Organon Analytics

Extracting Value From Data and Value Based Pricing in Data Sharing Platforms : Telco and Finance Application

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Challenges

Quality of the Data

Data Security and Privacy

Volume and Variety of the Data (Data Transfer)

Predictive Modelling and Feature Extraction

Not Enough Expertise about Cross Sectoral Data

Price of the Data

Speed of Data Marketing

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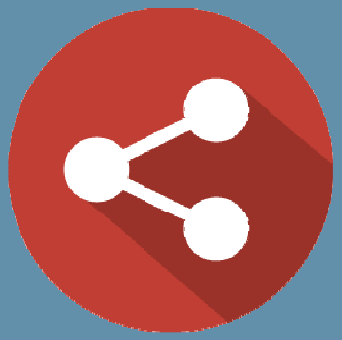
Solution



Intelligence Sharing Platform

Privacy Preserving

Automated Feature Extraction and Modelling

Federated Learning

Minimum Data Transfer

Transparent and Efficient Pricing

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Business Problem

Business Problem:
Bank wants to decrease credit defaults by using shared intelligence from Telco industry

Current Status:
Bank has its own credit score-card
Bank has the information of defaulted and non-defaulted customers

Data Provider:
Telco company has additional behavioral information of bank's customers

Challenges:
Telco company has many different sources of transactional data in huge amounts

- What is the added value of data sources?
- Which data to buy?
- Which data to transfer?

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System Privacy

1

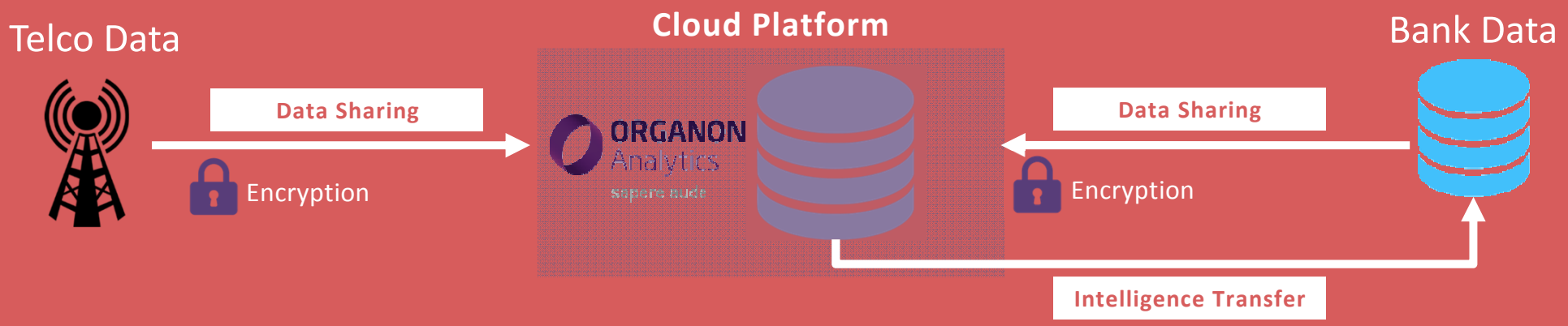
Telco Data Provider does not have access to bank data

2

Organon has privileges to access all hashed data but does not own hash keys

3

Service User does not have access to raw Telco data, only to the shared intelligence



Telco Company shares encrypted Customer ID and different transactional data sources

New score is generated with Best Contributing data and data is sent back to the bank with New Scores

Bank shares encrypted Customer ID, Target , Credit Default Score

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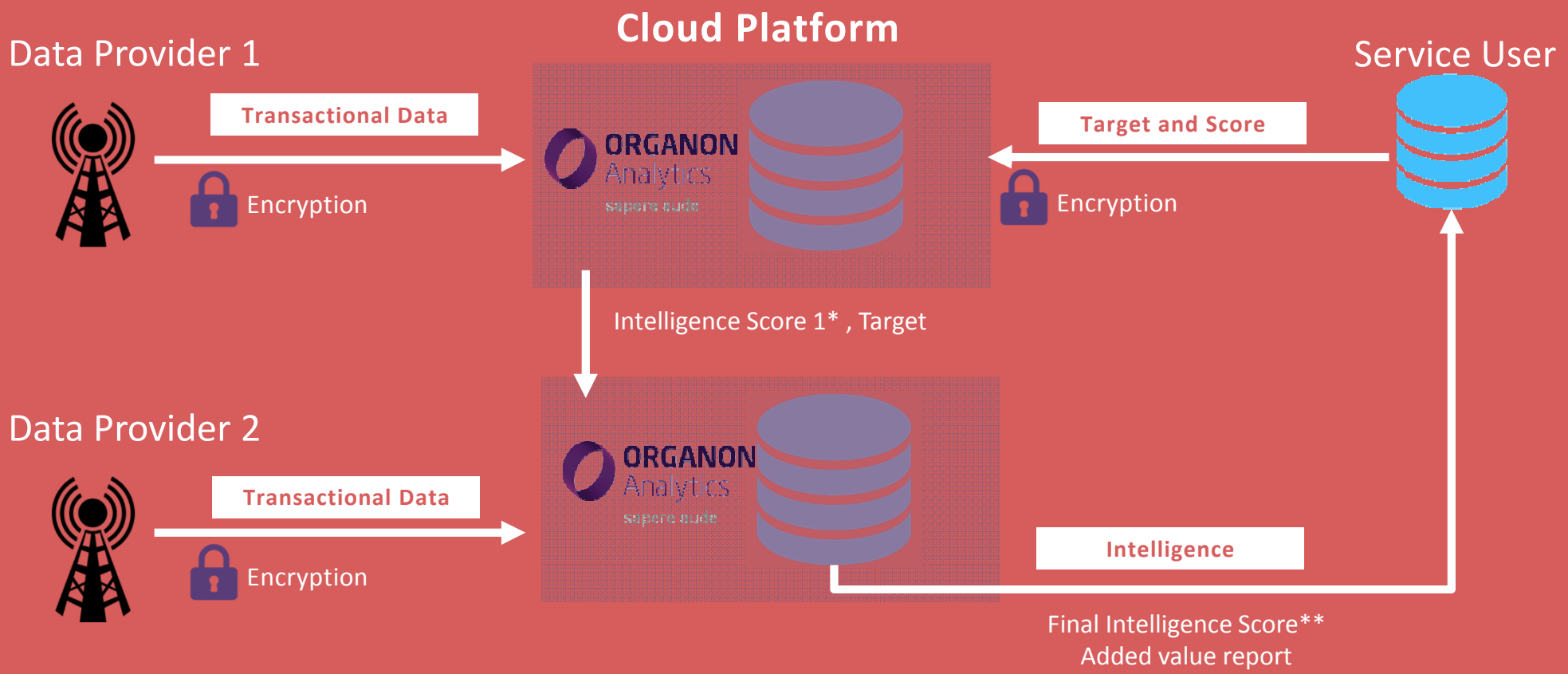
Federated Learning Architecture



* Intelligence Score 1: Score, generated with Best Contributing data from Data Provider 1

** Final Intelligence Score: Score, generated with Best Contributing data from Data Provider 2 and integrated with Intelligence Score 1

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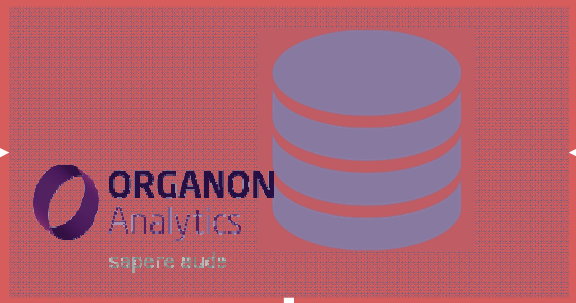
Federated Learning Architecture

Data Provider 1

DATE	HASH_ID	CALL_TYPE	Quantity
05/11/2017	c7e6959308e2c41	Voice	10
10/11/2017	c7e6959308e2c41	Data	1250005
01/11/2017	c7e6959308e2c41	SMS	20

Cloud Platform



Service User

COLUMNS	VALUES
HASH_ID	c7e6959308e2c41
DATE	15/11/2017
TARGET	Positive
SCORE	0.65

Intelligence Output 1

COLUMNS	VALUES
HASH_ID	c7e6959308e2c41
DATE	15/11/2017
FINAL_INTELLIGENCE_SCORE	0.89

Added Value Report

AUC W/o Data Share	AUC W Data Share
0.78	0.83

Percentage	Lift W/o Data Share	Lift W Data Share
%1	15	20
%5	10	13
%10	6	8
%20	3	5

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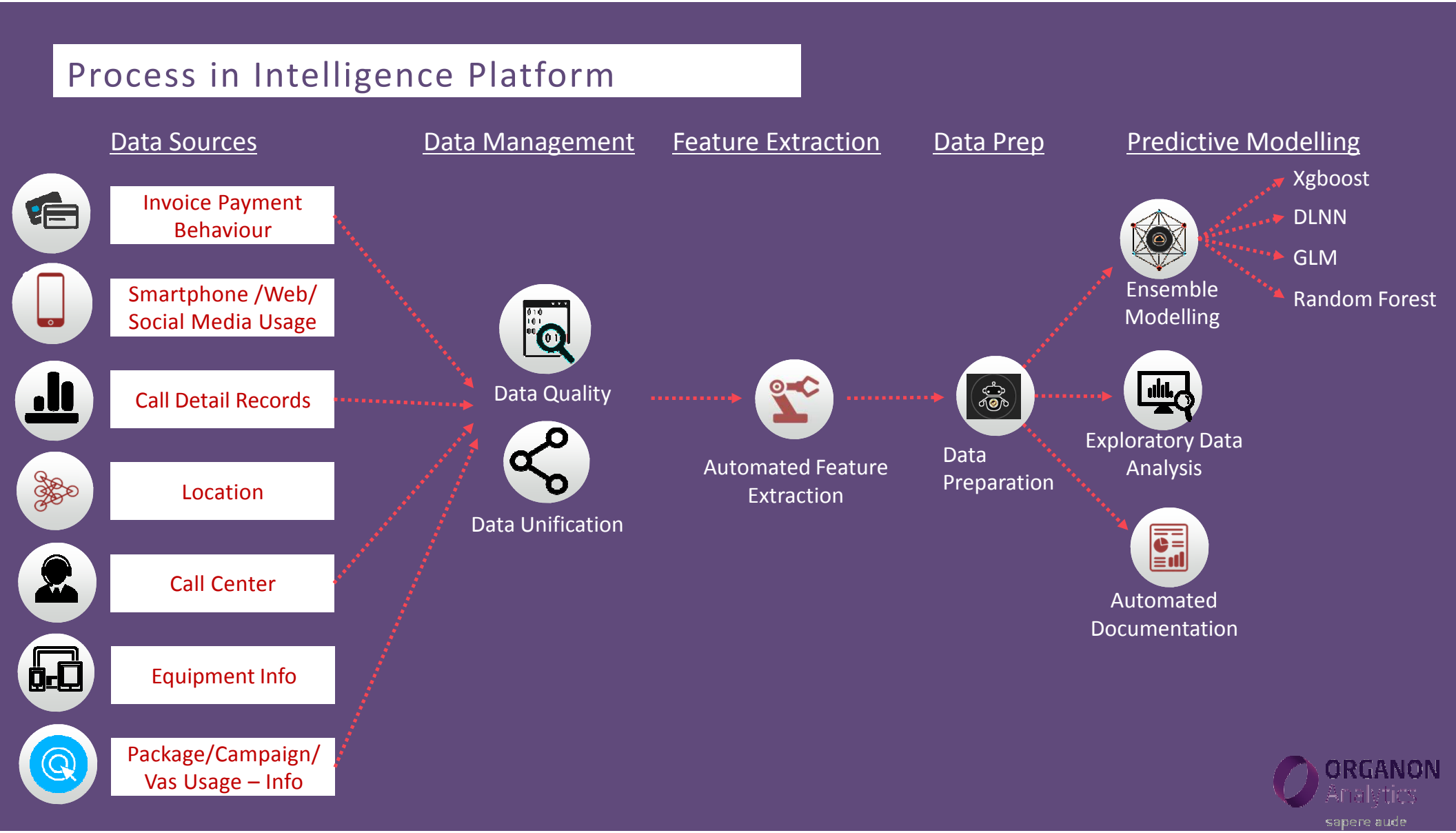
Process in Intelligence Platform



Intelligent Feature Extractor

Target File → Input File → Automated Feature Generation → Feature Reduction

HASH_ID	DATE	USAGE_TYPE	DETAILED_USAGE_TYPE	QUANTITY	EQUIPMENT_TYPE_ID	GIFT_USAGE
c7e6959308e2c41	18/12/2015	Data	application	166516	1002	1
c7e6959308e2c41	18/12/2015	Data	web_search	7515	1002	1
c7e6959308e2c41	18/12/2015	Voice	long_distance	5	1001	0
c7e6959308e2c41	18/12/2015	Voice	local	32	1001	1
c7e6959308e2c41	18/12/2015	SMS	text	142	1001	0
c7e6959308e2c41	18/12/2015	SMS	multimedia	0	1001	0

Variables can be produced

- Sum of user's voice usage in last 3 Months
- Average kilobyte usage of users in last 15 days
- Sum of Quantity each type of usage type in last 6 months
- Maximum and minimum usage of internet on Application and SMS usage on text in last 3 month

Number of variables can be produced

- Scale

(DATE) x (DETAILED_USAGE_TYPE) x (EQUIPMENT_TYPE_ID) x (GIFT_USAGE) x (Aggr. Operator)

- Example

(180) x (20) x (5) x (2) x (6)= 216 K variable for each hash_id

Question

Is it possible to create data that is given above in traditional way?

Solution

With the help of Combinatorial Optimization algorithms, only variable that can be used in analysis will be selected and created in DB.

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Results

Volume of Data

8 TB

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Shared Intelligence Volume

20 MB

Number of Tables

125

Organon AI

Increase in Discriminative Power

%32

Automated Extracted Features

6M

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Results

Quality of the Data

Checked automatically

Data Security and Privacy

Only intelligence sharing

Volume and Variety of the Data (Data Transfer)

20 MB of shared intelligence

Predictive Modelling and Feature Extraction

Done automatically

Not Enough Expertise about Cross Sectoral Data

Features are extracted automatically

Price of the Data

Transparent and based on accuracy improvement

Speed of Data Marketing

Process finished within 2 days

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Thank You

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