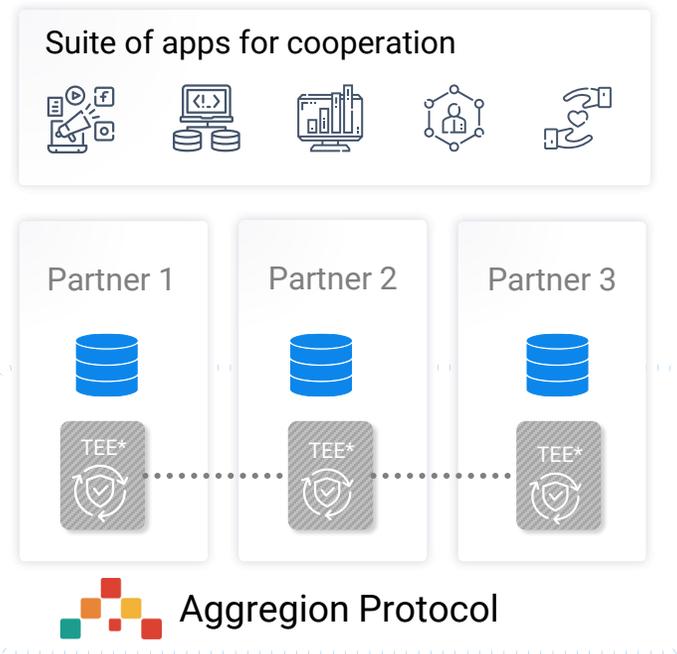
Joint data modeling, analytics, marketing campaigns and loyalty programs:

✓ No transfer or disclosure of data [1,2]

✓ Full control over all operations

✓ Ready to use infrastructure and applications

✓ Market ecosystem: largest retailers, telco, 3rd party data

Any scenarios for data cooperation

Audience management, advanced ML models, analytics, BI, loyalty management

Secure joint calculations

Secure enclave technology, developed with Intel[1] and Microsoft[2], guarantees data security at the hardware level. Coupled with blockchain it streamlines cooperation.
Privacy preserving algorithms. User consent management throughout dataflows
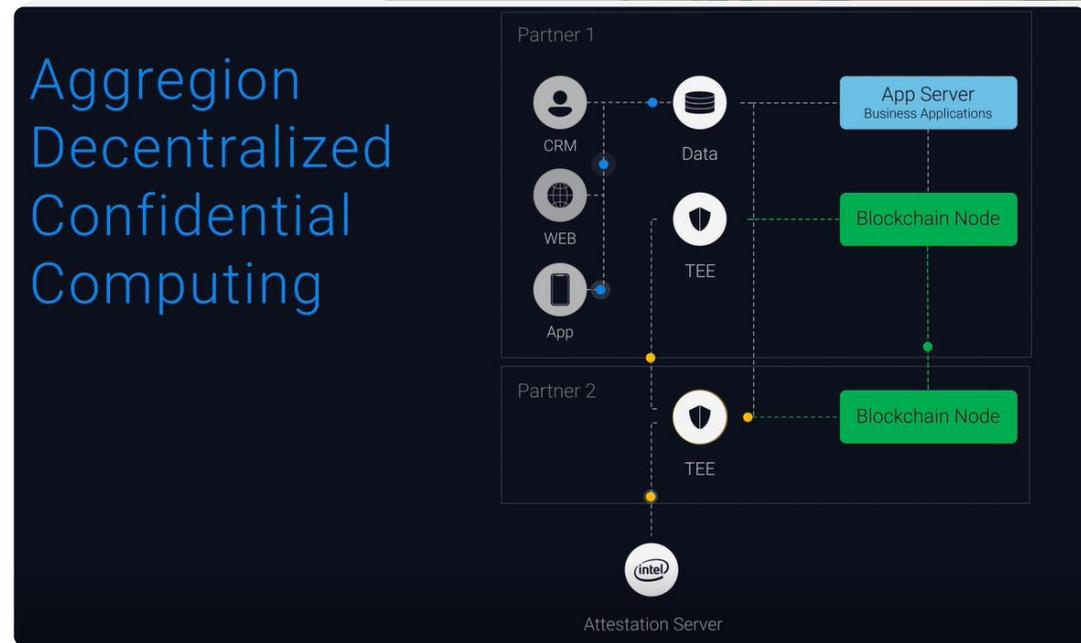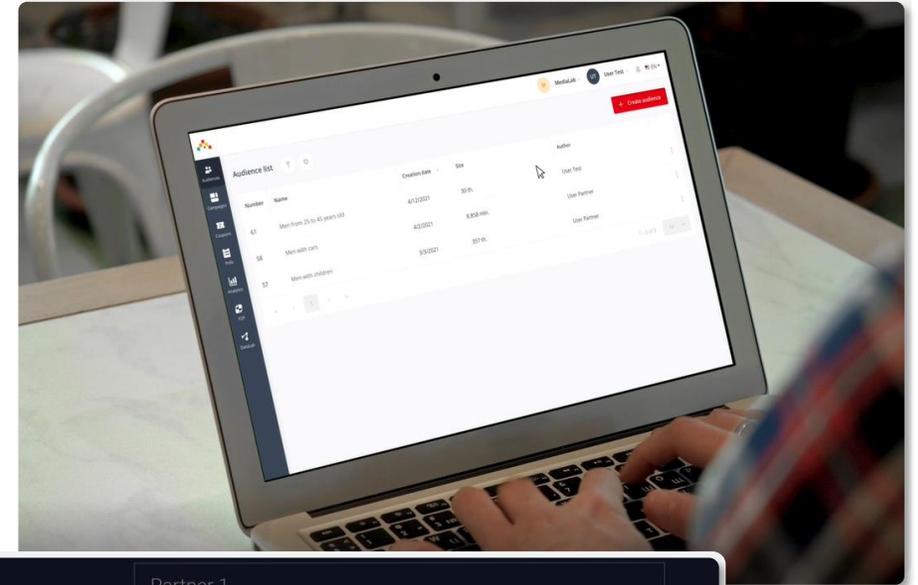
Trusted technology

Our clients include largest copyright holders like Pearson, Disney, Microsoft and largest B2C companies in Russia/CIS – Beeline, Magnit, Beeline KZ, largest banks, analytical companies and others
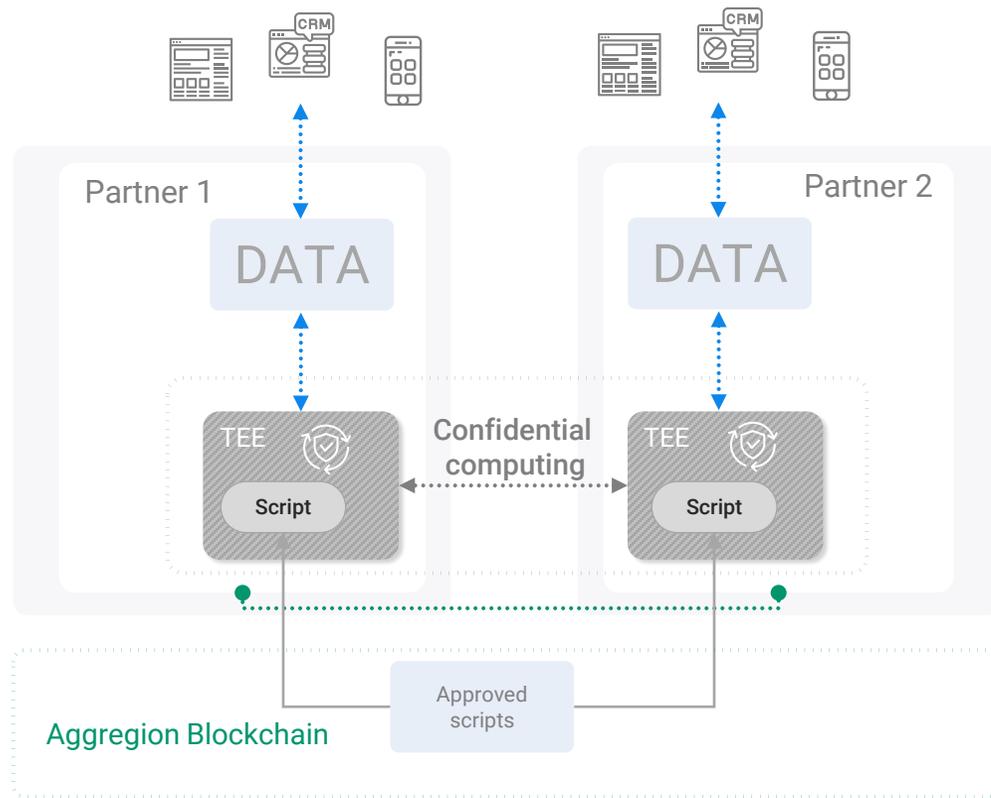
*TEE – trusted execution environment

Short video about Aggregion protocol and the platform

▶ Eng

How the platform works –
Aggregion Decentralized Confidential Computing

Trust in the Network – Aggregion blockchain protocol:

Network configuration
(rights and permissions)

Global master data:
catalogs, metrics

Script registry

Global authorization

Script signing

Ledger for all operations

Tariffs and fees

Confidential computing – Trusted Execution Environment:

Based on Intel SGX technology

Any number of parties

Integrated with Aggregion blockchain for permissions control and script authorization

Scalable up to terabytes of RAM

Supports Python, JavaScript, Java, C++

Aggregion Data Cooperation Platform

Structure and typical deployment

Clients' site

Media

Web

App

CRM

Aggregion CDP

TEE

Aggregion Blockchain

Confidential computing

Partners

Aggregion CDP

TEE

End users: marketing, partners

Other partners

- AdPlatforms
- Customer research companies
- DMPs
- 3rd Party data

Cleanroom Model execution

Datalabs Model development

Analytics and data scientists
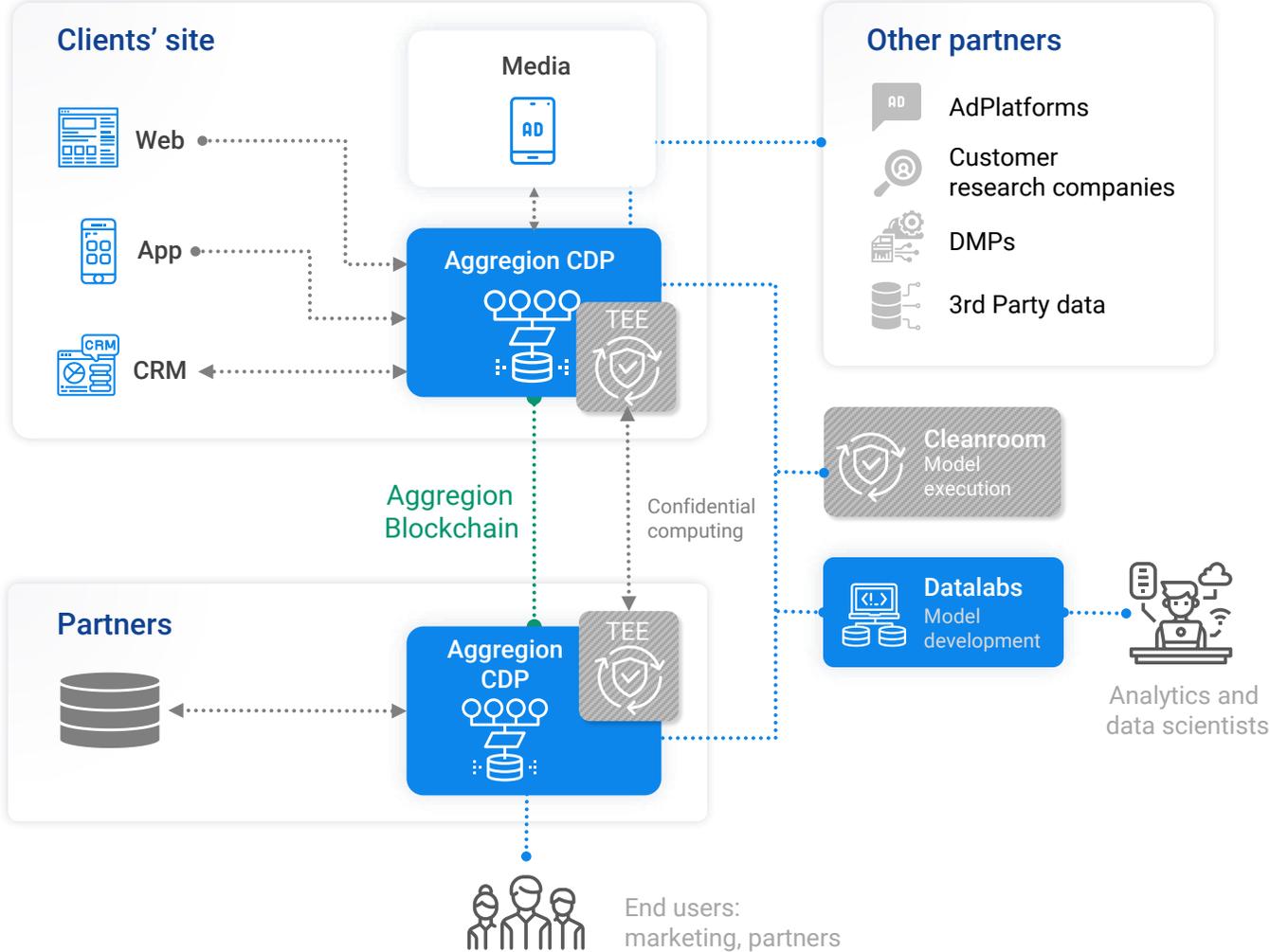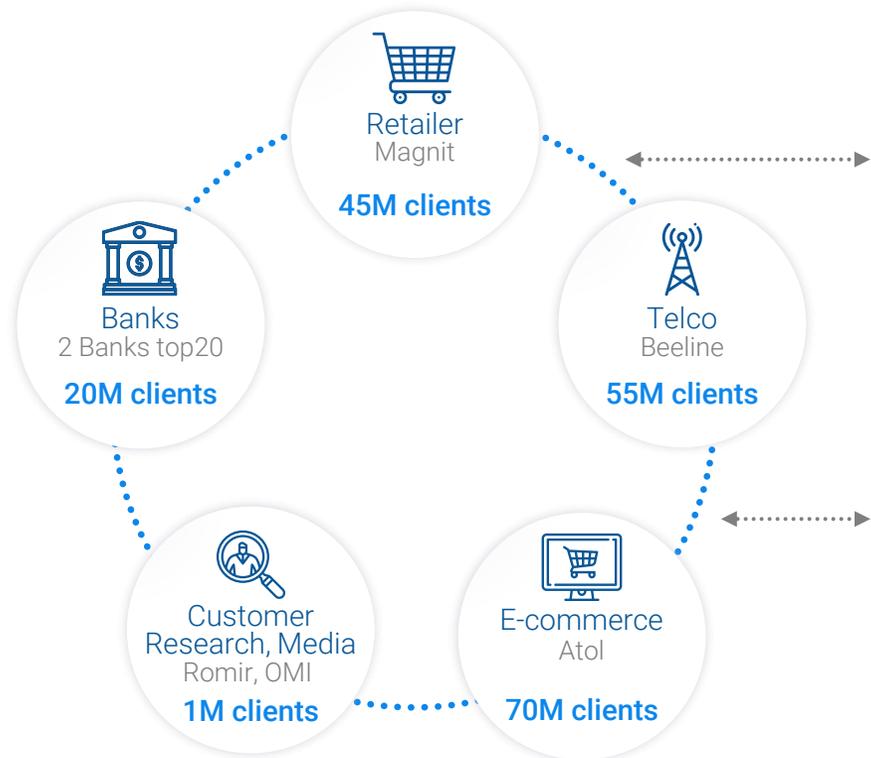
Solution layers:

Functional modules	Business apps/functional modules
API/SDK	Easy integration with legacy systems and 3rd party modules
Secure Enclaves	Confidential computing on top of blockchain
Blockchain Protocol	All operations decentralized without a central node. Plug&play mode for connection.

Functional modules

- Audience & campaign designer
- DataLabs
- Decentralized loyalty
- Surveys
- User consent management
- Customer analytics
- Data Cleanrooms
- Coupons
- Analytics and services marketplace
- Billing

Aggregion already operates commercially for top companies at CIS and Eastern Europe

Current clients/partners

Retailer
Magnit
45M clients

Banks
2 Banks top20
20M clients

Telco
Beeline
55M clients

Customer
Research, Media
Romir, OMI
1M clients

E-commerce
Atol
70M clients

Clients:
- P&G, Unilever, Pepsi, other CPGs
- Intel, Microsoft
- Top Banks
- Media companies etc.

Cases:
- Adv management
- Business ecosystems
- Data modeling
- Analytics

Top independent retailers, telco, banks with total audience more than 80M people are working on the platform for their advertisement management, cross sales, data monetization, risk management and other scenarios.

And a dozen more companies are joining the platform

News releases:

Magnit Launches Aggregion Platform for Digital Marketing

Customer research companies develop new products on Aggregion platform (Ru)

Aggregion and Beeline Announce Partnership

Aggregion Use Cases for Different Industries

FMCG

- Data cooperation with Retailers (insights, data modeling, operations optimization)
- Ad management, new channels, O2O
- Customer insights with integrated research panels and others

RETAIL

- Data/media monetization
- Customers management with other partners (Telco, Banks etc.)
- Data cooperation with CPGs and others
- Digital ad management (targeting, O2O)

BANKS & INSURANCE

- Ecosystems and partnerships
- Lead generation using partners' audiences
- Risk scorings, research labs

MEDIA

- Ad audience measurement and profiling (TV and other channels)
- Sales impact measurement
- Ad targeting using partners' data

GOVERNMENT

- Market analytics, benchmarking on sensitive commercial data
- Researches (e.g. medicine)
- Secure data cooperation amongst departments

TELECOM/ ADTECH

- Secure client data onboarding
- Omnichannel communications
- Online-to-offline conversions
- Integrated customer analytics

Cases
For Retailers
(detailed)

Category mngt. and Value chain Optimization
Combining retailer's and CPG data for joint optimization

- **Forecasting and replenishment optimization**
- **Category management optimization: pricing, promo, assortment**
- **New product development**

5-20%
profit growth using
joint optimization

Advertisement and Marketing for CPG
Allowing access to retail audience for CPG marketing and ad management

- Ad targeting at retailers' audience and sales performance assessment.
- Customer insights labs combining retail and CPGs data
- Customer surveys and coupons for any audience
- Integration with CPG DMPs for deeper insights and ad sales impact assessment

Additional revenue stream (>$3M for large retailers)

Additional sales (0,1-0,5%)
generated with more efficient Ads targeted at retailer's audience

Cooperation with other partners
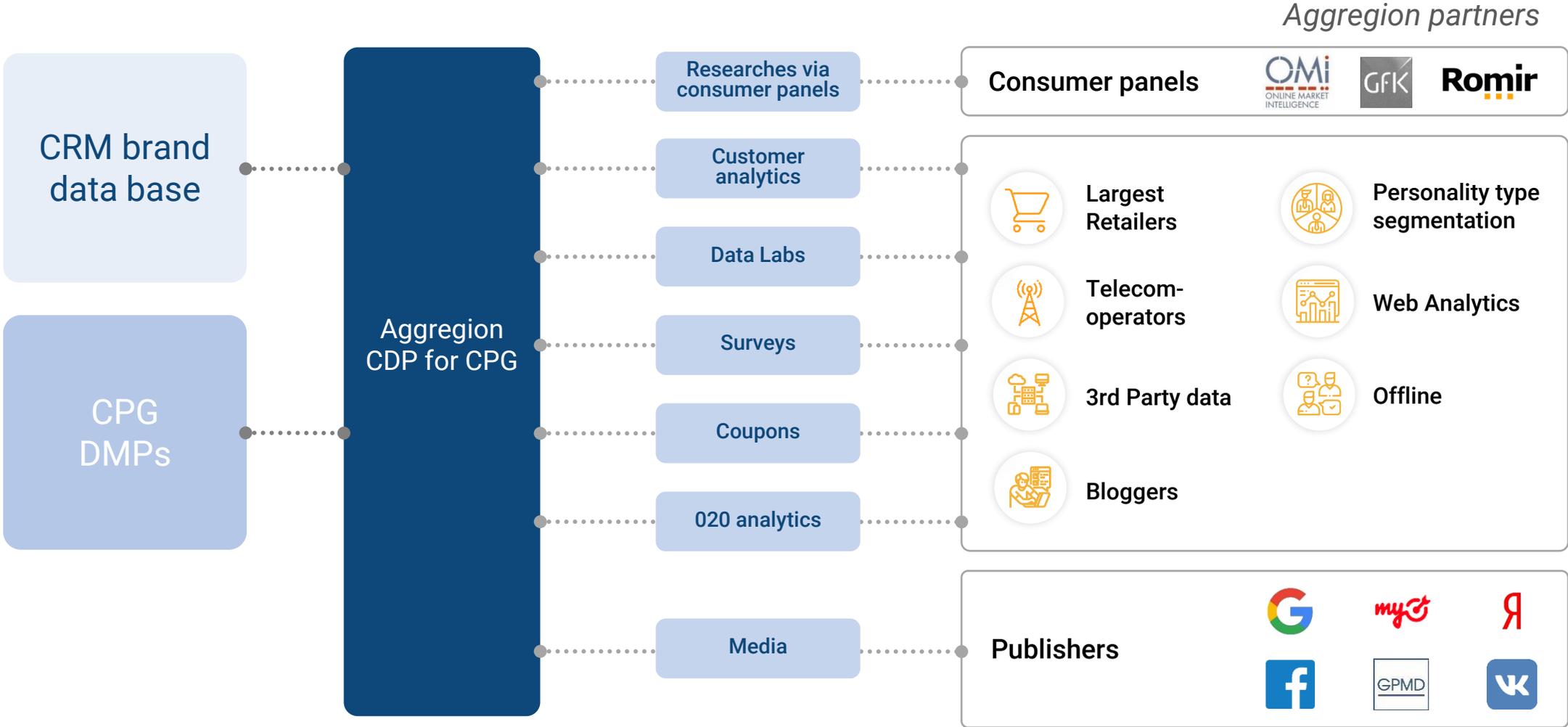For customer acquisition, improving risk assessment and analytics

- **Customer acquisition with Telco/Banks/e-com and other high traffic partners**
- Improving customer financial risk scorings with other partners' data
- Allowing other partners to target retailers' customers, e.g. banks, insurance, telco etc.
- More insights about customers in cooperation with customer research companies (e.g. Nielsen, IRI), Media agencies, TV analytics etc.

New customers

Additional revenue stream

More insights about customers

Integrated Marketing Management for CPGs

Direct integration of CPG audiences with the data bases of Retailers and other partners

Aggregion partners

CRM brand data base

CPG DMPs

Aggregion CDP for CPG

- Researches via consumer panels
- Customer analytics
- Data Labs
- Surveys
- Coupons
- O2O analytics
- Media

Consumer panels — OMi ONLINE MARKET INTELLIGENCE, GfK, Romir

- Largest Retailers
- Telecom-operators
- 3rd Party data
- Bloggers
- Personality type segmentation
- Web Analytics
- Offline

**Publishers** — G, my, Я, f, GPMD, VK

Merging Partners Audiences and Attributes in Live Mode

- Self-service audience designer

- Data sourced from different partners

- No data leaves the owners' premises

- Real time audience matching with the data from leading advertising platforms

- Easy upload of new audiences
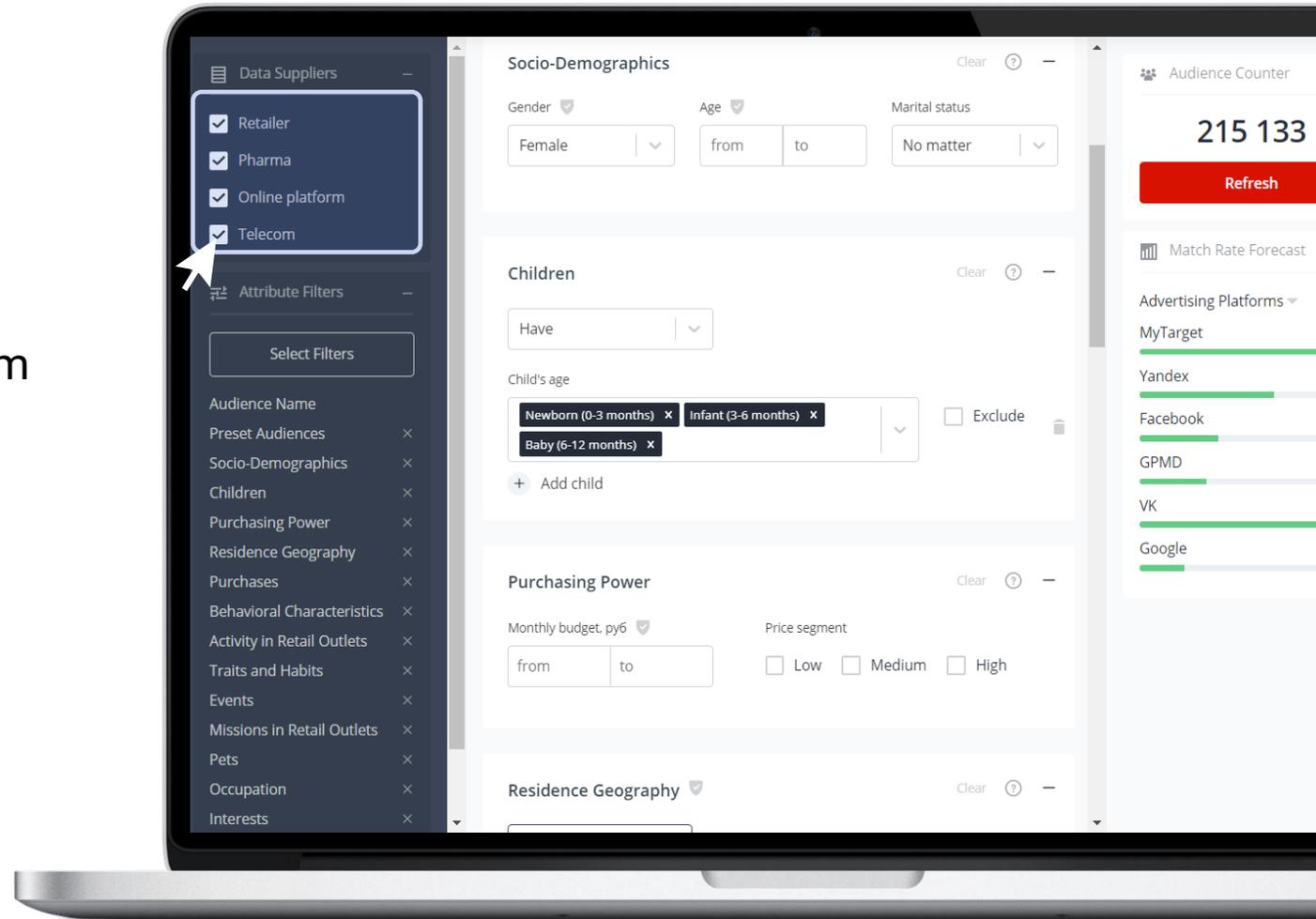
Campaign Management

- Self-service tool for launching and monitoring advertising campaigns built on combined partners segments

- Approval workflow for campaign and data usage by data providers (across different companies)

- All major Ad platforms support. Clients and partners web/app support.

- Sales conversions reports

- Billing using different models (impressions, CPA etc.)

- Surveys and coupons
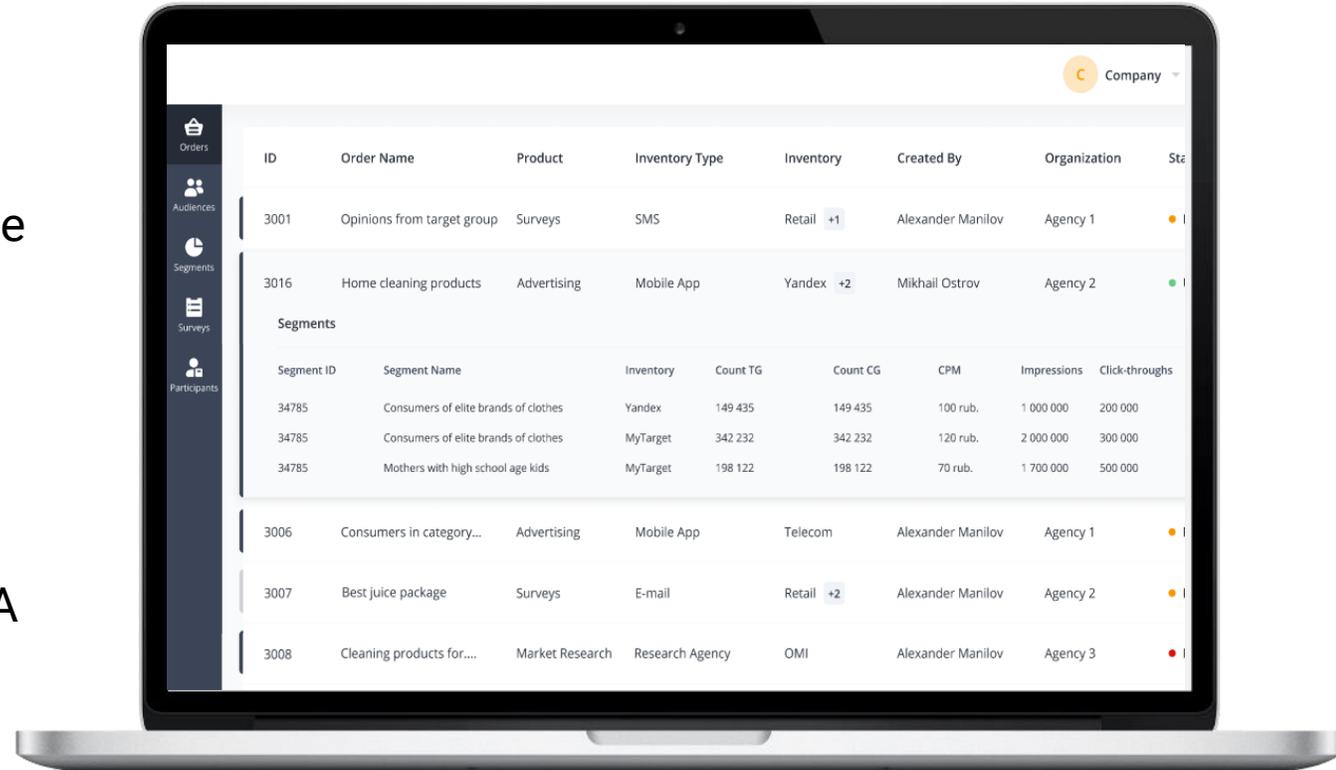
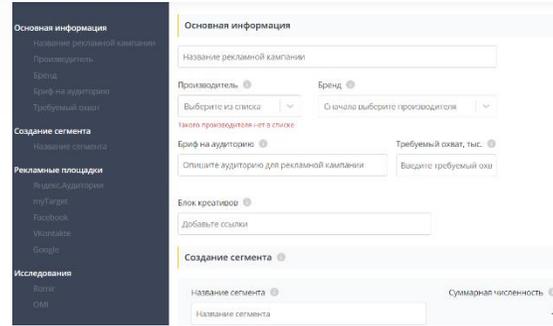# Ad Management at Partners Data: End-to-end Process Support

1 Audience selection using partners' data
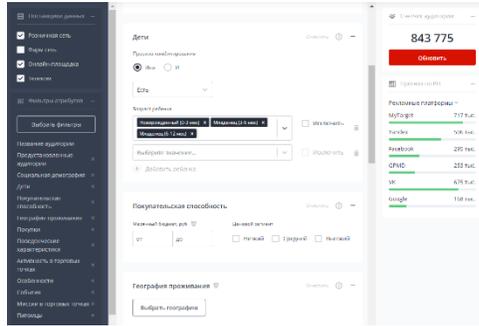
Advertiser builds the audience, combining partners data (Retail, Telco, 3rd party) without receiving actual data. System automatically matches datasets between partners
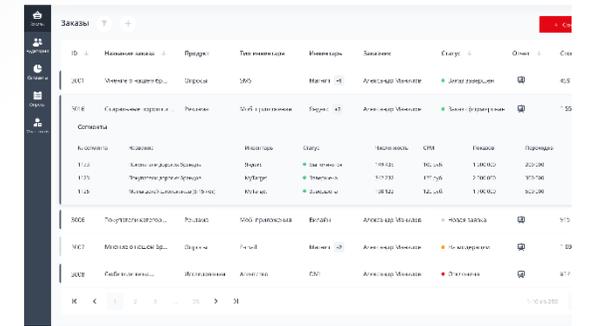
2 Ad campaign or survey creation

Client creates campaign targeted to selected audience. Then choose Ad platform and orders additional services such brand lift study, surveys, O2O conversions, etc.
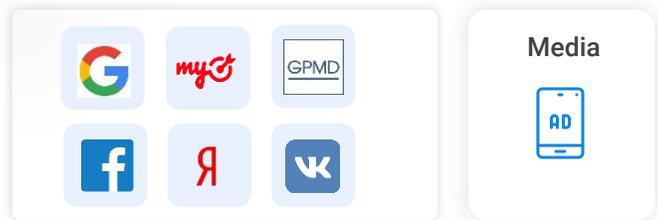
3 Approval with data partners

Data partners must approve the usage of their data in the campaign. Approved audiences are securely uploaded to ad platforms
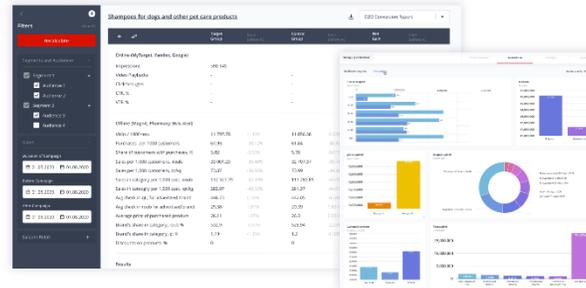
4 Audience uploading to Ad platforms or partners' media
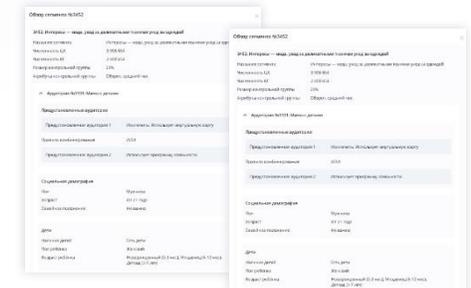

Any ad platforms or partners' media channels

5 Campaign performance analytics, incl. O2O

Campaign performance, including impact on sales and other reports of data partners for any audience

6 Billing

For past and ongoing campaigns based on CPM, CPA and other models

Aggregion DataLabs

Objectives

Analytics and data modeling using partners' data. Basic scenario is using detailed anonymized data of several parties allowing to create data science models such as customer analytics, scorings and segmentation, forecasts, etc.

Partner 1 — BI — Sandbox — ML — Partner 2

Capabilities

✓ Secured area with restricted access (no export)

✓ Partners' data ID matching with secured enclaves (no need to disclose full datasets)

✓ Using batch ID for data processing inside data lab

✓ Setting for automatic data distortion – hiding commercial info, depersonalization

✓ Support for R/Python, BI

✓ Direct integration with Aggregion CDP – importing final segment, scripts, rules for segment creation or seed audience for look-a-like
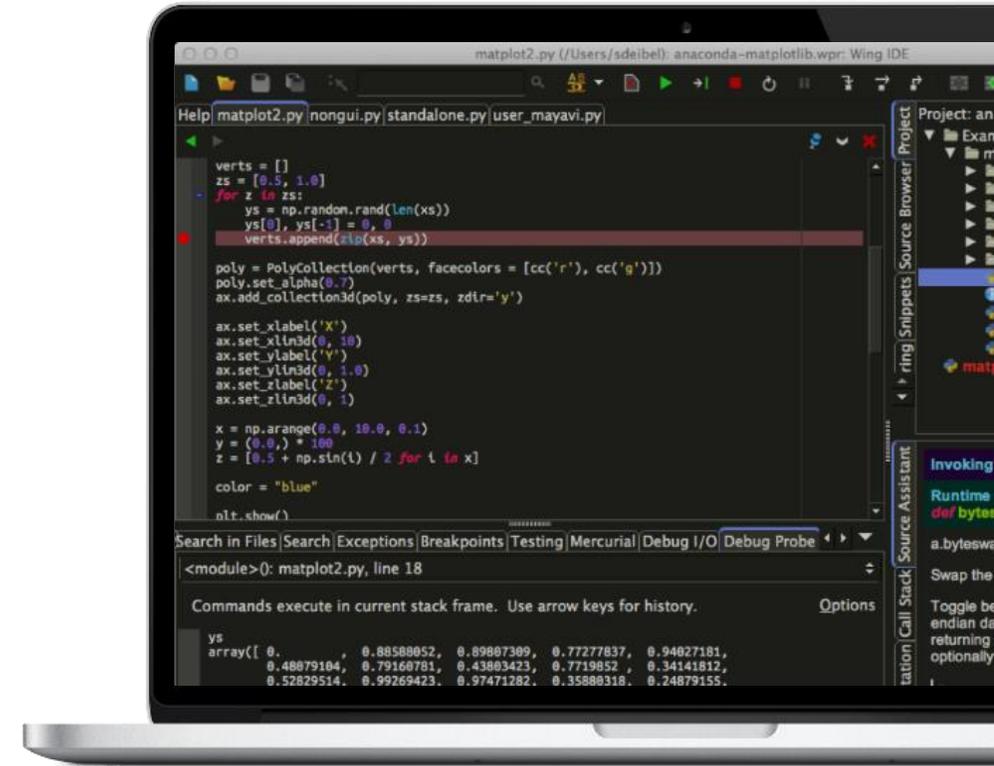
Aggregion DataLabs & CleanRoom Solution

Developing and running models using joint data

Model execution

Partner 1

Aggregion CDP

TEE

Confidential computing

Partner 2

Aggregion CDP

TEE

Scripts and audiences

Model development

DataLab

Anonymized data samples

Analytics and data scientists
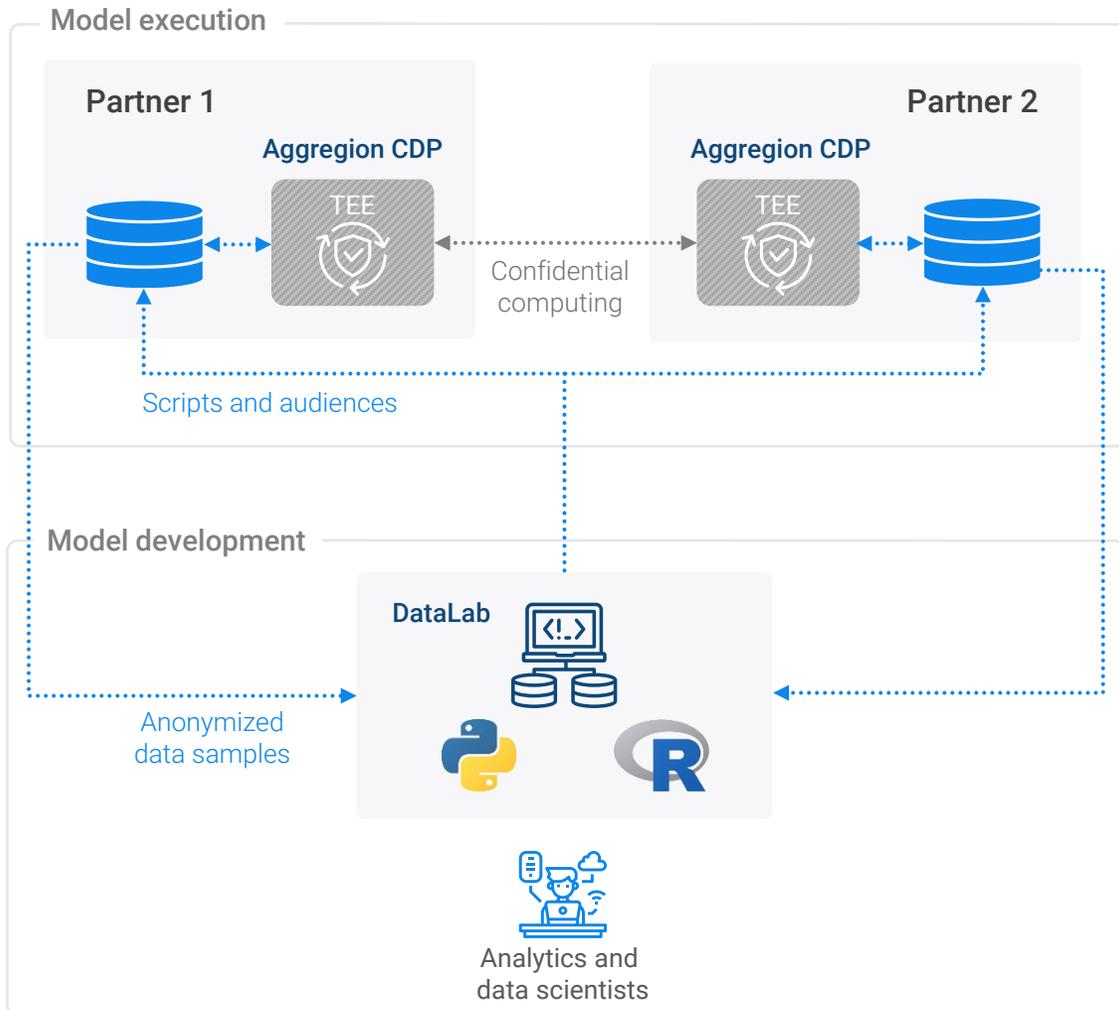
Model development & Analytics – DataLabs:

- Connected to partners' CDPs to order data (Data supermarket concept).

- Sampling, depersonalization and encoding of data for modeling. Matching between partners and with external data.

- Dedicated virtual machines with all tools for advanced analytics and data science. Data copy restrictions.

- GPU support

Model execution – trusted execution environment and cleanrooms:

- Created scripts are published for review, signing and running at full scale on joint data without external access.

- Scalable architecture. Support for all popular languages.

- Any number of partners.

- Audience activation at any Ad platforms

Use cases:

- Advertisement performance measurement, combining multi-party data

- Risk scorings (underwriting)

- Fraud management

- Clinical researches

- Market analytics, benchmarks

Working process in DataLabs

1 Audience creation
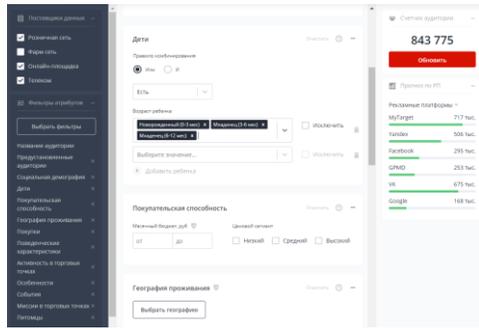
Using audience designer or scripts

2 Ordering data from the Partner
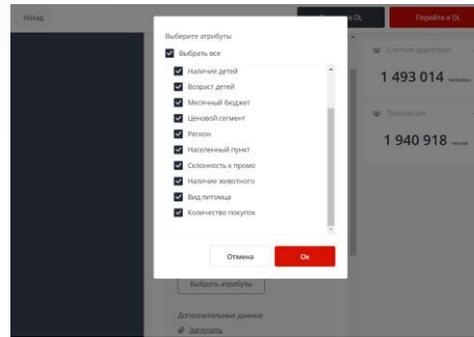
Picking necessary data fields for specified audience, including attributes, transactions, geo etc.

3 Data depersonalization
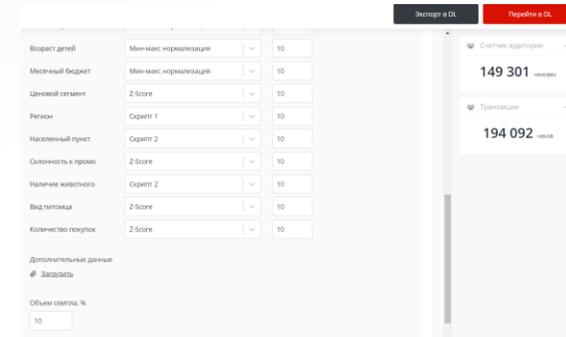
Normalization and adding noise as agreed between partners. Sampling parameters.

4 Matching & merging partners data
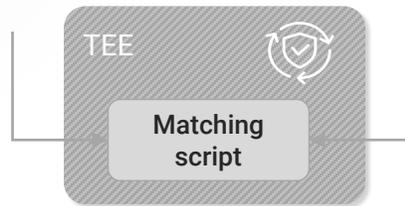
By agreed upon script, using confidential TEE of one of the partners. No data disclosure.

5 Modeling in DataLabs
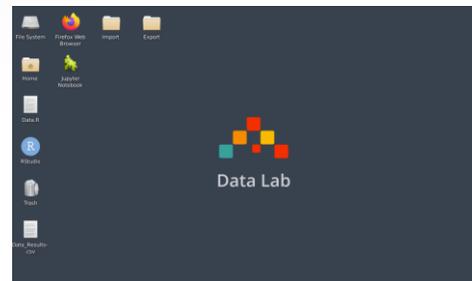
Analytics and modeling with merged depersonalized data. Model testing.

6 Scripts review and sign-off for execution

Review and approval of final scripts for their full-scale execution

Magnit Data Cooperation Platform

Magnit – Russian leading grocery retail chain, operating more than 20 000 stores in 5 formats

Data platform on top of customer data

- Single loyalty program for all 5 formats (23 000 stores) + partners

- 40+ mln MAU

- The largest number of touch points with customers amongst retailers

MAGNIT DATA COOPERATION PLATFORM

Sales/CRM data

Web data

App data

Aggregion CDP

Partners' data

Ad Management

O2O analytics

Customer analytics

Data modeling

Users:
- CPGs
- Media Agencies
- Magnit's marketing
- Other partners

Challenge →

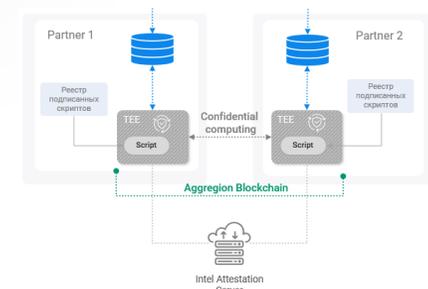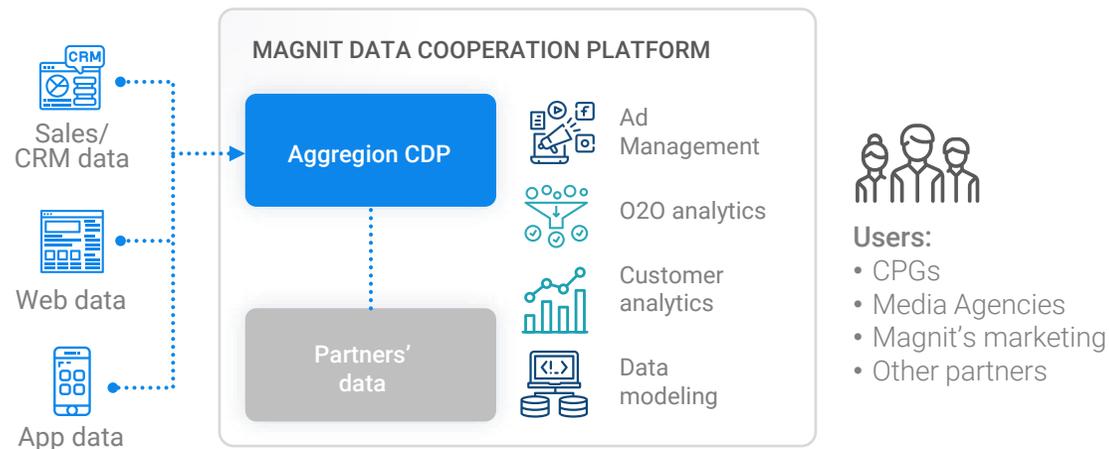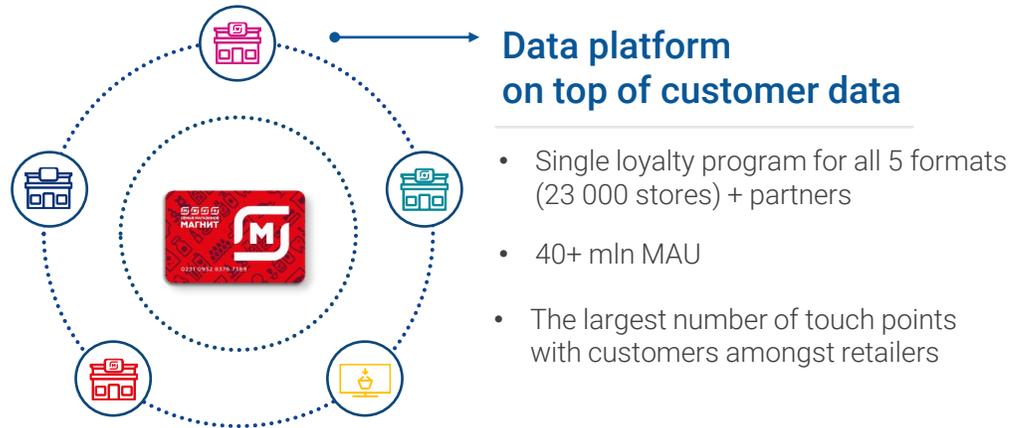- Enable CPGs and media agencies access to Magnit's CRM data to create custom segments and measure campaign performance, without accessing Magnit's data.

- Provide fully self-service mode for streamlining processes: audience and campaign creation, reporting, billing

- Allow other data partners to join the platform to increase ad accuracy and reach

Solution →

- Self-service aggregion CDP integrated with Magnit data lake, CRM, web/app

- Automated two-way integration with leading ad platforms for accurate online-to-offline measurement and campaign optimization

Results →

- > 1100 campaign launched for 10 months of production usage (25 for the previous comparable period). Substantial revenue for retailer and sales growth.

- Magnit supports its own marketing campaigns using the platform (30% cost reduction)

- Introduced joint products with customer research agencies on the platform: brand lift study, surveys, analytics.

- DataLabs/Cleanrooms solutions with CPGs for customer insights and data modeling

- Added new partners to the platform – pharmacy chain, e-commerce platform, social networks for further improving reach and accuracy

Banking group builds its ecosystem

TOP20 Russian Banking group, 3,5 mln. clients

Challenge →

- Cross sales using enriched customer profile of group companies' data
- Targeted customer acquisitions with affiliated partners (retailers, telco, construction)
- Cooperation with external partners: customer acquisition, data enrichment and monetization

Solution →

- Decentralized Aggregion CDP for key partners (Phase 1), integrated with CRM and group communication channels.
- Secure deterministic and probabilistic ID matching between partners. Customer Single ID and golden record across companies.
- Connecting with Aggregion partners' ecosystem for online audience matching and communications
- Self-service solution for audience creation and ad management

Results →

- Single customer profile across all group's companies
- Launched targeted Ad campaigns using group's data and partners data (Telco and Retail). Conversion 30-40% higher. Huge new target addressable audience.
- Phase 2 is under discussion: full scale rollout, web data, ML models, risk scoring models improvement.

Group and affiliated companies

Key group partners

Bank

Insu-rance

Med Insurance

Capital management

Leasing

Broker

Social cards

Retail

Aggregion partners

>75 mln. customers   Total audience

- Telco, retail, e-commerce
- Analytical companies
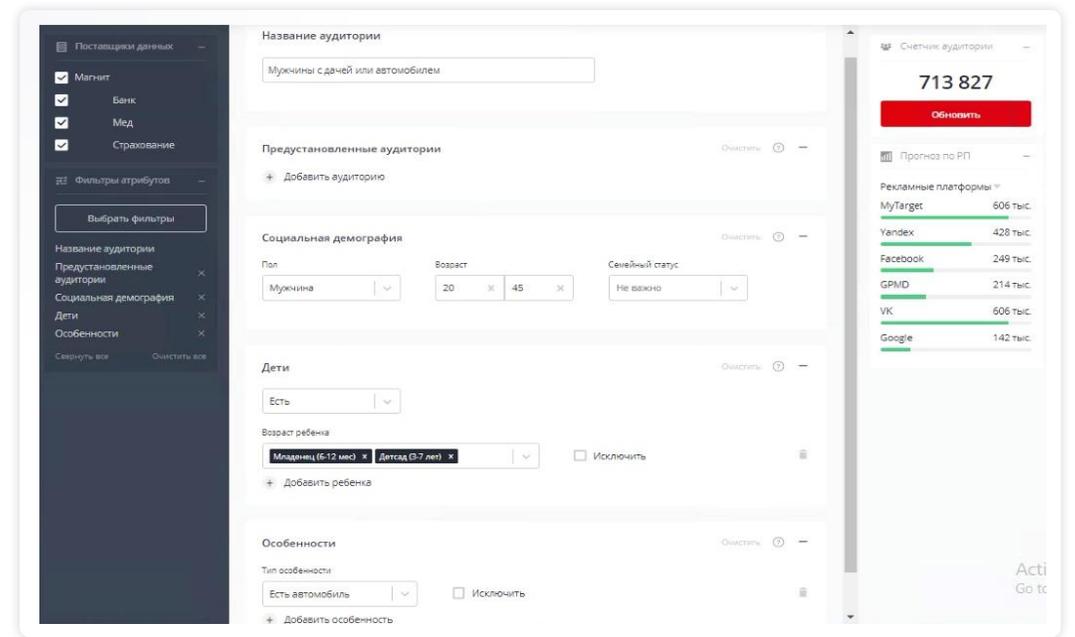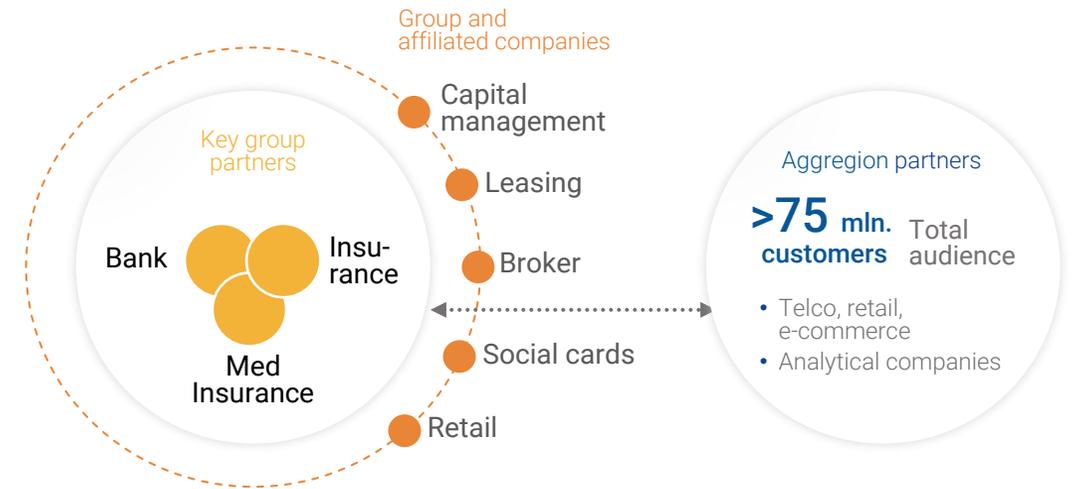
Beeline − Building Omnichannel Marketing and Adtech Platform

Russian and CIS top3 Mobile operator, with over 55M customers. Also has wide fixed network coverage, operates Beeline TV set top boxes. One of the largest player at local Ad and Marketing markets

Opportunities →

Develop a new type of networked omnichannel CDP, which allows customers to use their own data and channels powered with analytics from leading Telco and other partners − largest retailers, 3rd party data, services.

Solution →

- SuperCDP, based on Aggregion Decentralized CDP and Beeline data and AdTech services
- Key benefits for clients: unprecedented abilities for finding and targeting customers, combining wide coverage (>80M people), deep knowledge, ability to run real time trigger communications and personalize every offer. Everything securely and with through user consent management.
- Client audience exclusion and accurate look-a-likes for its extensions
- End-to-end campaign assessment: from audience creation to sales and loyalty
- 360 degree customer analytics with telco and other partners data

Results →

- Customer acquisition costs for clients down 30-50% (Retail, Banks)
- New revenue stream for retailers − millions USD/year
- Insightful analytics for CPG and Banks
- Pipeline about 40 projects for major corporate customers for Beeline

Beeline™

Data and Analytics
55M+ Beeline subscribers

Media Channels
Beeline and partners

AdTech and MarTech practice
Leading Player at local market

Aggregion

SuperCDP
- ✓ 1st party and 3rd party data and media channels
- ✓ 360 Customer view
- ✓ Realtime triggers
- ✓ End-to-end campaign analytics
- ✓ Data monetization
- ✓ Data decentralization

Decentralized CDP platform

Confidential computing

Partners Network
Retailers, Banks, 3rd party

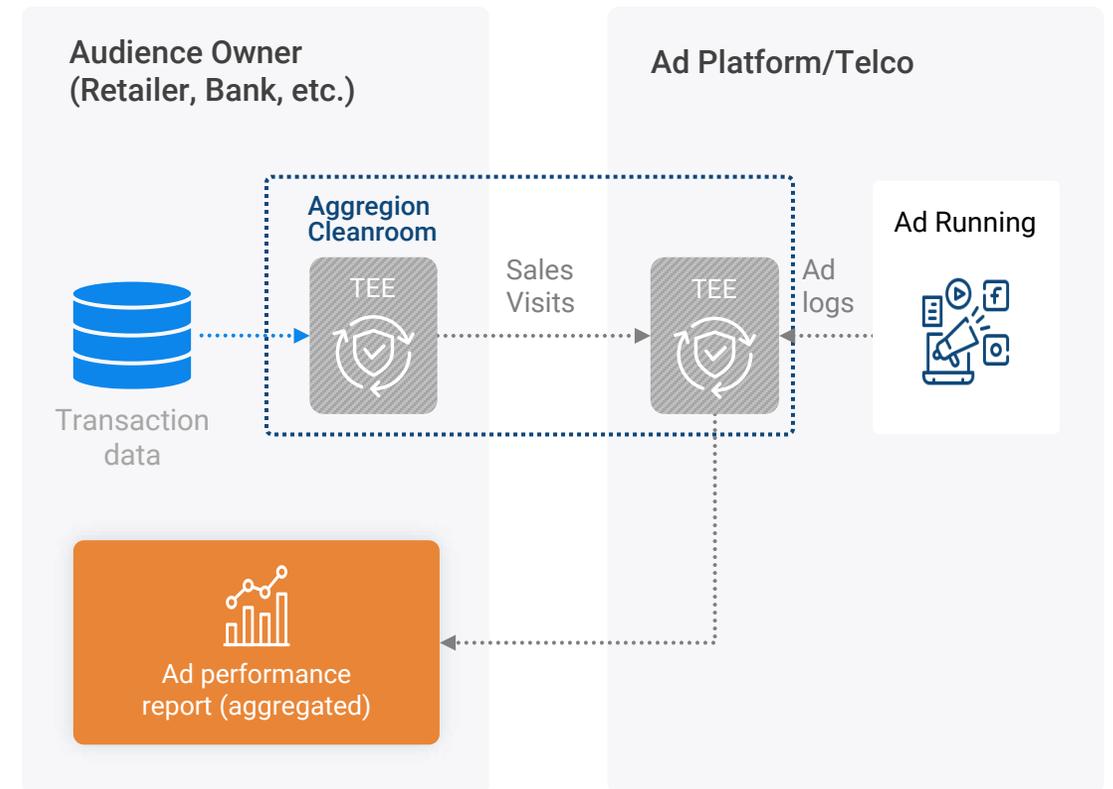# Ad Performance Assessment with Leading Ad Platforms

Challenge →

- Assess ad impact on sales and other business metrics for ad exposed audience, provide clear AB testing and insights.

- Calculations must be for each customer record. However, Ad platform cannot share ad logs and audience owner cannot share their business data.

Solution →

Aggregion Data CleanRoom, which allows to deploy the cluster of secure enclaves. Script for joint calculation is signed by parties, placed into the cleanroom and automatically calculates agreed upon reports and generates insights.

Results →

- Used as a standard tool for online-to-offline conversions with Top retailers and Leading Ad platforms. Ad impact for any campaigns now can be reliably measured. AB tests provided.

- The same solution is considered for using for TV and digital outdoor ad analytics

Audience Owner (Retailer, Bank, etc.)

Ad Platform/Telco

Aggregion Cleanroom

TEE

Sales Visits

TEE

Ad logs

Ad Running

Transaction data

Ad performance report (aggregated)

More press releases about Aggregion

Intel

Intel SGX Enables Magnit to Create a Trusted Computing Environment

How confidential computing delivers a personalized shopping experience

Microsoft

Magnit Launches Aggregion Platform for Digital Marketing

The new world of shopping, made in Central and Eastern Europe - Microsoft News Centre Europe

New developments for protecting data in use with Azure Confidential Computing

Aggregion Wins Microsoft Partner of the Year

Aggregion

Aggregion and Beeline Announce Partnership

Business media

Kommersant

RU «Магнит» займется цифровой рекламой. Ритейлер запустит собственную платформу

RU «Билайн Бизнес» и Aggregion выпустили новое AdTech-решение для омниканального маркетинга

Forbes

RU Богатые данные: как узнать потребителя, не нарушая его права

ВЕДОМОСТИ

RU «Билайн Бизнес» и Aggregion выпустили новое AdTech-решение

Sostav

RU «Билайн Бизнес» и Aggregion выпустили новое AdTech-решение для омниканального маркетинга

Aggregion Architecture - Detailed

Data provider 1

DataLake

App server
- Front-end
- Back-end
- Data transform
- Segments

DB сервер

ClickHouse

Segment formation

Data with hashed IDs

Licenses and transactions

Segment of Data provider 1

Blockchain Node

Secured enclaves

System, receiving the audience
(e.g. ad platform)

Blockchain

Licenses and transactions

Secured data exchange using blockchain

Works with any participant's instance

Data provider 2

Licenses and transactions

Blockchain Node

Secured enclaves

Customer