

# From Zero to Hero with KNIME at Anadolu Sigorta

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# ANADOLU SİGORTA

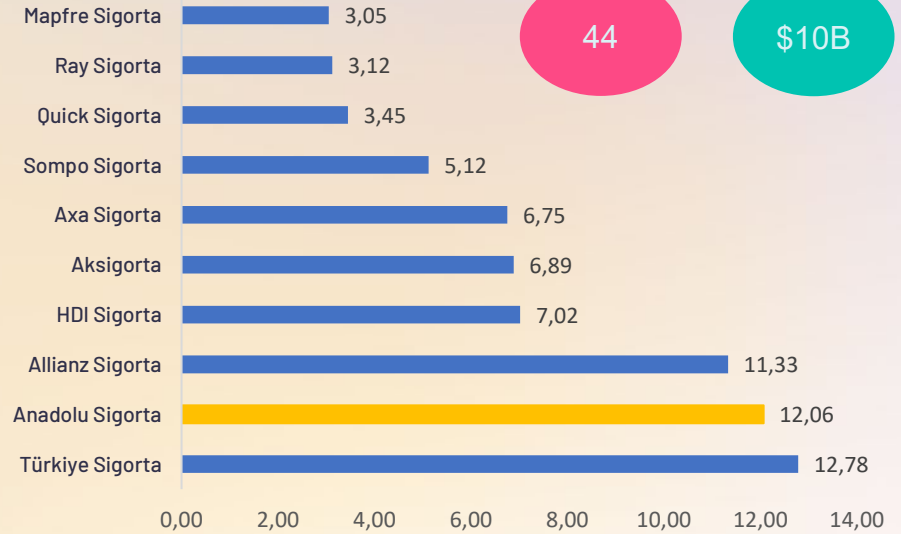
First National Insurance Company  
Founded by Atatürk in 1925

Türkiye İş Bankası Group Company  
(%35 Free Float)

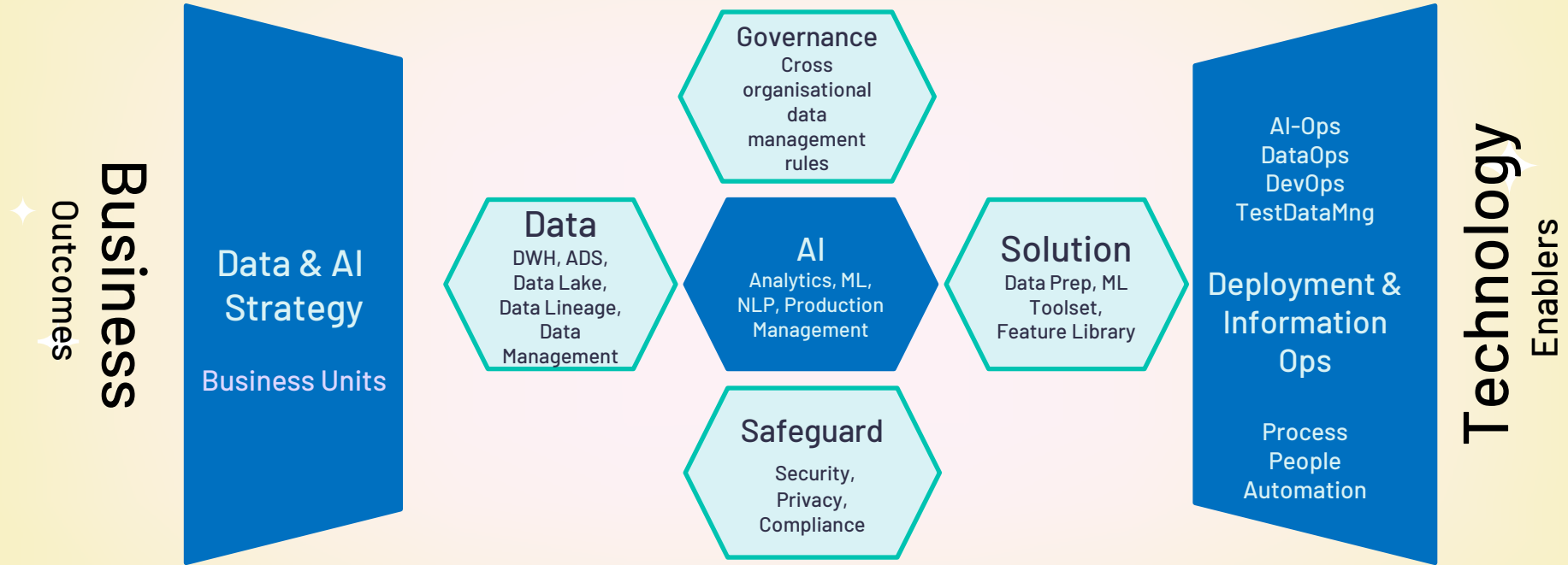
4500 Agencies

More than 23.7 B TL Revenue\*

## Turkey Insurance Market Top 10

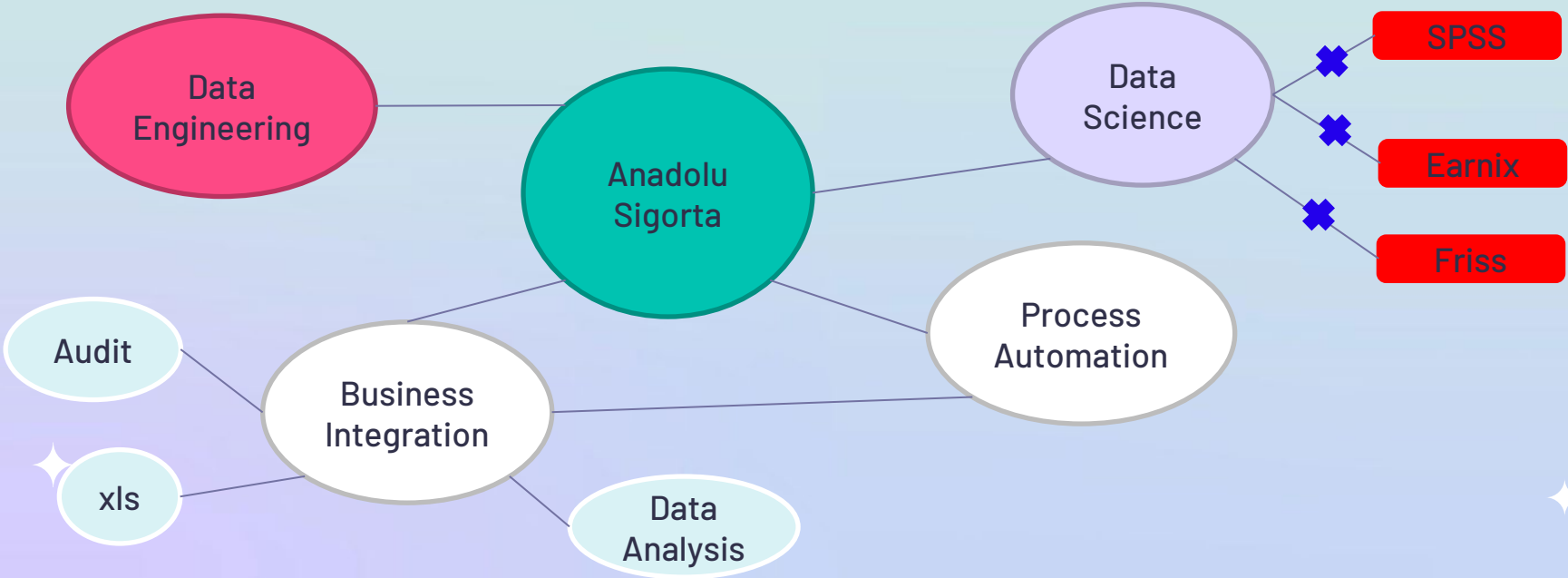


# Anadolu Sigorta AI Strategy



2020 ->

# KNIME at Anadolu Sigorta



# KNIME as Training Partner

Data Literacy

SAP BO

SQL

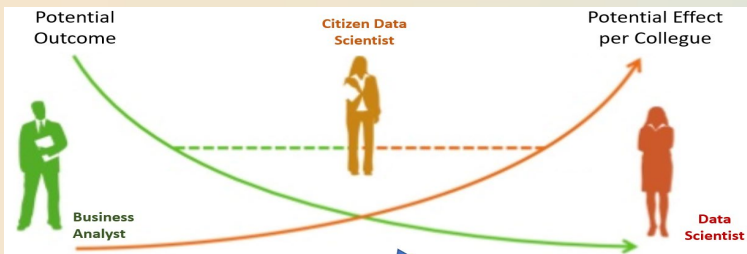
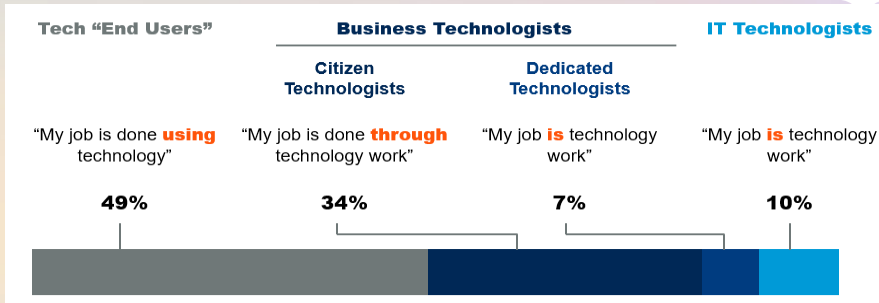
Data Visualization

KNIME Beginner

KNIME Advance

EDA with KNIME

Project

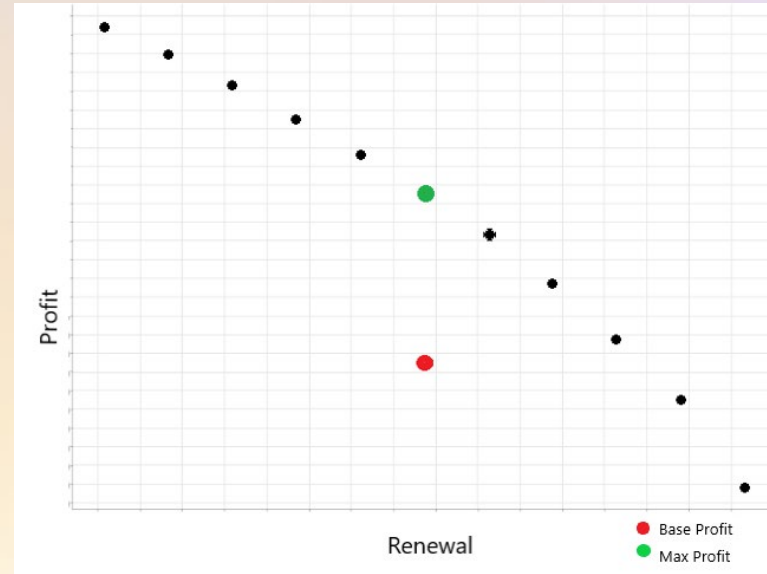


# First Contact with KNIME

## Insurance Renewal Probability



## Price Optimization



# The First Achievement of KNIME

## Customer Analytics



### Customer Segmentation

- Value Segmentation
- Potential Segmentation
- Behavior Segmentation



### Customer Churn Probability

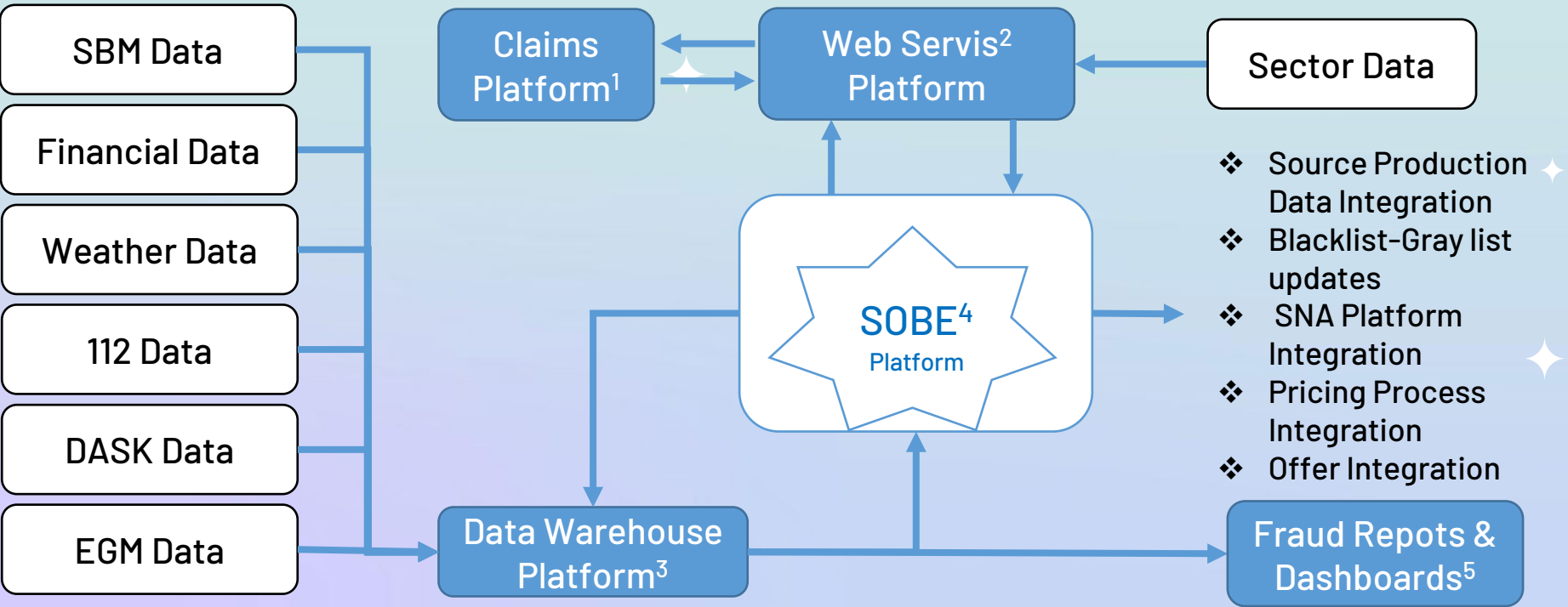


### Customer Cross-Sell Probability

- Motor
- Fire
- Health
- Earthquake
- Personal Accident



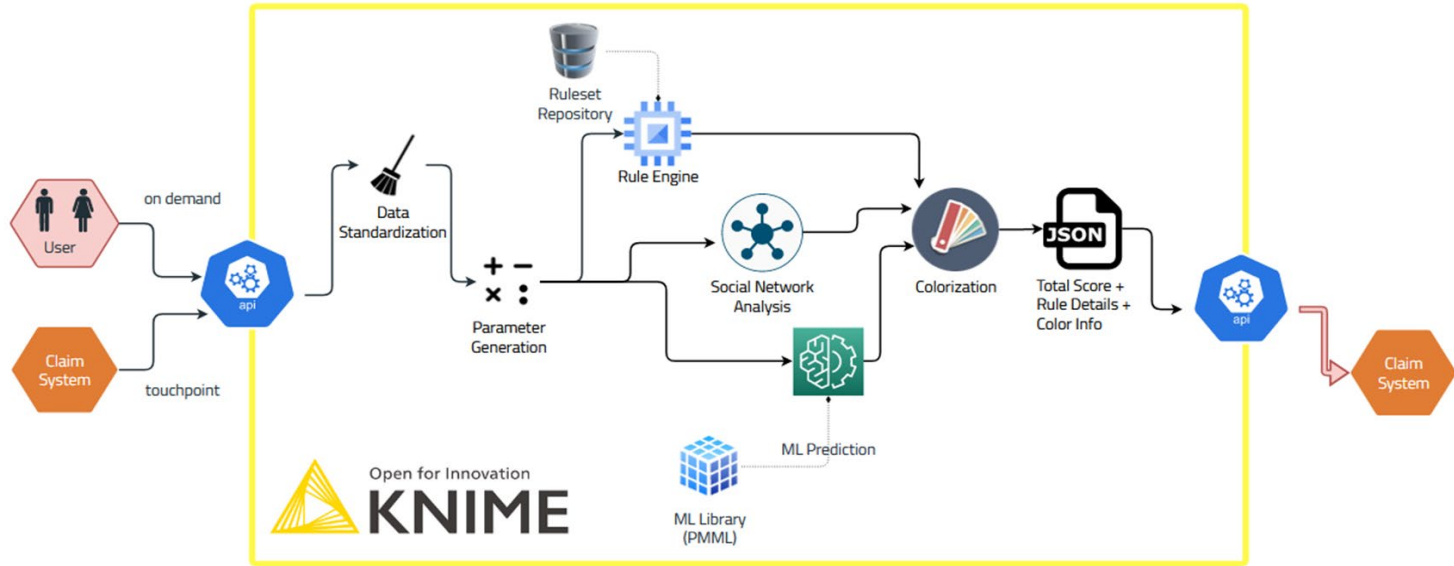
# The Biggest Challenge on KNIME - SOBE





# SOBE Application

## SOBE Fraud Detection App



# SOBE – Rule Engine

## Rule Engine Module

Runs on every claim file both motor and non-motor files

Business rules determined by business units and included known sector rules

~180 rules for Motor Sector, ~600 for Non-Motor Sector

Every rule has a score given by our claims departments which might be differ for each sector

Every Sector has different coloring mechanism

Rules can be managed via Workflows on Web Portal



# SOBE – ML Prediction

## Motor Claims Only

### Fraud Prediction

- Compatible with different ML Algorithms
- Touch point based probability calculation
- Estimation Probability increased by 54% over to the prior app

### Fraud Prioritization

- The probability of being detected in the files under investigation has increased significantly by 72%
- The decrease amount of files to be investigated by 31%

#### Scorer View

Confusion Matrix

	0 (Predicted)	1 (Predicted)	
0 (Actual)	2958	137	95.57%
1 (Actual)	85	59	40.97%
	97.21%	30.10%	

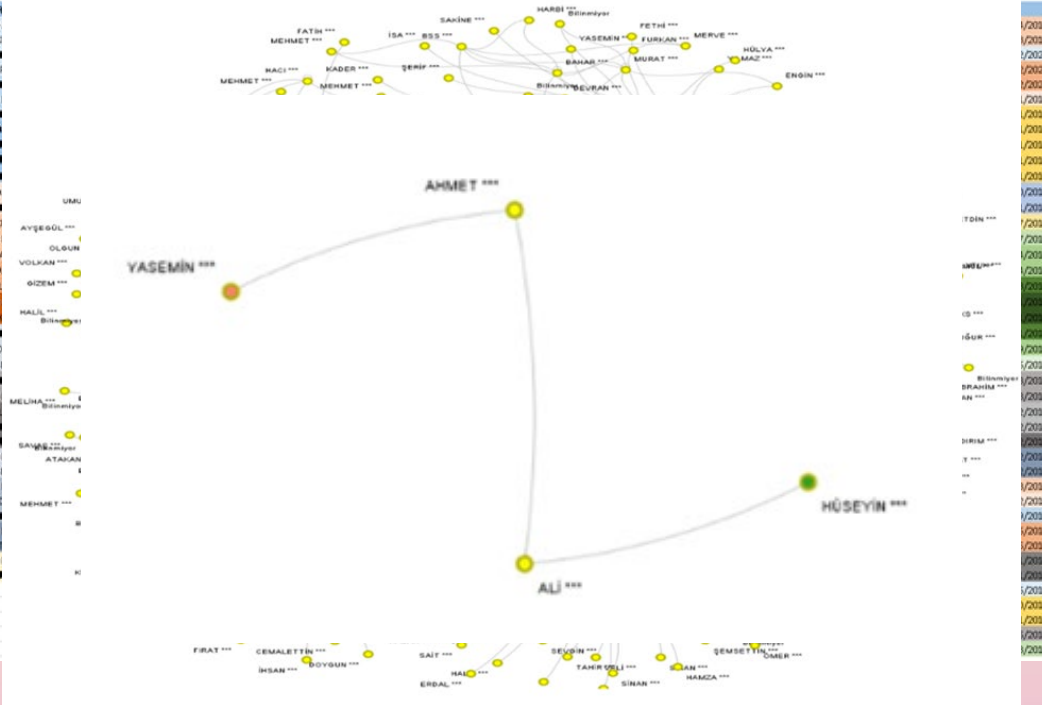
Overall Statistics

Overall Accuracy	Overall Error	Cohen's kappa ( $\kappa$ )	Correctly Classified	Incorrectly
93.15%	6.85%	0.312	3017	22

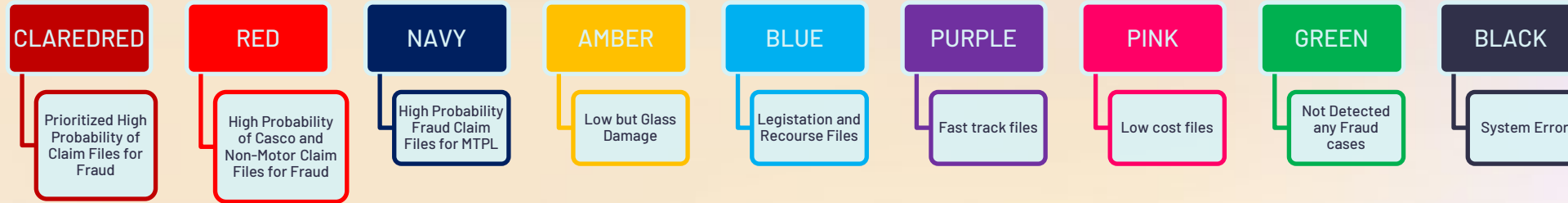


# SOBE – SNA Module

ARAÇ PLAKA	TESİS TARİHİ	SAMİPİ
34 1696	17/09/2018	
34 1696	14/09/2018	
34 1696	17/08/2019	
34 1696	11/05/2015	
34 5239	25/10/2019	
34 5239	24/10/2019	
34 5239	01/11/2019	
34 25	11/10/2019	
34 25	23/09/2019	
34 25	19/06/2017	
34 25	19/06/2019	
34 07	27/06/2019	
34 07	26/06/2019	
19 700	30/01/2018	
19 700	18/01/2018	
19 700	29/11/2017	
34 1870	21/10/2019	
34 1870	15/10/2019	
34 58	21/10/2019	
34 58	21/10/2019	
34 7400	17/12/2019	
34 7400	04/07/2019	
34 7400	18/12/2019	
34 071	05/02/2019	
34 071	26/09/2019	
34 297	17/07/2019	
34 297	19/08/2019	
34 297	05/07/2019	
61 289	16/12/2015	
61 289	11/12/2015	
06 2266	31/01/2019	
06 2266	04/02/2019	
06 2266	06/02/2019	
34 68	16/10/2017	
34 68	20/10/2017	
34 9905	06/03/2020	
34 9905	13/03/2020	



# SOBE – Colorization



# SOBE

## Before

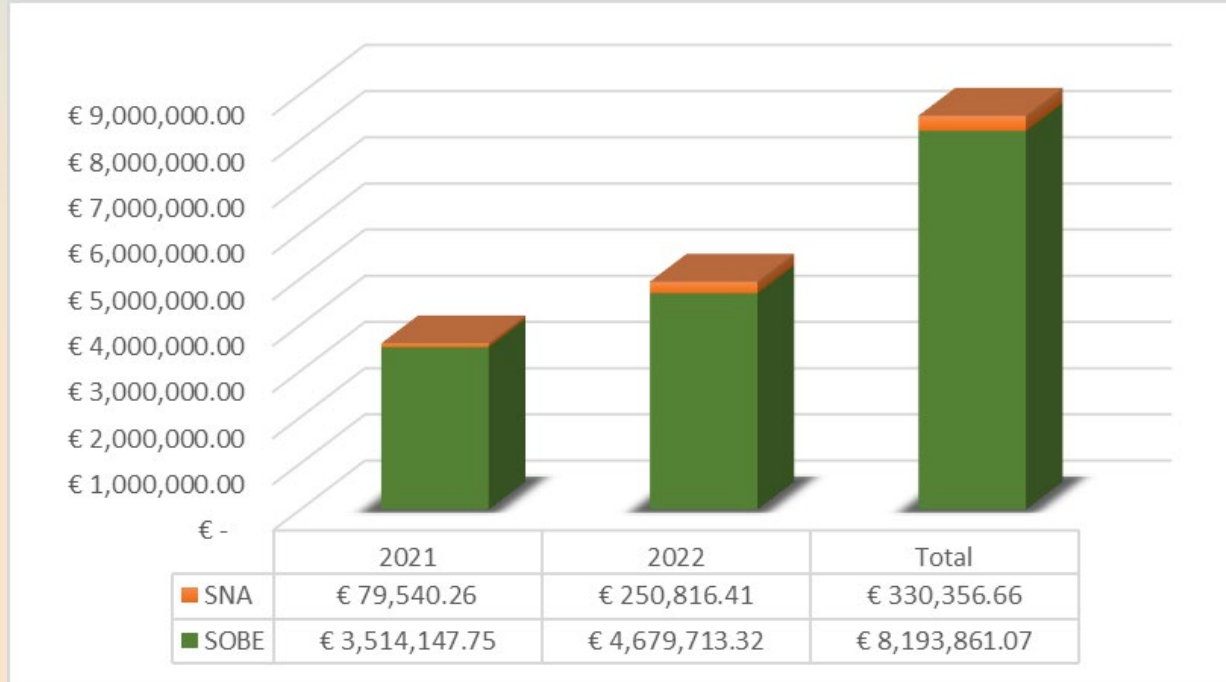
Fraud Detection Rate : 7-9%  
Manuel Relationship : 3-4 Months  
Implementation : Black box, dependent  
Maintenance : High cost, Dependent  
False Positive : No prioritizing

## After

Fraud Detection Rate : 13-17%  
Built-in SNA Module : 2 hours  
Implementation : In-house, easy  
Maintenance : In-house, easy  
False Positive : Decreased 31%



# SOBE – Earnings



# SOBE – Achievements



## SNA + SOBE Prizes

- ❖ CELENT 2021 Model Insurer Award – SOBE
- ❖ TDWI BI & Analytics 2021 Best Practices Award Winner
- ❖ IDC Finance & Technology Awards 2022- Fraud Management Category Winner

## Published Article About SOBE



SOBE: A Fraud Detection Platform in Insurance Industry - Kocaeli Journal of Science and Engineering  
<https://dergipark.org.tr/en/pub/kojose/issue/70940/1019125>





2023 !!!

# Anadolu Sigorta Projects

Health Insurance Management	Agency Management	Product Management	Underwriting & Risk Management	Sales Management	Marketing	Policy Service	Claim Management
AKUM Price Simulation	Goal Estimation	Product Analysis (Claim Frequency and Severity included)	Personal Risk Classification	Cross-Sell	Customer Segmentation	Renewal Probability	Fraud Detection
Outstanding Prediction	Agency Risk Prediction		Premium Control	Tendency to Buy	Sentiment Analysis		Withdrawal Prediction
Anomaly Detection	Agency 360 Model	Catastrophic Risk Analysis		Digital Familiarity	Customer Lifetime Value		Loss Prediction
AKUM Calculator	Campaign Goal Estimation		Price Optimization	Agency/Channel Classification	Churn Prediction		Legalization
					Socail Network Analysis(SNA)		



**Thank You**