

A Data Driven Journey Pieter de Kok RA

AANJAGER CONEY

31 oktober 2018

Coney
Discover your data!

MIJN DATA REIS

1994



**TRADITION
DATA
INTERCHAGE**

EDI
ELECTRONIC DATA
INTERCHANGE



YOUR PARTNER'S
INTERNAL SYSTEMS



EDI DOCUMENT



YOUR INTERNAL SYSTEMS

MIJN DATA REIS

1995



NAVIGATOR

Tutorial Analytics.acf

Scripts

Tutorial

Tables

_Source

- _Acceptable_Codes
- Employee_May
- _Invoice_Data
- _Unacceptable_Codes
- EMPLOYEE_CLASS
- EMPLOYEE_MAY_ALL
- EMPLOYEE_MAY_GREATER_THAN_10
- EMPLOYEE_MAY_LESS_THAN_10
- EMPLOYEE_MAY_NAMESONLY
- Employee_May_Random25
- Employee_May_Startify
- EMPLOYEE_MAY_TOTAL_JOIN
- EMPLOYEE_SUMM
- EMPLOYEE_SUMM_SORTED
- EMPLOYEE_SUMM_SORTED_BONUS

Tutorial_Analytics

Workspaces

COMMAND LINE

Tutorial Sample Employee_May

	First_Name	Last_Name					
1	Leila	Remlawi					
2	Vladimir	Alexov					
3	Matthew	Lee					
4	Alex	Williams					
5	Narinder	Singh					
6	Albert	Schmidt					
7	Mohan	Parhar					
8	Nicole	Levy					
9	Jeanette	Wallace					
10	Will	Harris					
11	Nils	Chiario					
12	James	Lee					
13	Heidi	Wiebe					
14	Pamela	Coverly					
15	Denise	Nieweler					
16	Hugh	Vanda					
17	Tim	Lalli					
18	Andre	Jacques					
19	Hilbert	Frank					
20	Patrick	Doyle					
21	Beth	Sinclair					
22	Igor	Belchev					
23	Patricia	Walters					
24	Bernd	Mueller					
25	Iris	Shamus					
26	Paul	Perry					
27	Antonio	Sanchez	8590122965563802	100046	05/26/1999	55340.00	7220.74
28	Jacqueline	Miller	8590128618251512	100073	06/15/1995	67750.00	7084.07
29	John	Gilbert	8590125323000756	100093	09/08/1998	35900.00	4783.03
30	Janet	Gilley	8590128098022583	100125	07/02/1999	29950.00	6325.61
31	Lars	Andersson	8590126009071523	100130	02/18/1995	45370.00	6000.45
32	Olga	Roman	8590128742834790	100188	04/30/1996	63840.00	2596.77

Sample

Main More

Sample On... Bonus_2002

Sample Type
 MUS Record

Sample Parameters

Fixed Interval Interval

Cell Start

Random Cutoff

Local Use Output Table

	BONUS_PERCENTAGE	CARD_HASH	MONTH	BONUS_RANGE
40	2.66	8590	12	Less than or equal to 10%
43	11.05	8590	10	Greater than 10%
49	1.70	8590	03	Less than or equal to 10%
02	18.57	8590	08	Greater than 10%
75	21.68	8590	09	Greater than 10%
98	2.31	8590	09	Less than or equal to 10%
97	6.39	8590	08	Less than or equal to 10%
97	3.98	8590	06	Less than or equal to 10%
31	2.05	8590	05	Less than or equal to 10%
57	12.27	8590	11	Greater than 10%
53	17.09	8590	07	Greater than 10%
05	10.09	8590	12	Greater than 10%
14	11.36	8590	02	Greater than 10%
31	3.48	8590	10	Less than or equal to 10%
07	16.43	8590	09	Greater than 10%
33	6.29	8590	07	Less than or equal to 10%
46	23.21	8590	07	Greater than 10%
33	11.46	8590	02	Greater than 10%
45	3.99	8590	04	Less than or equal to 10%
57	3.87	8590	08	Less than or equal to 10%
79	11.18	8590	11	Greater than 10%
74	0.25	8590	11	Less than or equal to 10%
51	23.34	8590	10	Greater than 10%
16	3.01	8590	09	Less than or equal to 10%
33	19.81	8590	09	Greater than 10%
33	14.42	8590	03	Greater than 10%
05	13.05	8590	05	Greater than 10%
06	10.46	8590	06	Greater than 10%
09	13.32	8590	09	Greater than 10%
07	21.12	8590	07	Greater than 10%
02	13.23	8590	02	Greater than 10%
04	4.07	8590	04	Less than or equal to 10%

MIJN DATA REIS

1999

A night cityscape with light trails on a highway. The image shows a multi-lane highway at night with light trails from cars. In the background, there are several tall, illuminated skyscrapers. The overall color palette is dark with highlights from the city lights and light trails.

**RA STUDIE
AFSTUDEER SCRIPTIE
AUDITING
ON THE DIGITAL HIGHWAY**

MIJN DATA REIS

2000

Greetings from

**SILICON
VALLEY**

CALIFORNIA

Auditing E-commerce Business - silicon valley

MIJN DATA REIS

2005

Coney
Discover your data!

2018

DATA DRIVEN

WAAR STAAN WE?

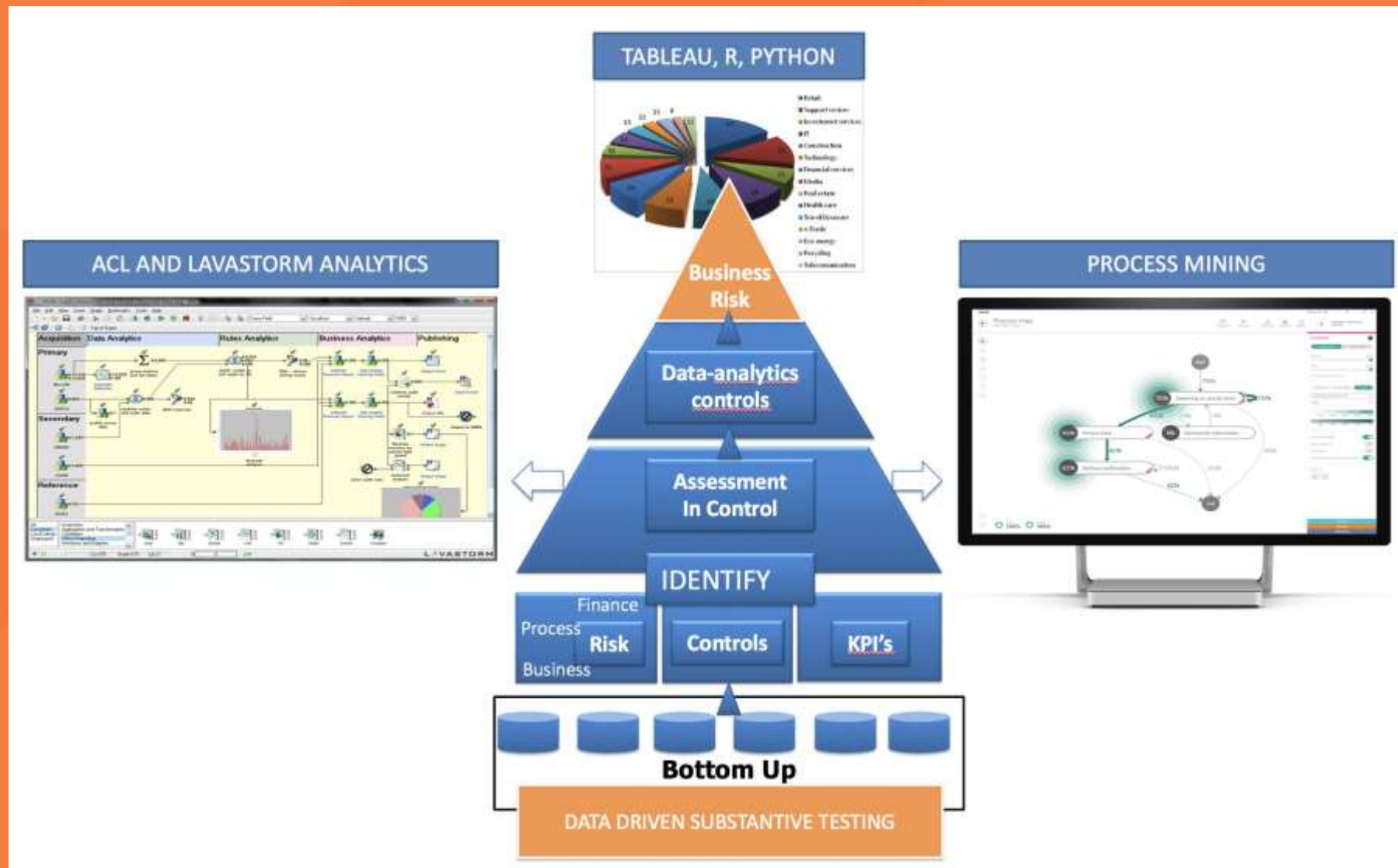
ONZE DIENSTEN:

DE TOOLS WELKE WE GEBRUIKEN

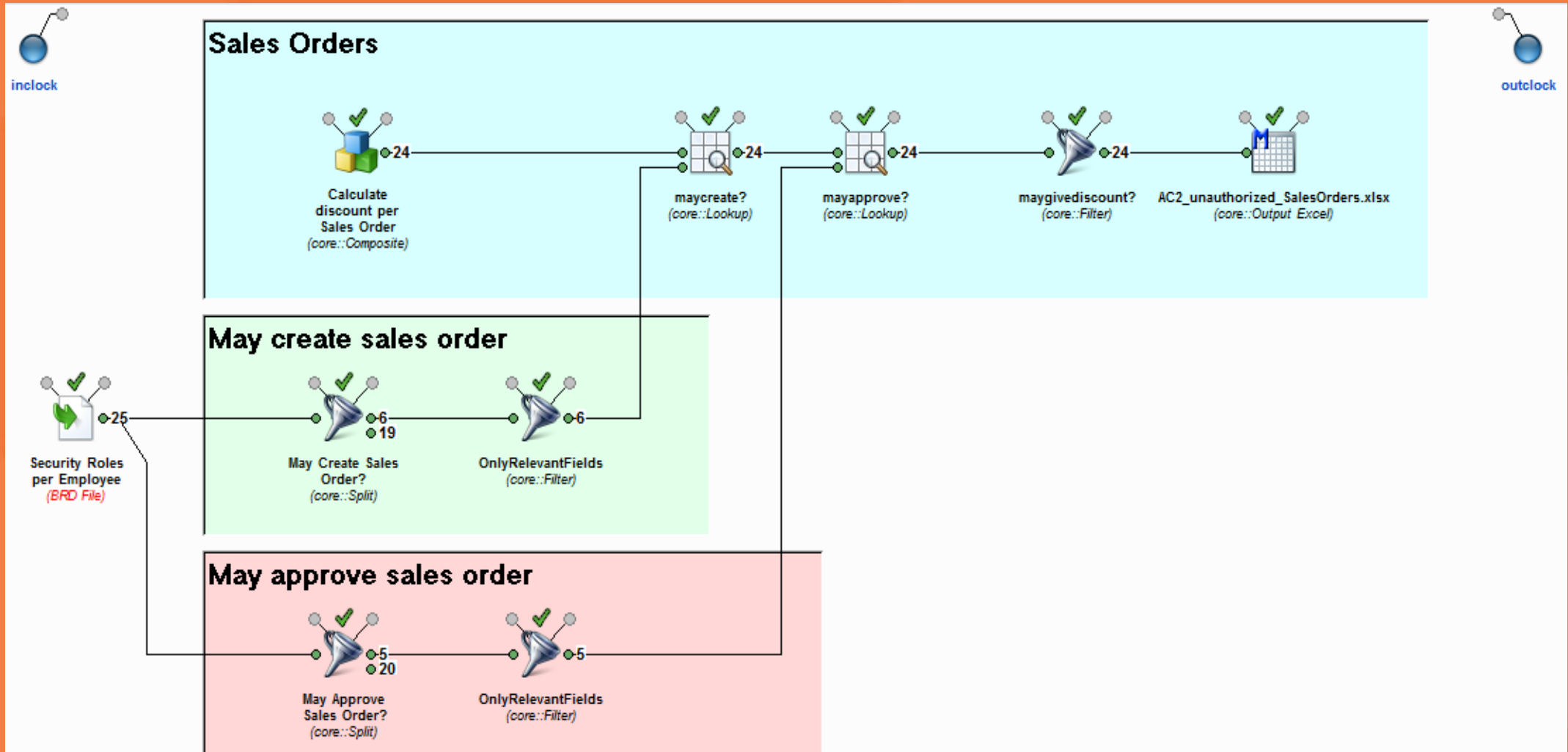
**CONTINUOUS
MONITORING** – LARGE
– CROSS BORDER

**BUSINESS &
FINANCIAL
ANALYTICS**
- MID MARKET

AUDITING
- MID MARKET

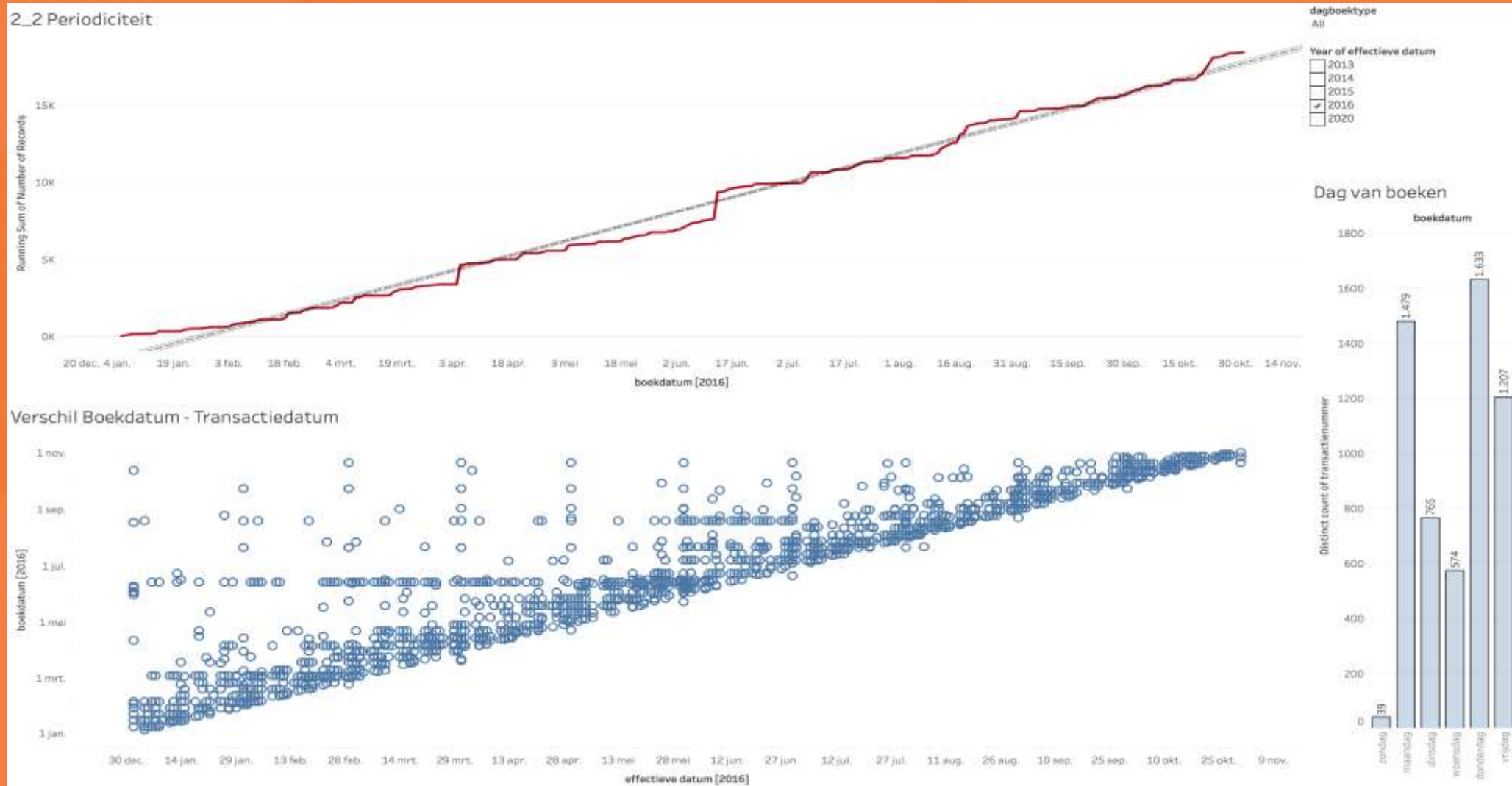


RODE DRAAD CONEY : BOUWEN VAN ANALYTICS PLATFORMEN & ALGORITMES – ONGOING ANALYTICS



Relevante COS Standaarden DATA DRIVEN – voorbeeld

FRAUDE 240 – Benford's Law

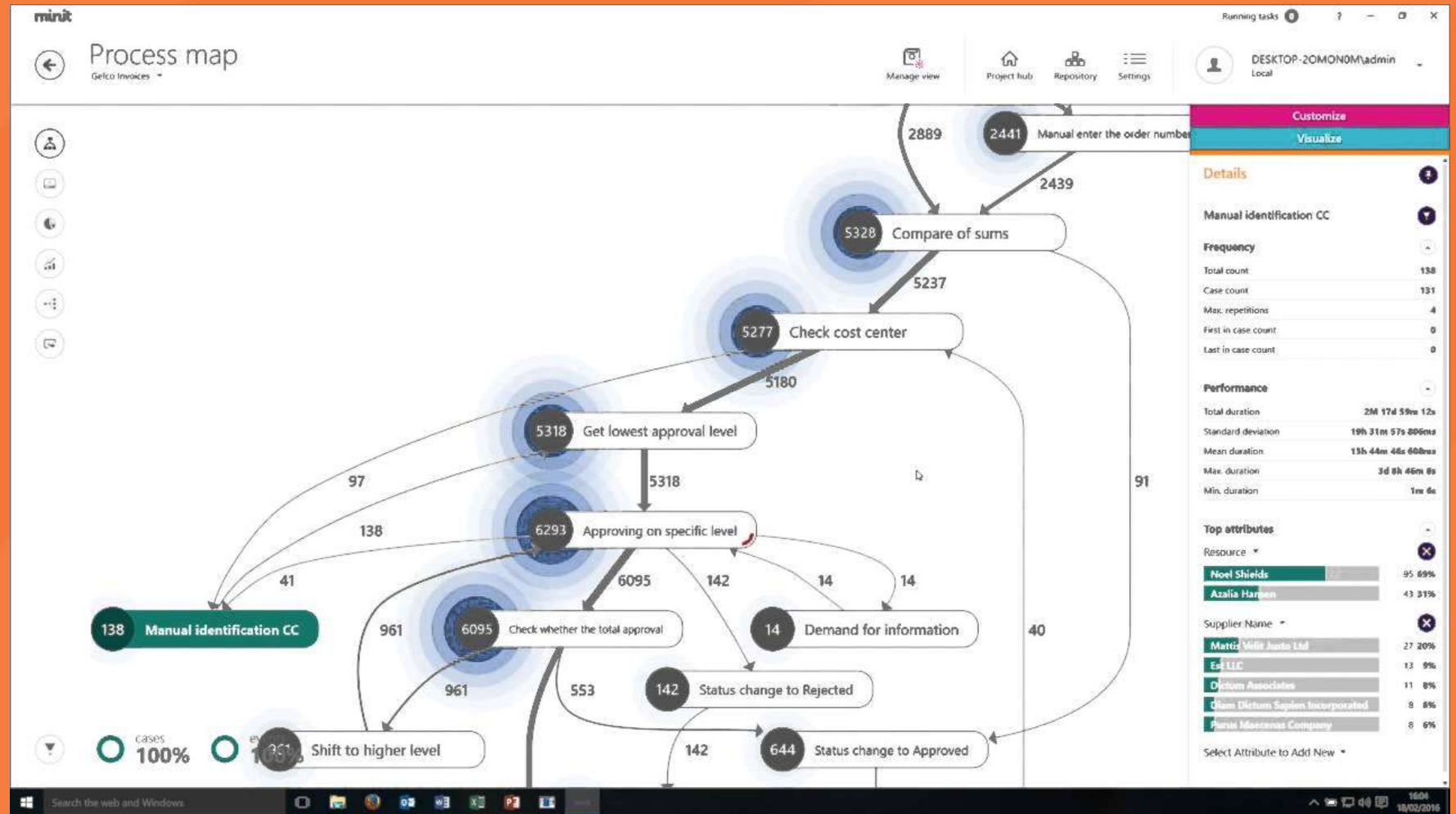




PROCESS MINING

GEBRUIK PROCESS MINING OM SLEUTELPROCESSEN TE CONTROLEREN

UITVOEREN VAN
CONTROLE ANALYSES

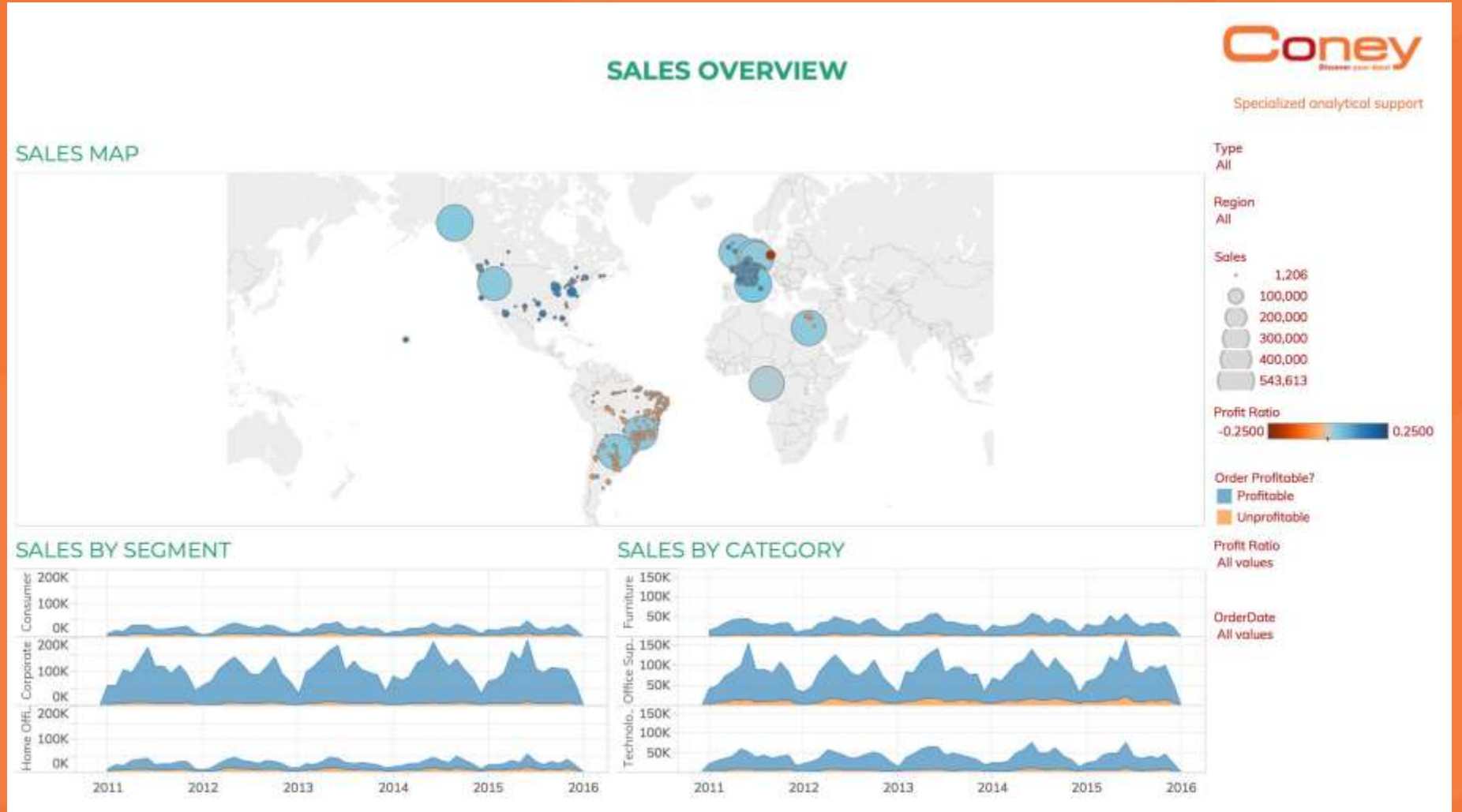


VERTEL HET VERHAAL

IN TABLEAU MET TOEGANG TOT HET CONEY TABLEAU PLATFORM



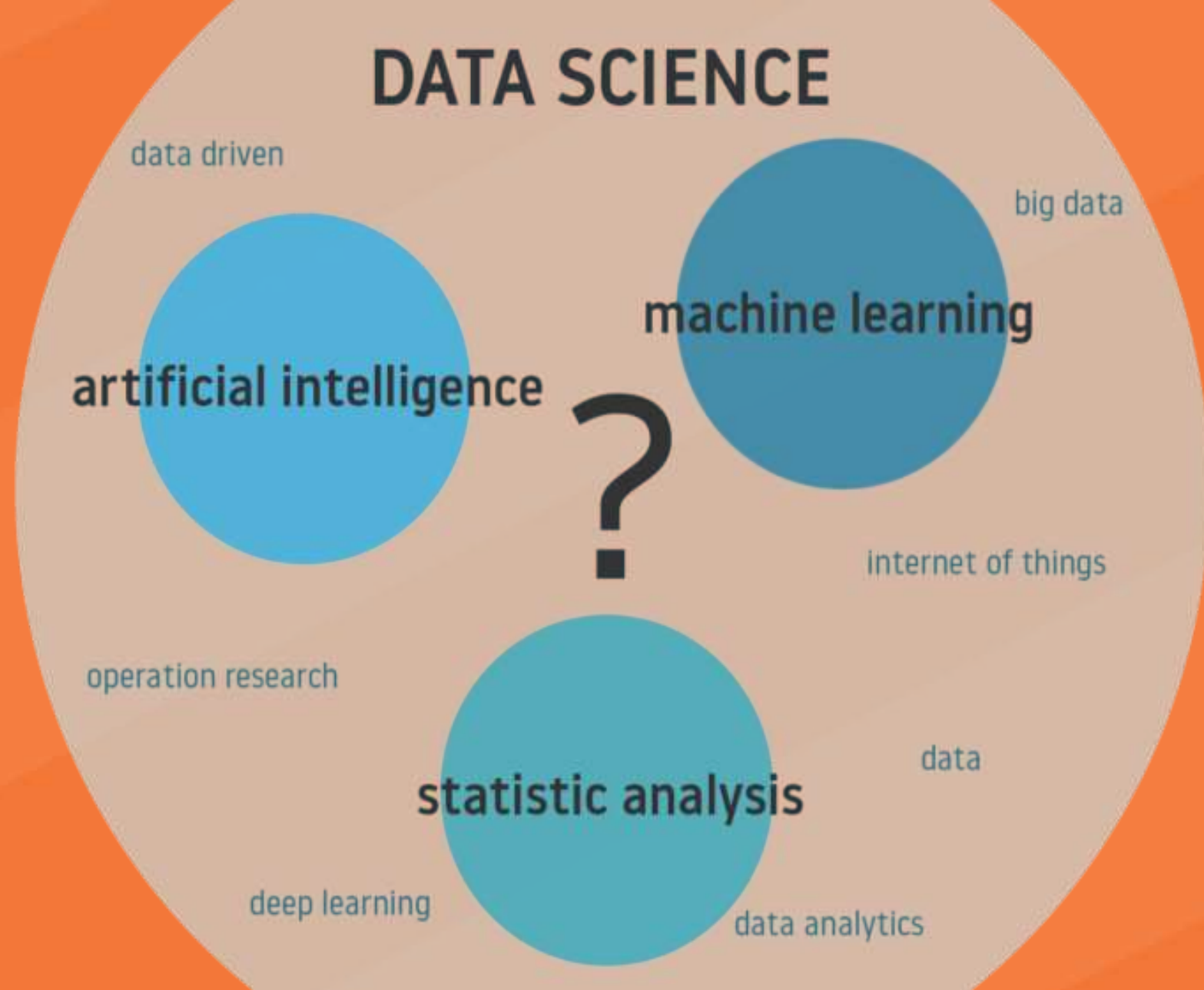
VERTEL HET
VERHAAL



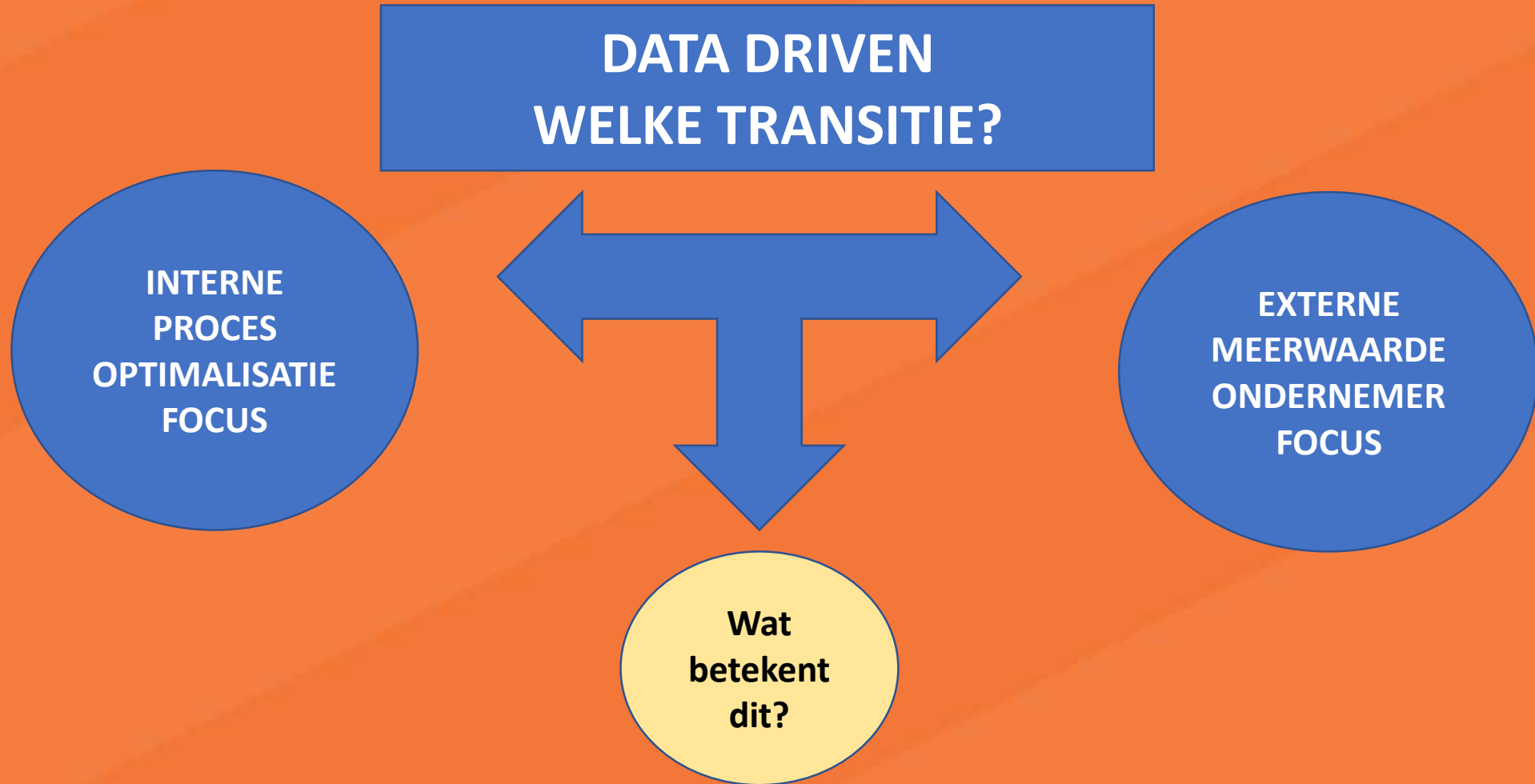
OK

DATA DRIVEN!

NIEUW FASE
BREEKT AAN!



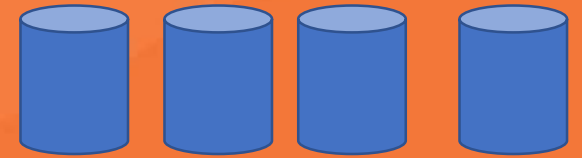
BREDERE ADVIES EN SAMENSTELPRAKTIJK ACCOUNTANCY DOMEIN



HAMVRAAG
WAT BETEKENT DATA
DRIVEN VOOR DE
ADVIES/SAMENSTELPRAKTIJK?



Business Analytics



NIET GELIJK

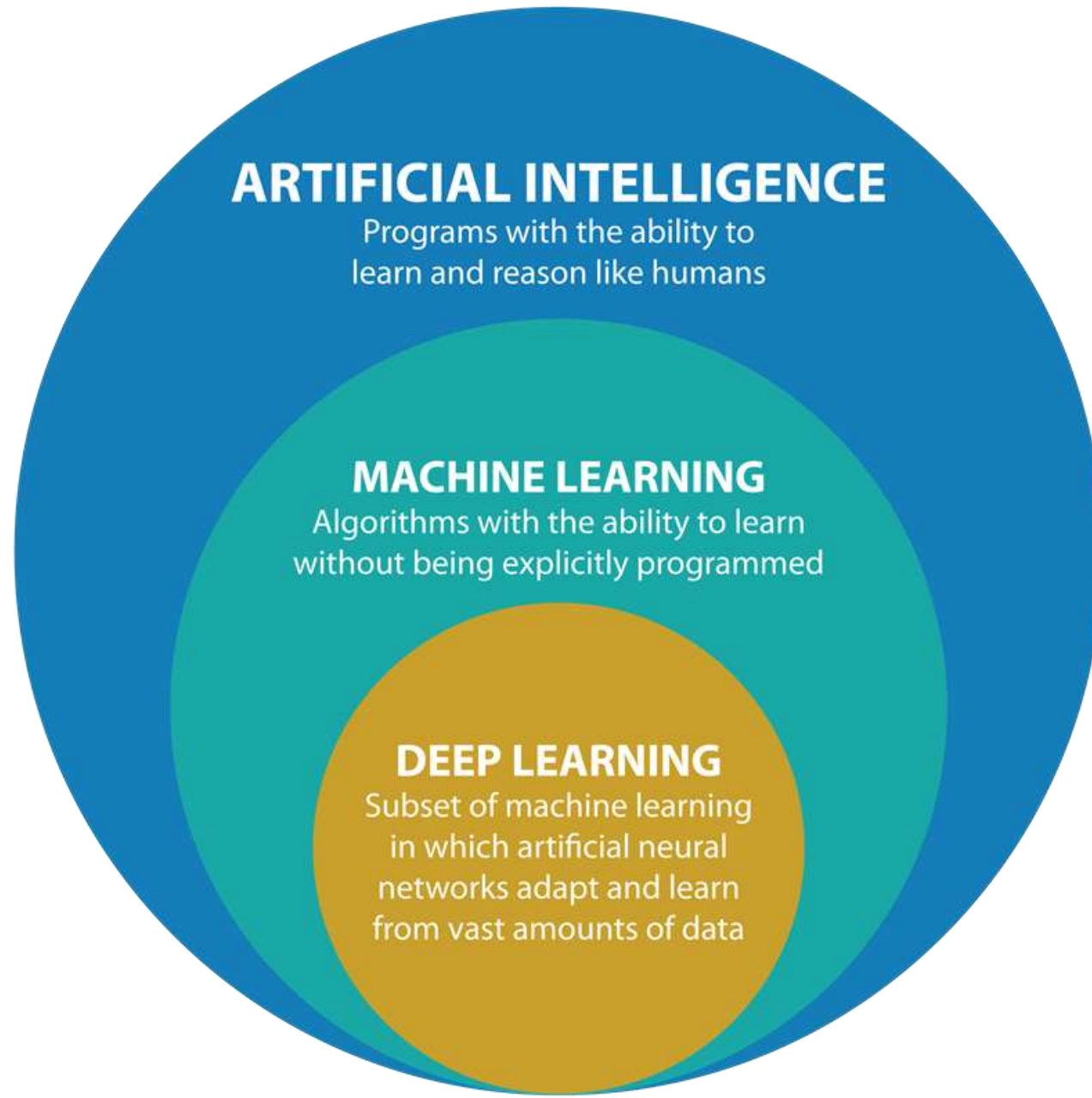
Financial Analytics



iAccountancy!

Samensmelting van Data Driven, Data Science, BI, Accounting, Storytelling en Visualisatie.

ARTIFICIAL INTELLIGENCE, MACHINE LEARNING, DEEP LEARNING



Futurism TYPES OF AI

FROM REACTIVE TO SELF-AWARE



With advances in computing power—including machine learning, neural networks, natural language processing, genetic algorithms and computational creativity, to name just a few—it increasingly seems likely that artificial intelligence is evolving from simple to self-aware machines. Here is a look at where AI is now, and the prospect of what it may become.

TYPE I PURELY REACTIVE

This is the most basic form of AI. It perceives its environment/situation directly and acts on what it sees. It doesn't have a concept of the wider world. It can't form memories or draw on past experiences to affect current decisions. It specializes only in one area.



Examples:

- IBM's Deep Blue which beat Kasparov at chess
- Google's AlphaGo which triumphed over human Go champions

TYPE II LIMITED MEMORY

Further up on the AI evolutionary ladder: this type considers pieces of past information and adds them to its preprogrammed representations of the world. It has just enough memory or experience to make proper decisions and execute appropriate actions.

Examples:

- Self-driving vehicles
- Chatbots, personal digital assistants

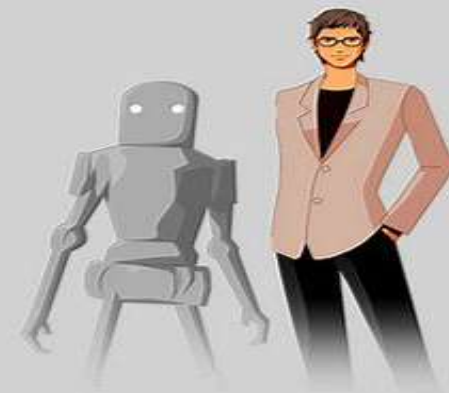


TYPE III THEORY OF MIND

Type III AI has the capacity to understand thoughts and emotions which affect human behavior. This type—which can comprehend feelings, motives, intentions, and expectations, and can interact socially—has yet to be built, but would likely be the next class of intelligent machines.

Examples:

- C-3PO and R2-D2 from the Star Wars universe
- Sonny in the 2004 film *I, Robot*



TYPE IV SELF-AWARE

These types of AI can form representations about themselves. An extension of the theory of mind, they are aware of their internal states, can predict the feelings of others, and can make abstractions and inferences. They are the future generation of machines: super intelligent, sentient, and conscious.

Examples:

- Eva in the 2015 movie *Ex Machina*
- Synths in the 2015 TV series *Humans*



Futurism

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Editorial: Jan Añover
Design: Red Van Cliff Estocada

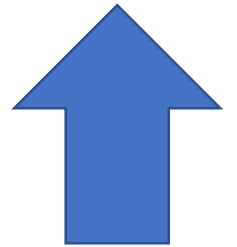
SOURCES

The Conversation
Wikipedia
Alternative Mindsets
Techwalla
Wait But Why



Types of Machine Learning

MINDBRIDGE.AI



Machine Learning

Supervised

Unsupervised

Reinforcement

Task Driven
(Predict next value)



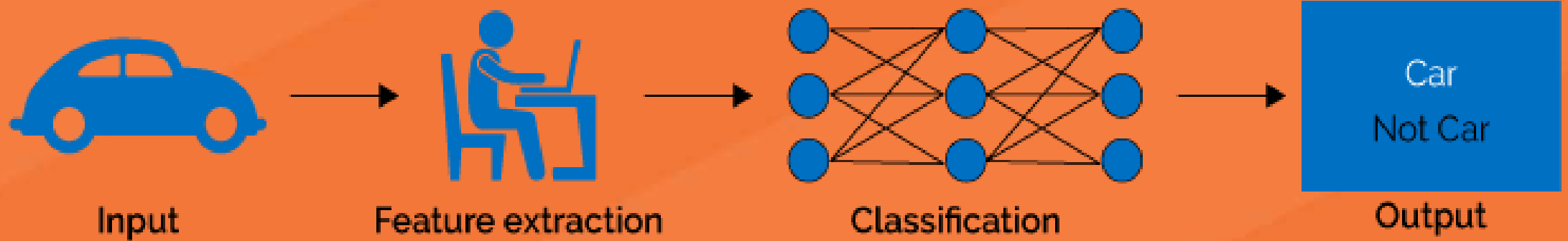
Data Driven
(Identify Clusters)



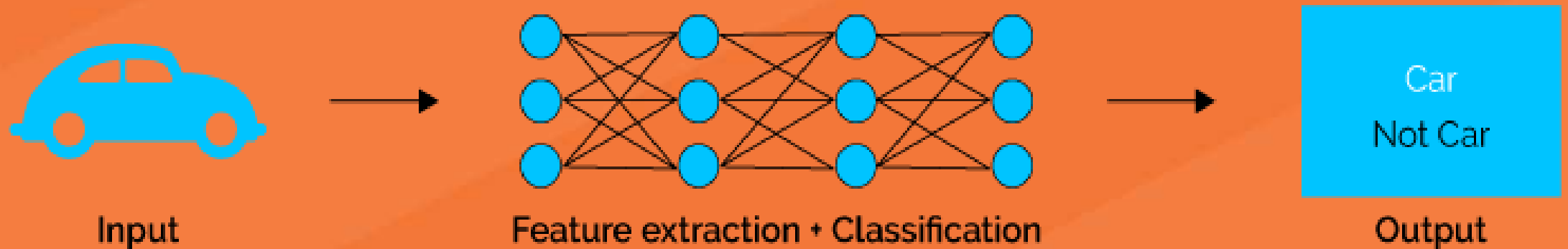
Learn from
Mistakes



Machine Learning



Deep Learning



NETFLIX
ALGORITHMES
UNSUPERVISED
MACHINE LEARNING





AI
TYPE II
LIMITED MEMORY

SCHIPHOL GATE SPENCER
ROBOT
AI TYPE III?



HAMVRAAG!

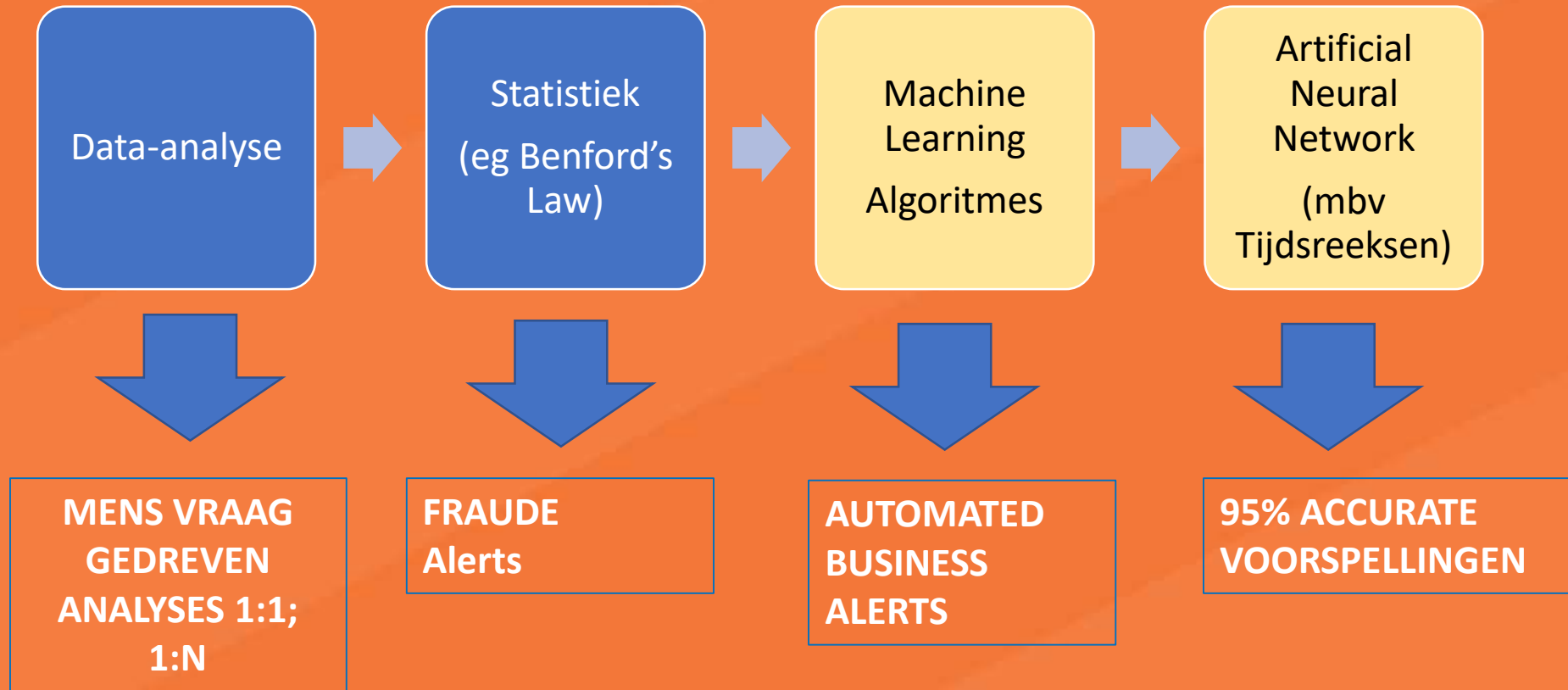
WAAROM EN

WAT

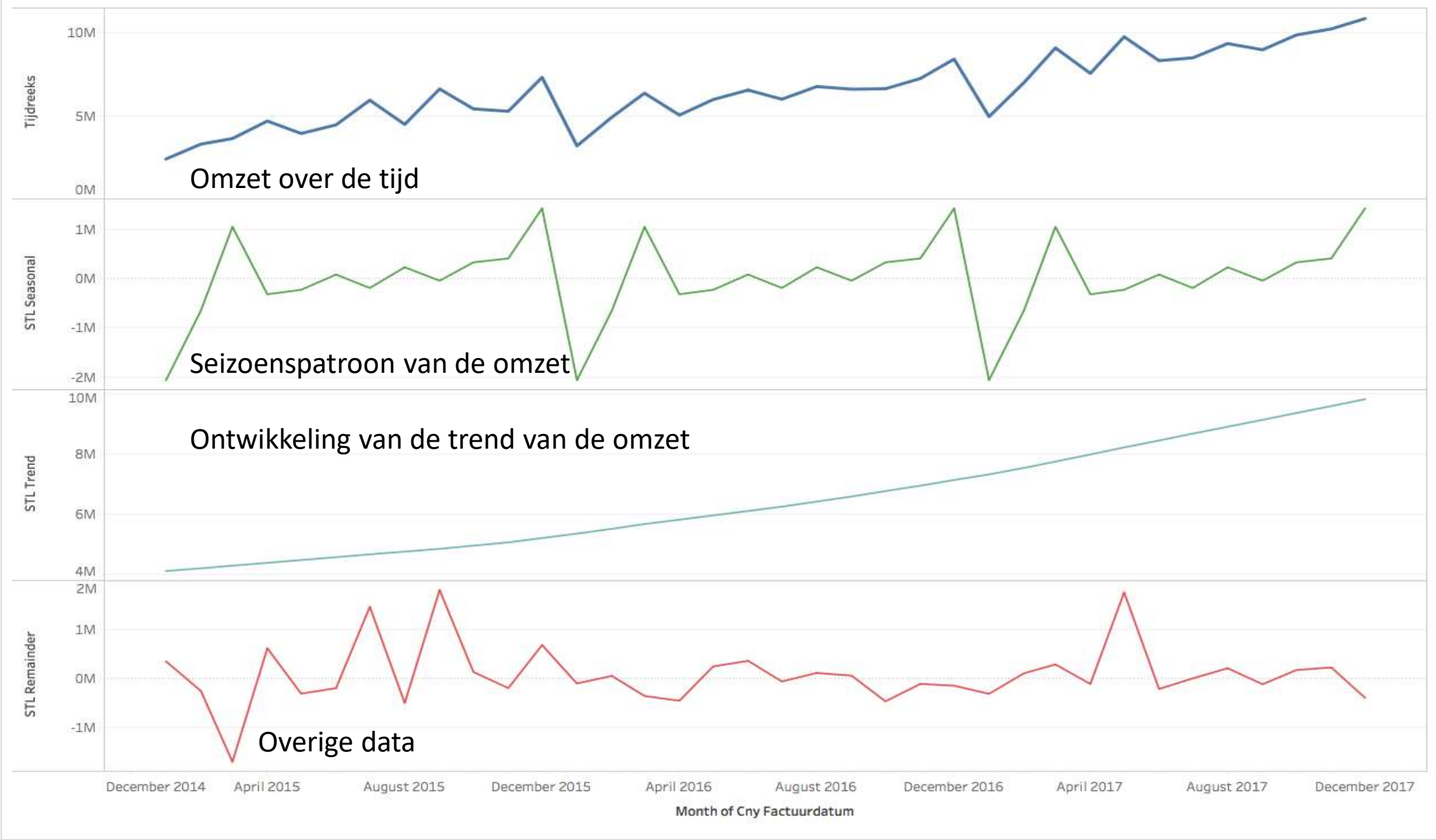
WAT? > INZICHT!

- **OMZET en MARGE versus KLANTEN; LEVERANCIERS; MEDEWERKERS; vanuit het NU en VOORUIT**
- **OMZET versus MARGES en RETOUREN / KLACHTEN; naar PRODUCTEN**
- **OMZET versus BEDRIJFSPROCESSEN – DOORLOOPTIJDEN OFFERTES, LEVERINGEN, BETALINGSTERMIJNEN**
- **KOSTEN ANALYSES versus MARGE en KLANTEN – inzicht in verdienpotentieel**
- **VOORRADEN; omloopsnelheden versus marges; naar leverancier/afnemer**
- **KASSTROMEN – in het NU en zes maanden VOORUIT; twaalf maanden vooruit**
- **MANAGEMENT RAPPORTAGES**
 - **STUURINFORMATIE – VALIDATIE VAN SYSTEMEN**
 - **STAKEHOLDERS**
- **MARKETING bestedingen versus SOCIAL MEDIA exposure versus OMZETMUTATIES**

Voorbeeld 1 : BUSINESS FORECASTING; OMZET EN KOSTEN



Tijdreeks Decompositie



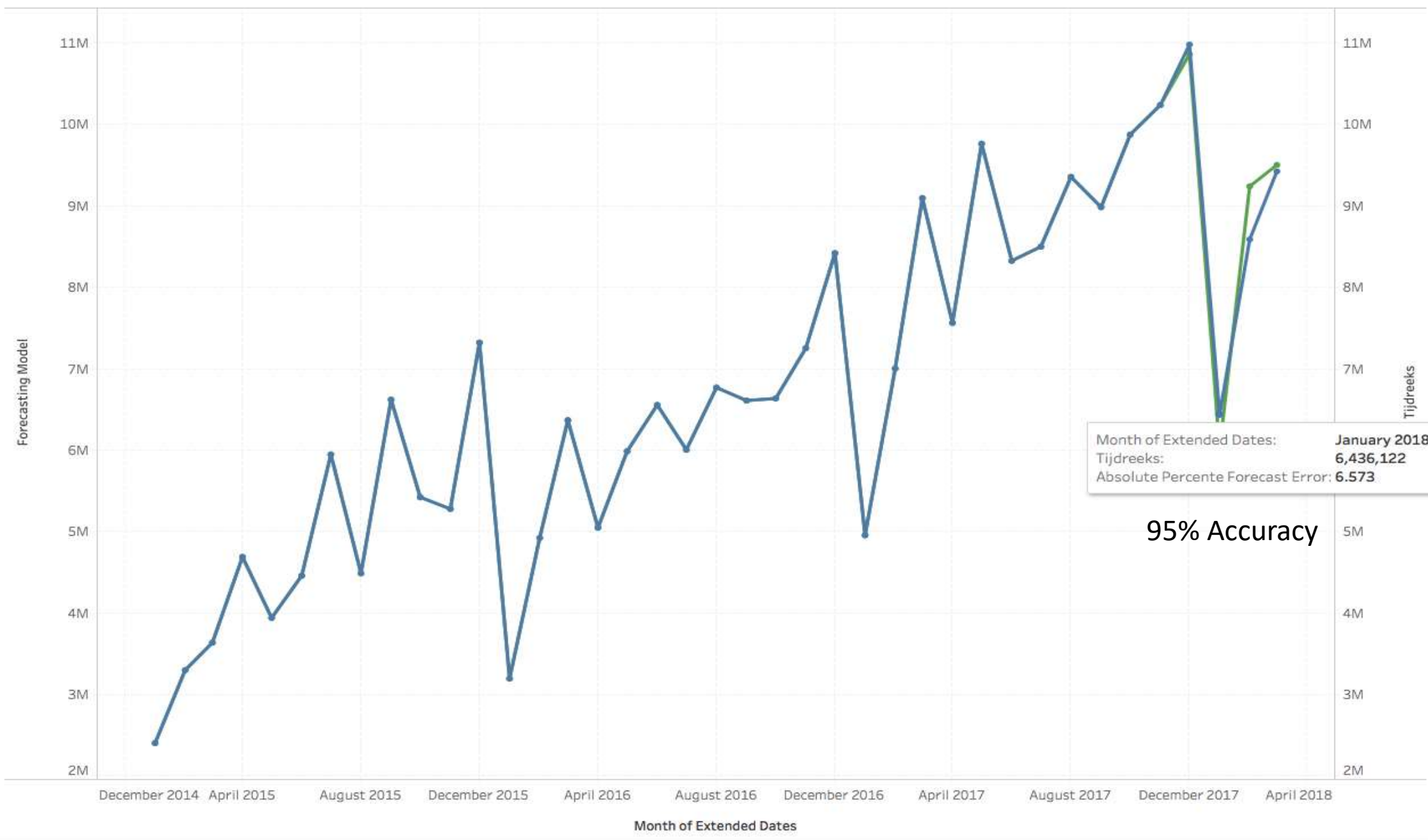
Forecast Validation

Measure Names
Forecasting Model
Tijdreeks

Tijdreeksen
Factuurbedrag

Learning Method
AI

Periods to Forecast
3



Month of Extended Dates: **January 2018**
Tijdreeks: **6,436,122**
Absolute Percente Forecast Error: **6.573**

95% Accuracy

**VIER
TECHNIEKEN
WELKE CLIENT
GESPREKKEN?**

2040

31 oktober 2040

LANCERING VAN
CONEY

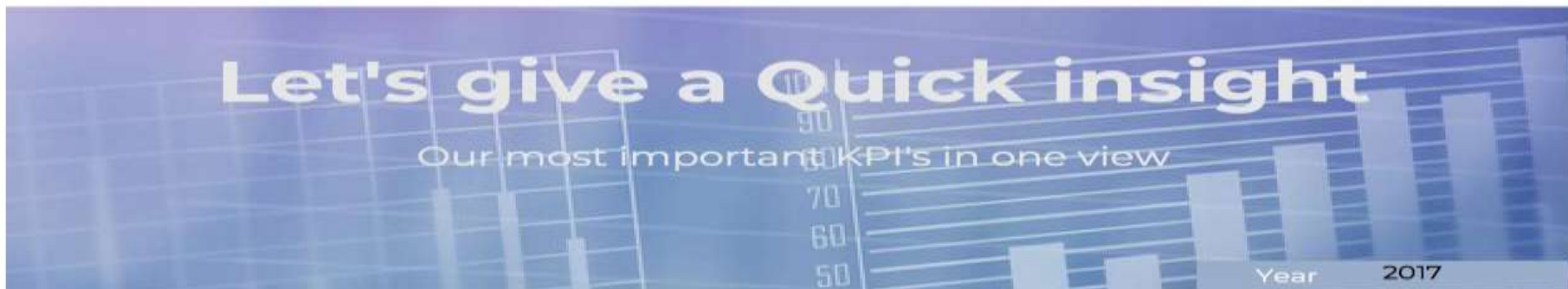
MIND TO MIND ACCOUNTANCY
TECHNOLOGY PLATFORM



MIND TO MIND
ACCOUNTANCY

HOE WERKT HET?

- Same Time Upload van Dashboards – Trigger Connection MIND-TO-MIND
- Accountant en Client zijn via een DANN – Deep Artificial Neural Network aan elkaar verbonden
- Accountant ‘zend’ via DANN zijn toelichting op cijfers en ‘leest’ de vragen van de ondernemer
- Accountant ‘bedenkt’ de antwoorden SAME TIME en client ‘toetst’ toereikendheid van vragen
- Bij score van van ‘toereikendheid’ op basis van vooraf ingestelde emotielevels ‘tevredenheit’ wordt de DANN verbinding verbroken



In 2017

we served
706
Unique
Customers

they placed
1.538
Orders

this means
2,18
Orders per
customer

we sold for
€1.042.204

Sales map



Sales volume per country



<http://indiaeducationdiary.in/brain-to-brain-interface-allows-transmission-of-tactile-and-motor-information-between-rats/>

PRAATPLAAT

GO DATA DRIVEN IN ACCOUNTANCY

MINDSET

TEAM

KLANTEN
(oud en nieuw)

VERDIENMODEL

VISIE

DATA DRIVEN
OPLOSSINGEN
BOUWEN

Investerings
(mensen & techniek)

REALISTISCH

MAAK EEN PLAN

DOEN