devoteam

Data-driven intelligence

Turn your data into actionable insights and drive tangible business outcomes.
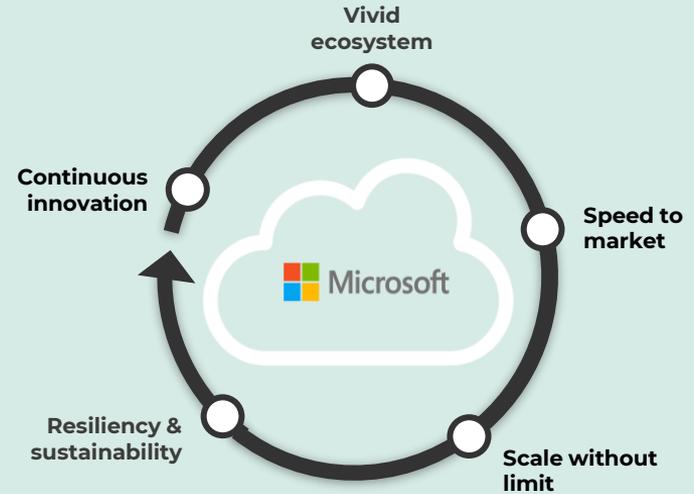
Creative tech for Better Change

Over 2.5 quintillion bytes of data are generated every day.[1]

But data is only valuable if you can translate it into actionable insights.

[1] Global Big Data Analytics Market Size, Market Share, Application Analysis, Regional Outlook, Growth Trends, Key Players, Competitive Strategies and Forecasts, 2019 To 2027

Better, faster, stronger with cloud-based platforms

Vivid ecosystem

Speed to market

Scale without limit

Resiliency & sustainability

Continuous innovation

Microsoft

Helping you move from data insights to impact

Data has become an increasingly important asset within a company to leverage business goals. From data strategy to implementation, we provide 4 modules that can be tackled stand-alone or chained into an end-to-end solution.

1. Empower your organization with a clear data vision

Draw a powerful data-centric business model to drive optimal business outcomes.

2. Get your data house in order

Set up strong foundations to leverage data with simplicity, flexibility and efficiency at scale.
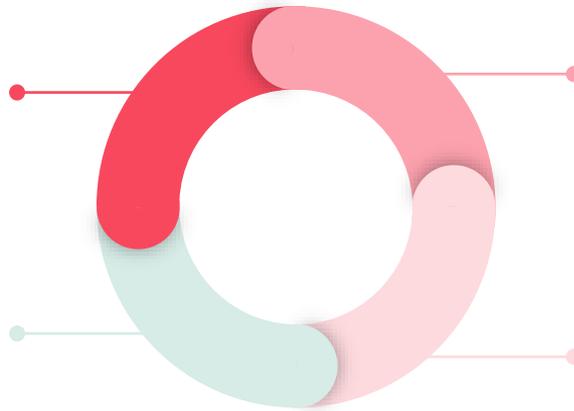
4. Turn data signals into actionable insights

Leverage your data with smart technologies to optimise performance, accelerate time-to-market, and generate new revenue streams.

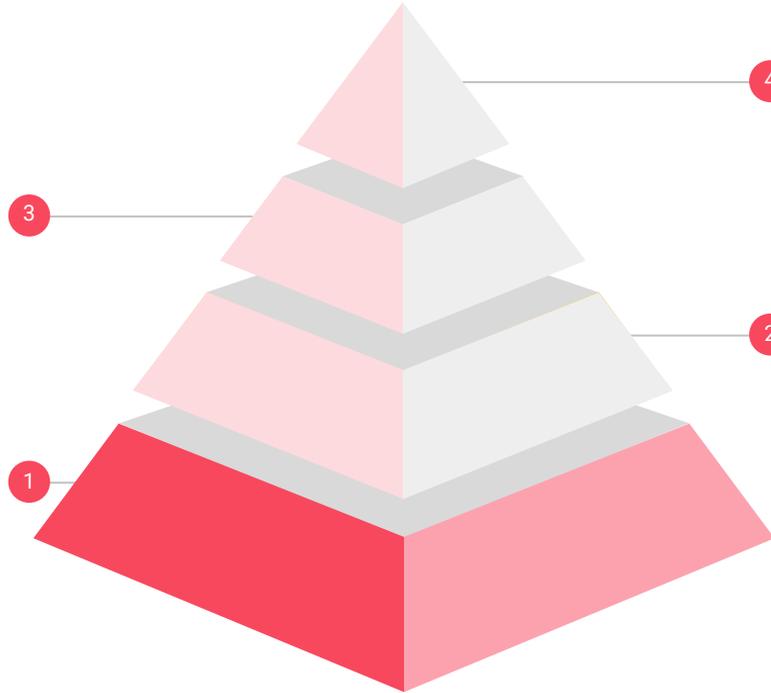**3. Ensure data quality and reusability**

Ensure continuous data quality and compliance while guaranteeing secure access to the data.

Industrialization

Incorporation of fraud detection into business processes.

4

Fraud detection implementation

Implementation of a tailor-made fraud detection implementation, incorporated into your business processes.

3

Implementation of prerequisites

Implementation of prerequisites (e.g. data architecture, data availability, ...) for fraud detection.

2

Pre-Implementation assessment

Thorough analysis of current state and needs. An actionable plan for a tailor-made implementation of both prerequisites and fraud detection.

1

Microsoft Gold Partner

15 Gold Competencies

Unrivalled **talent and experience**

Our data wizards wield more than **200+ certifications,** combining vast industry experience with specialised, state-of-the art skill sets.

Industry-specific know-how

Financial services	Manufacturing	Logistics & Transportation	Retail	Energy	Administration & Public Services	Healthcare & Pharmaceutical	Telecom

Fraud detection
Using multiple methods to detect high-risk entities

Anomaly detection

Using unsupervised machine learning, entities can be identified that do not fit the norm and stand a higher chance of being high-risk.

Community analysis

By mapping out all connections between entities, clusters of entities which are closely linked to each other can be identified. Within these clusters, domain expertise can be incorporated into the community analysis to determine the fraud risk of each entity within the community.

Rule-based methods

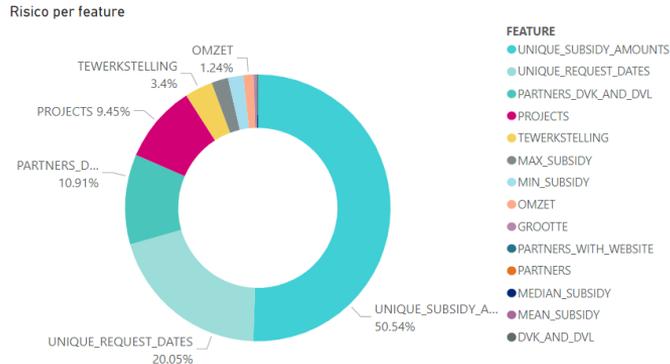Using rules defined by expert users, domain expertise can be incorporated into the fraud detection tool to indicate a high risk of fraud when certain conditions are met.

Supervised machine learning

Using knowledge from the past (i.e. entities which we know were fraudulent or not), a machine learning algorithm can be taught to predict the probability of fraudulence for new entities.

Creative tech for Better Change

Anomaly detection

- Deep learning (Autoencoder)
  - Learns 'normal' behaviour
  - 'Anomaly score' denotes dissimilarity from normal behaviour
- Identify outliers
- Provide additional information to end users
  - Why is this an anomaly?

Risico per feature

OMZET 1.24%
TEWERKSTELLING 3.4%
PROJECTS 9.45%
PARTNERS_D... 10.91%
UNIQUE_REQUEST_DATES 20.05%
UNIQUE_SUBSIDY_A... 50.54%

FEATURE
- UNIQUE_SUBSIDY_AMOUNTS
- UNIQUE_REQUEST_DATES
- PARTNERS_DVK_AND_DVL
- PROJECTS
- TEWERKSTELLING
- MAX_SUBSIDY
- MIN_SUBSIDY
- OMZET
- GROOTTE
- PARTNERS_WITH_WEBSITE
- PARTNERS
- MEDIAN_SUBSIDY
- MEAN_SUBSIDY
- DVK_AND_DVL

Community analysis

- Using data like phone numbers, e-mail addresses, names, etc. we can map all connections between entities
- Use InfoMap algorithm to identify 'communities' of close-knit entities
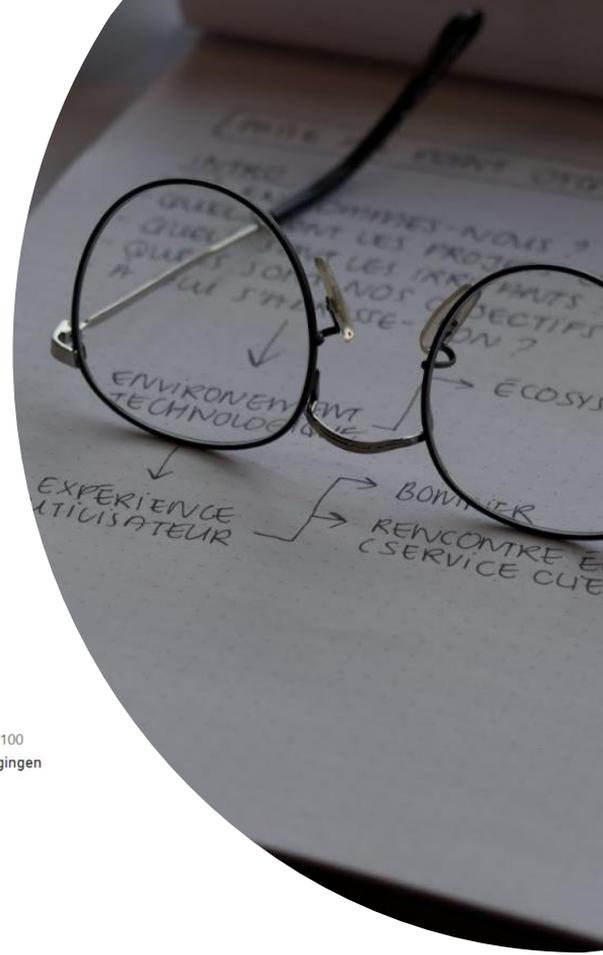- Perform risk assessment per community based on domain expertise

Netwerk visualisatie
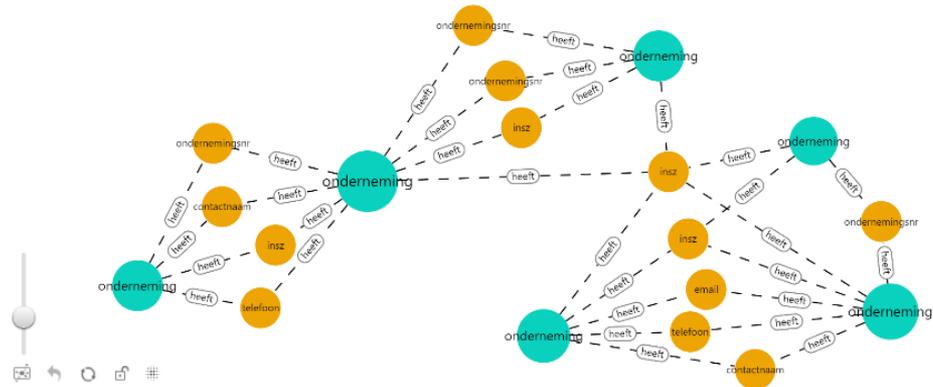
Rule-based methods

- Using domain expertise, define rules used to assess risk, e.g.
  - For ecology subsidies, certain technologies are more high-risk than others (based on past experience)
  - For KMOP subsidies, some topics are not eligible for subsidies (e.g. flying lessons, hypnosis, …)
- Rules are used together with artificial intelligence and other algorithms to detect high-risk projects

Dossier	Datum	Status	Onderneming	Aangevraagde steun	Uitbetaalde steun
	02/04/2020	Actief		14.08K	14.08K

Blacklist score	KBO status score	CDBC score	Rekeningnr score	Adres score	Vestigingen score
0 0 100	0 0 100	0 0 100	0 100 100	0.00 100.00 100.00	0 100 100

	KBO status	CDBC flagged	Rekeningnr	Aantal vestigingen in KBO	Aantal actieve vestigingen in Vlaanderen
	AC			1.00	0.00

	KBO stopzettingsdatum			Aantal vestigingen in Vlaanderen in KBO	Aantal vestigingen gesubsidieerd
	(Blank)	Geen		0.00	1.00

Supervised machine learning

- Neural network trained on 'labeled data', i.e. past data with labels given ('fraud' / 'not fraud')
    - Note: Data often needs labeling by hand, can be a time-consuming process
    - Amount of labeled data available will significantly impact results
- Trained model used to predict class (in this case fraud / not fraud) for new, unseen data

Supervised machine learning - Details

Classifier binair (fraude/geen fraude)

Voorspelling	Kans
Fraude	0.71

Classifier subsidie carrousel

Voorspelling	Kans
Geen	0.97