Controlling in Small Medium Enterprises

between DATA DRIVEN DECISION MAKING and Improvisation

MARIUSZ RZEŹNIKIEWICZ – CONTROLLING – INSIGHTS FOR A BETTER FUTURE

MR-Con.com
Management
Reorganisation
Controlling

- External Controller / Certified Restructuring & Reorganisation Consultant

independent controller, assisting **small and medium-sized enterprises** especially in Germany in the area of **controlling and business model redesign** for last 15 years.

Business Analytics

Business Planung

Management Reporting

Clients:

- Companies that need to check the plausibility of their database and therefore need a competent partner for planning, setting up and supporting monthly reporting.
- Companies that already use ERP or BI tools and are looking for a reliable partner in matters of controlling, business process optimisation and transparency.

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Agenda

1. Improvisation – Why?
2. Controlling in SME
3. Digital Transformation – changes
4. Use Case – Example of ML-Model
5. Recommendations

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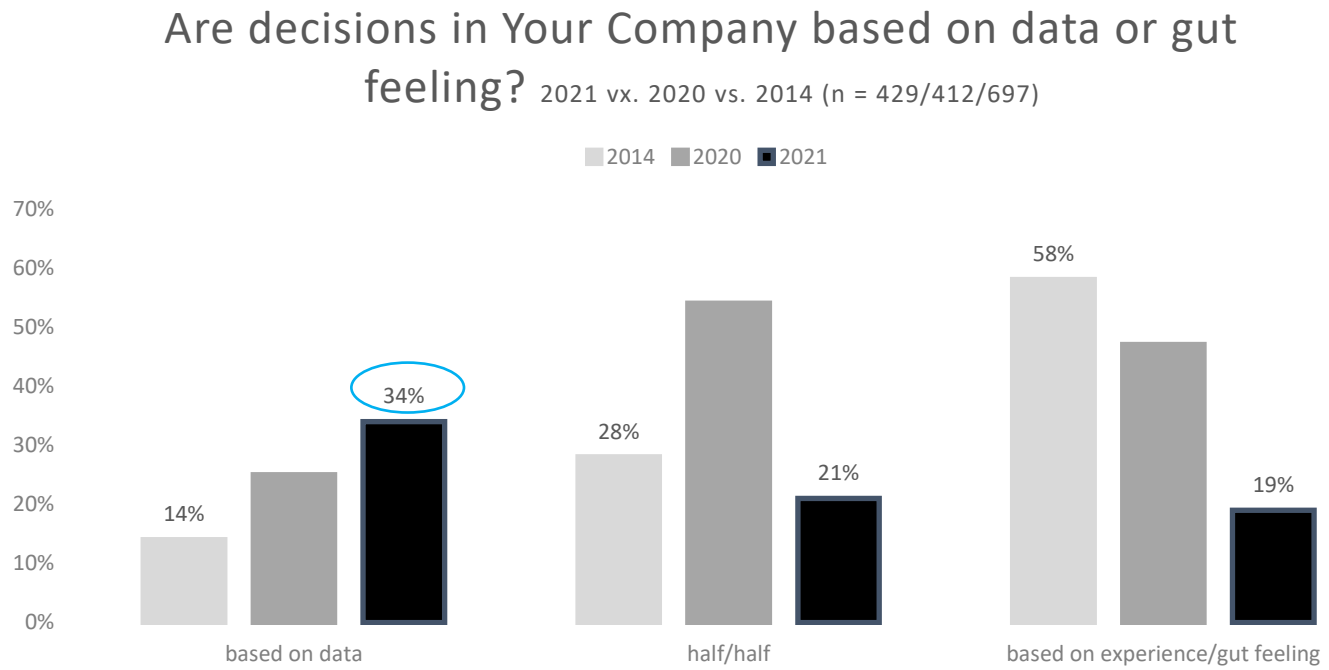
Data-driven decision making has a long tradition

e.g. Thales von Milet (624-548 b. Chr.) - olive harvest forecast based on stellar observation

Where are we today?

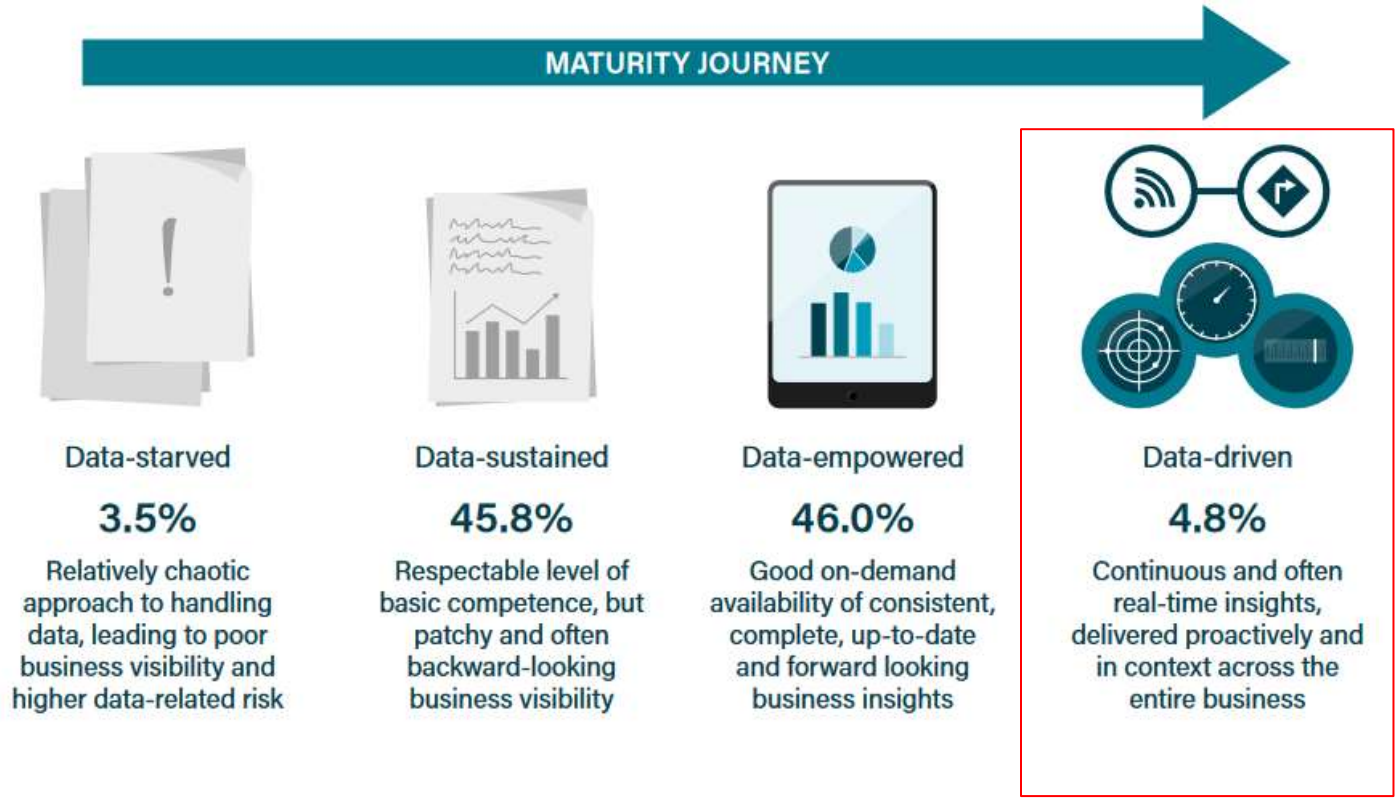
- Very fast changing environment -> you must be fast…agil
- full of data…and information flood
- Limited ressources

Are decisions in your company based on data or gut feeling?



Source: BARC Data Culture Servey 22 – How to shape the culture of a data-driven organizatiuon

Where are Your company on your data maturity journey?



Source: Study of Fujitsu and Freeform Dynamics, 2020

Improvisation is needed!

-to be able to solve problems despite a lack of planning capacity

-achieve an economic level of detail in problem solving;-react to ex-post surprises

-create the basis for the acquisition or development of knowledge relevant to planning.

Improvisational Responses – in SME

ADAPTING TO MARKET CHANGES

PROBLEM-SOLVING

CUSTOMER SERVICE

INNOVATION

CRISIS MANAGEMENT

EMPLOYEE COLLABORATION

COMMUNICATION

RESSOURCE MANAGEMENT

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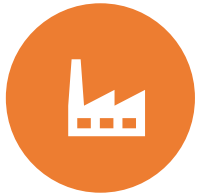
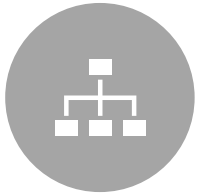
SME and Controlling



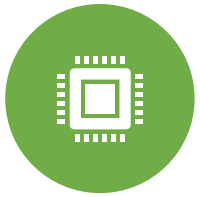
Small-medium enterprises – till about 500 employess / very offen familly based company



Organisation is developing with the growth of the company – at the beginning very agil / based on serveral people / later very offen departements / silo-thinking

One / or very small team of controllers – responsible for the whole company

The succes of the company comes from good products / services – and the team of engaged people



As a controller You need to work peer2peer with Your collegs / have to look beyond the plate

Small is beautiful ☺

Data in SME – Challenge **DAILY** Business!

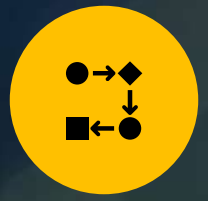
ERP-Software very often not in the actuall release (sometimes MS DOS based) – implemented not to the end

A lot of isolated applications

Limited Knowledge of the usage of the software

XLS as a only tool for data analysis – uneffectivenes in Preparing Reports

a lot of possibilities to find new data (sensors etc.)– but not realy time – because of daily business



Process not always optimal – we did it always this way…

A lot of data rich and information poor companies!!!

What is important for the managers of SME

Fast information

Knowledge about the calculation of products /services

Simple intergrated planning – with main KPI‘s.

Simulation of scenarions

Pricing monitoring

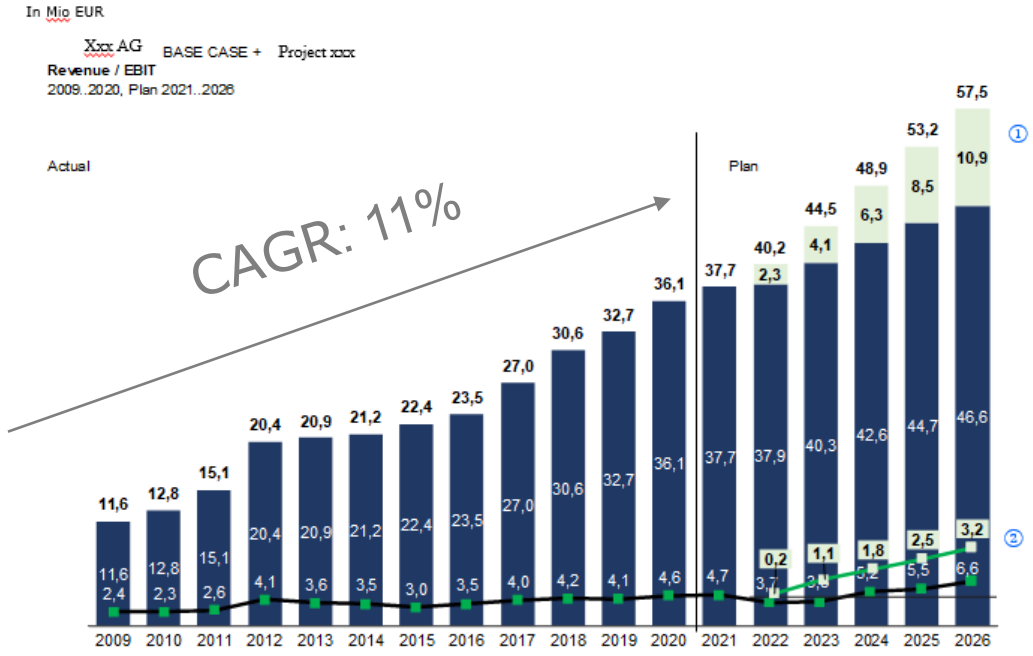
transparency

MANAGERS / OWNERS ARE OPEN FOR NEW INSIGHTS – BUT THEY DON‘T WANT DO DEAL WITH COMPLICATED MODELS

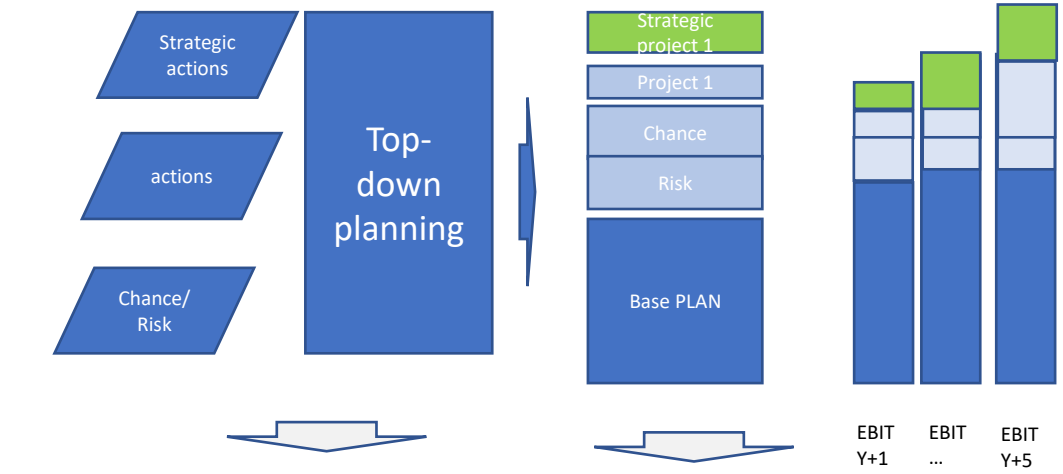
Beginn with a Planning MODEL

exp

PROJECT X… BRINGS 32 MIO ① ADDITIONAL REVENUE AND ② 8,9 MIO PROFIT IN THE PERIOD 2022-2026



Strategic Actions, Chance & Risk
should be showed in the planning separaterly

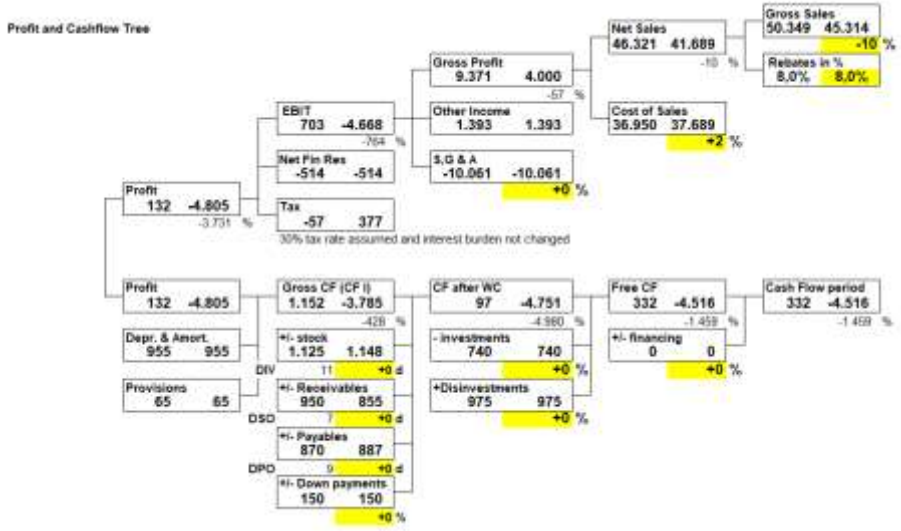


- Linking strategic and operational planning through separately considered strategic actions/chance/risk

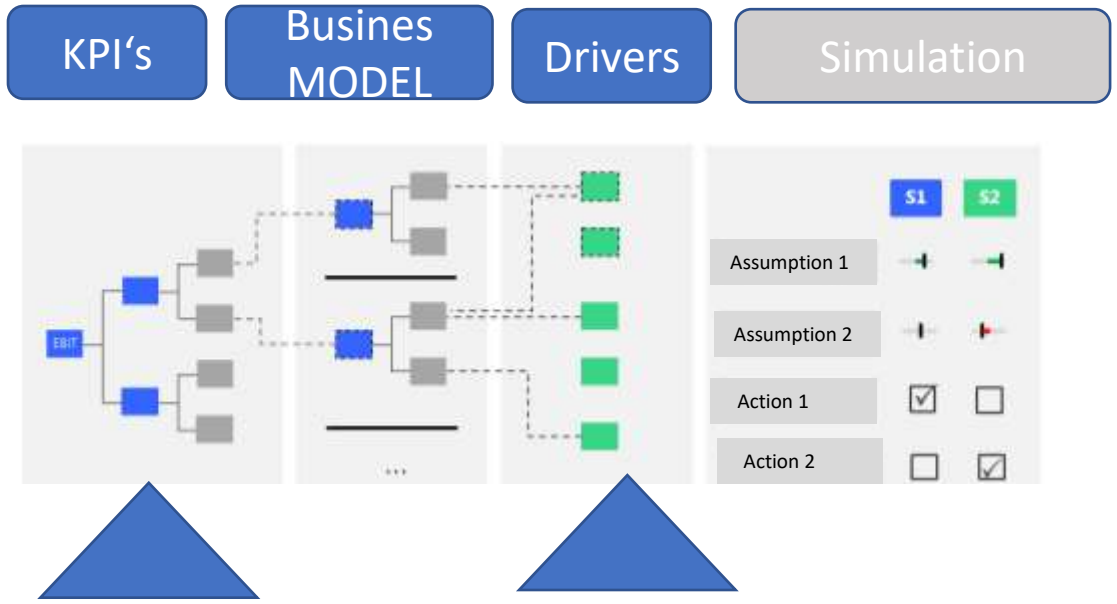
- TOTAL Plan including based plan / actions, Chance /Risk
- Differentiated Analysis and discussion

Build the Business Model and Simulation

SIMULATION winns with FORECAST – QUICK Decissions possible



Based on CA

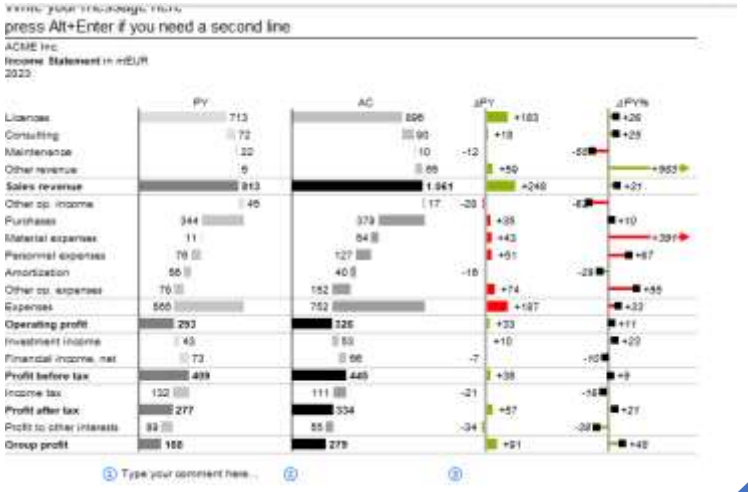


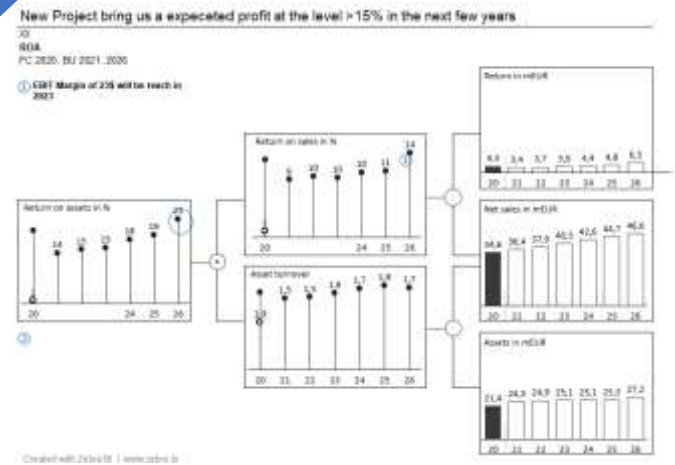
Reporting of P&L and KPI‘s

Planning of drivers

Simplification of Reporting

- Use IBCS Standards and simplify
- Ad hoc information in XLS or BI TOOL
- DATA Storytelling





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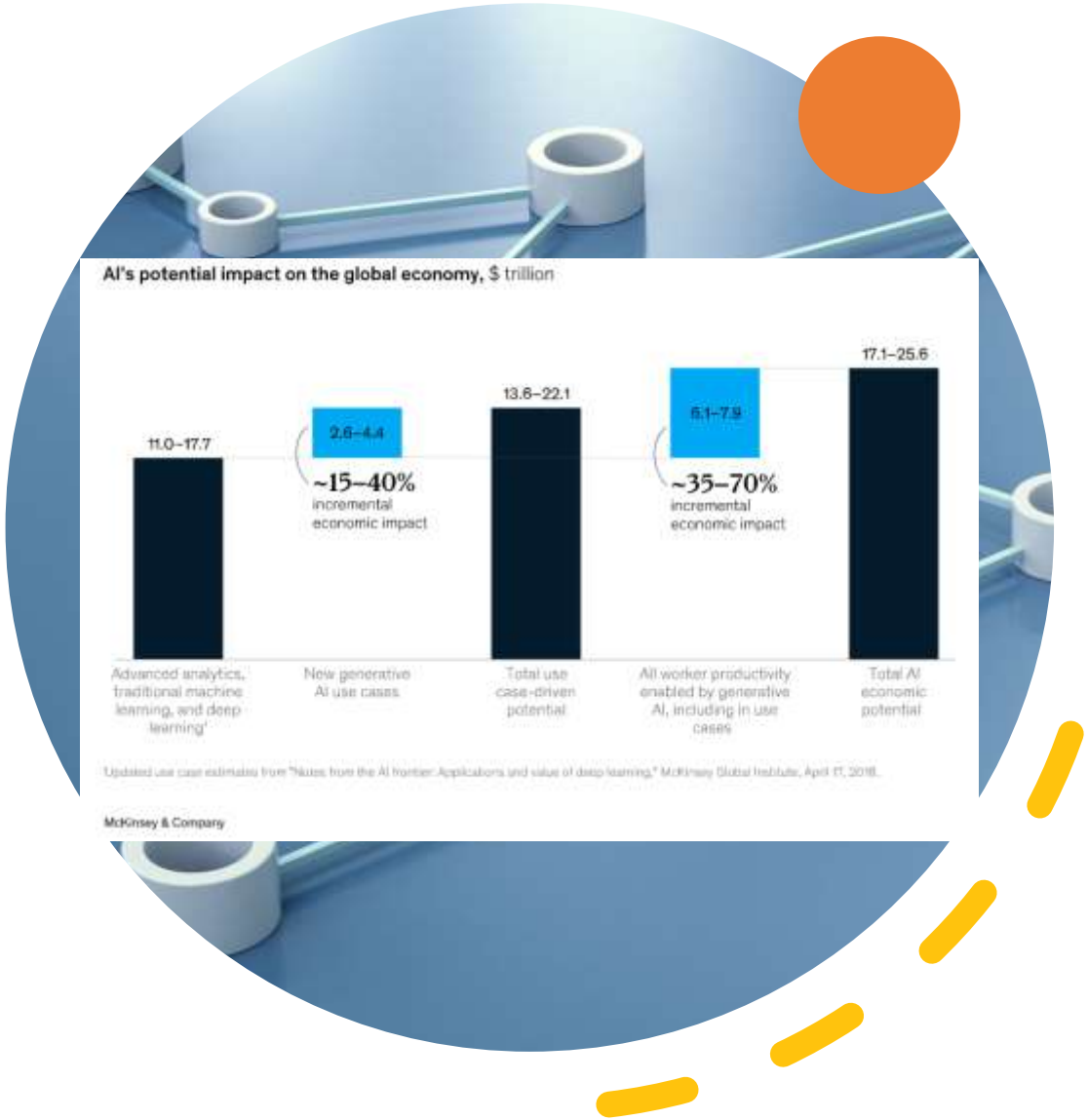
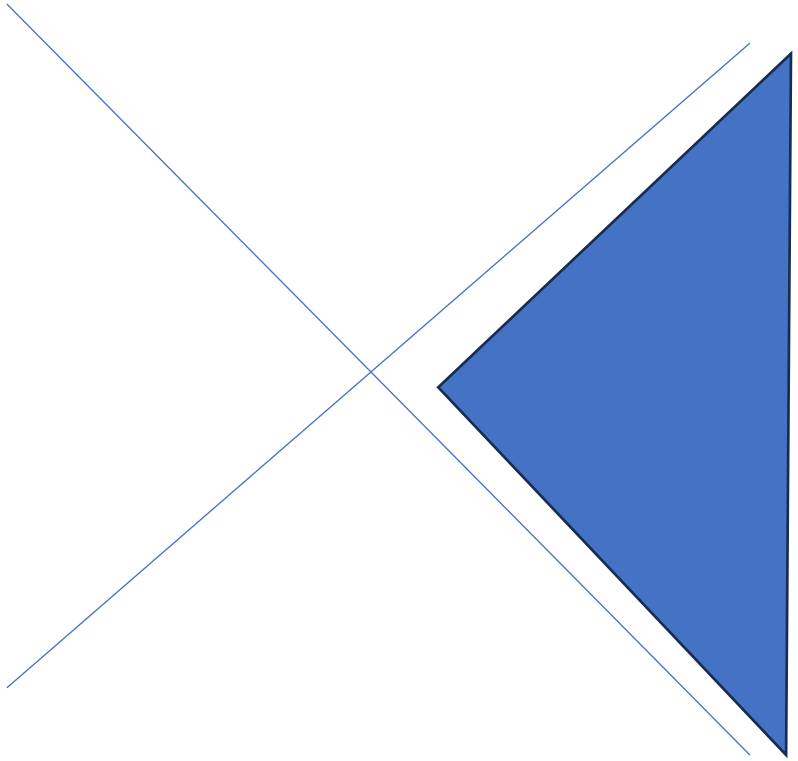
Information is a strategic Ressource

„The ability to capture, link, analyze and use data to improve Business Processes and Models is key to competitiveness.

Key Drivers are technological Innovations to generate, link and analyze new data.“



Digital Transformation – a big opportunity – also for SME



Performance

Data transfer Rates
Computing Speed
Number of connectec Devices

Opportunity

Doing things differently than in the past…

Information as a strategic ressource

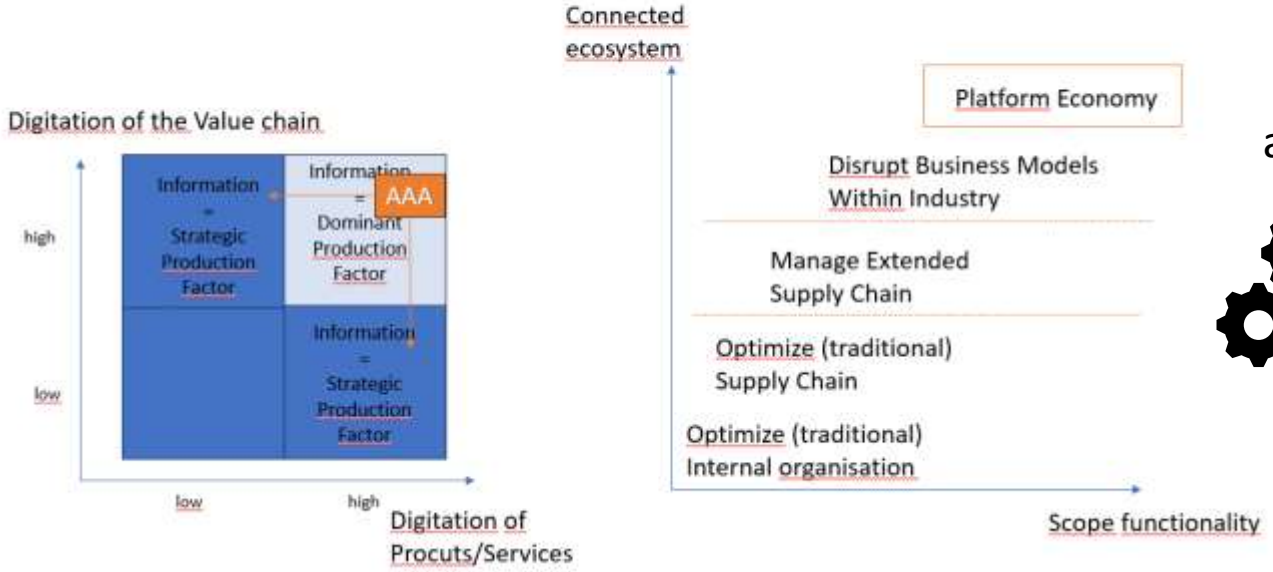
Price

Sensors
File Transfer
Data Storage

Source: Business Innovation Lab

Digital Transformation
changes in business models – changes in analytics

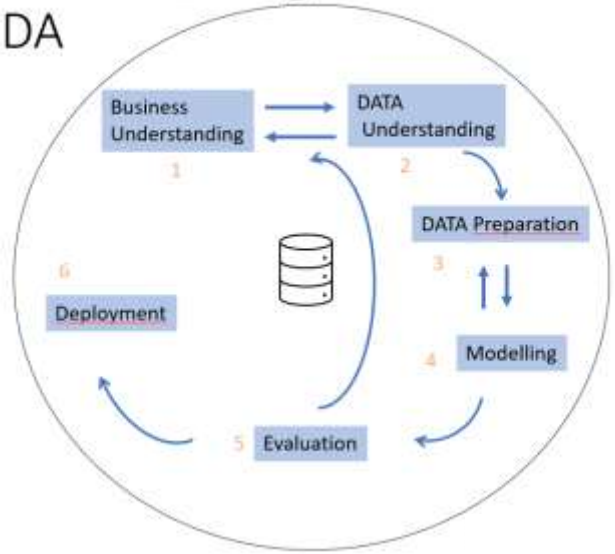
Changes in Business Model / Value Chain



agil

Digital Transformation – Changes in Data Analytics - AGENDA

- New Data
- New Methods
- New Technologies



Economical potentials

New business	**Monetise**	**Disrupt**
existing business	Optimise	Leverage
	existing data	New data

Source: Andreas Seufert – Data Driven Decision Making

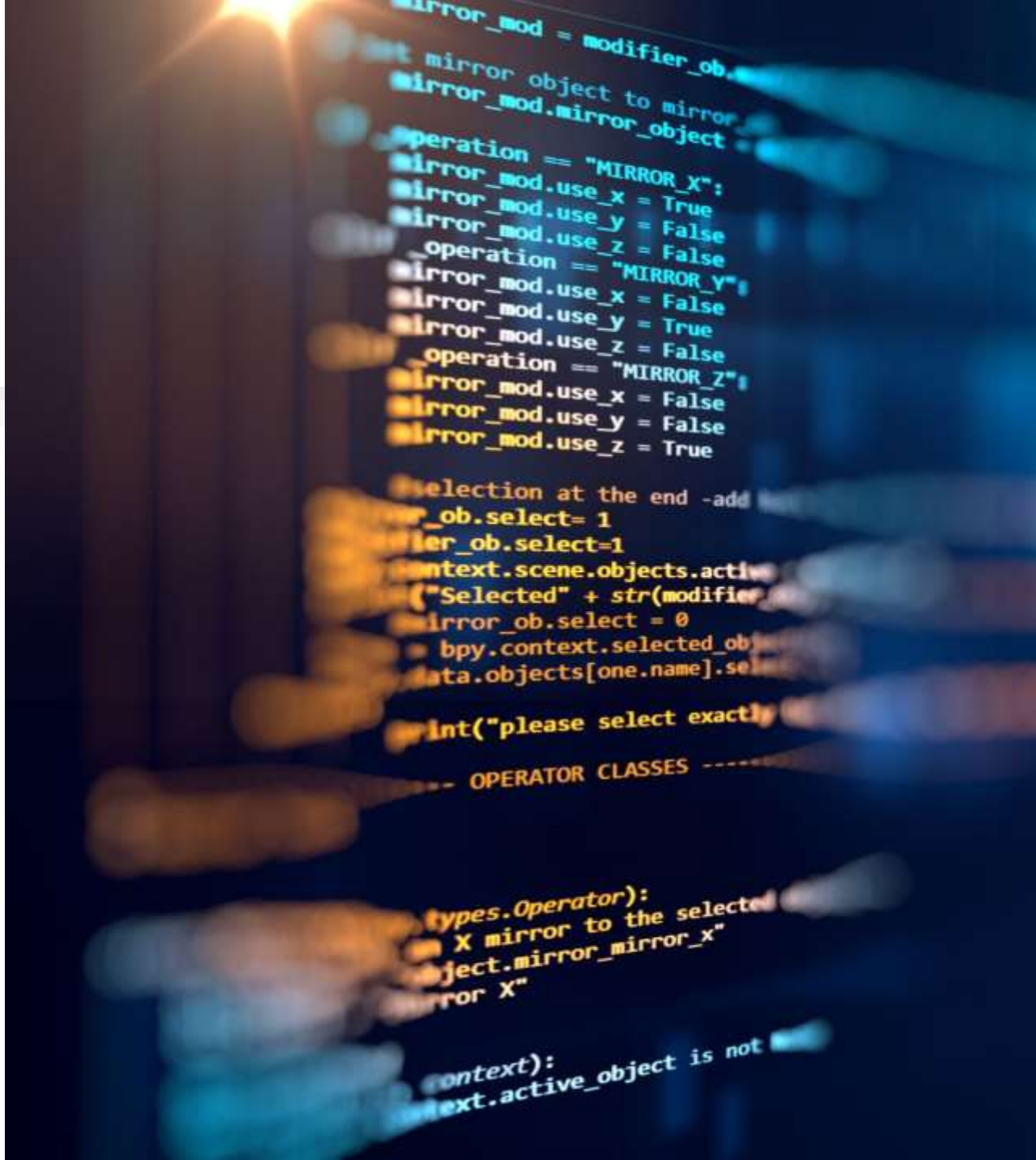
ML / AI - what is it about? Is it something for controllers to?

Problem – undestanding of business by IT people…

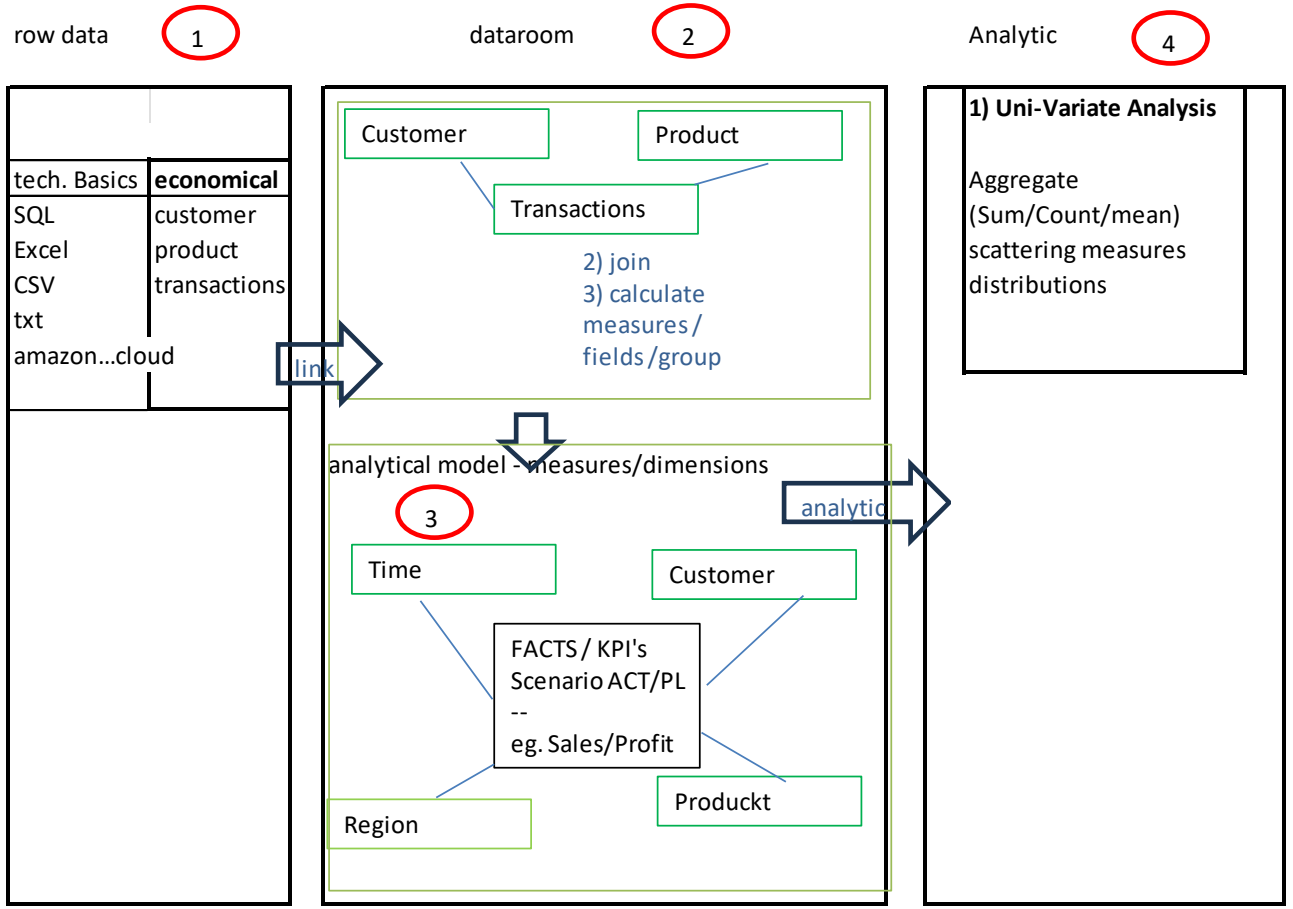
What is needed?

- Basic statistic knowledge
- Understanding of data / data types / models
- Low code – now code tools

GENERATE – ACTIONABLE INSTIGHTS from DATA!



Information from DATA – using of BI / ML/AI



Source: Andreas Seufert – Data Driven Decision Making

ML / AI – basics - statistic

- Correlation - Connection with the data
- MULTIPLE CORRELATION
- REGRESSION
- Outlier detection

Statistical basics….

Classification Error Measures

		Actual	
		True	False
Predicted	True	**True** positive	**False** positive
	False	**False** negative	**True** negative

		Actual		
		True	False	Total
Predicted	True	**200**	**10**	210
	False	**10**	90	100
	Total	**210**	**100**	**310**

Accuracy **(TP + TN)/(TP + TN + FP + FN)** **93,55%**
(correctly predicted class / total testing class) * 100

Precision **TP/ (TP+FP)** **95,24%**

Sensitivity	**Specificity**
True-Positive Rate	*True-Negative Rate*
TP/ (TP+FN)	**TN/ (TN+FP)**
95,24%	**90,00%**
True , predicted correctly	False, predicted correctly

For good classifiers, TPR and TNR both should be nearer to 100%.
Similar is the case with precision and accuracy parameters.
On the contrary, FPR and FNR both should be as close to 0% as possible.

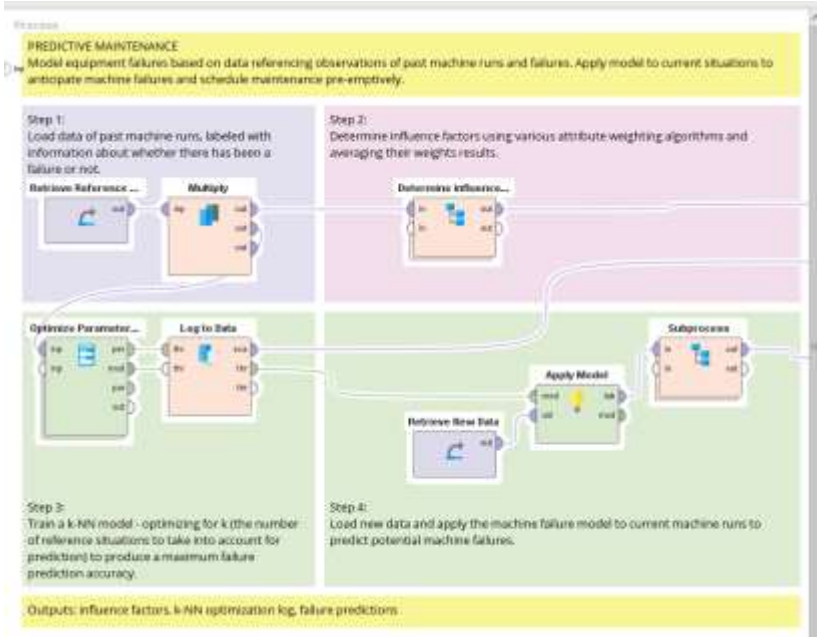
Gain insights from Your data…Develop Skills for Explainable Self Service AI/ML

Business Intelligence

Overcome the limitations of BI…
(aggregate data, numbers only, predefined structure)

ML / AI

Predictions, root cause analytics, simulations, Prescriptive analytics
(detailed data, numbers/text, unstructured)



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Use cases

- Forecasting
- Clustering
- Customer satisfaction
- Predictive maintenance
- calculation

Data Analytics - AGENDA

New Data

Txt / Cloud /social media etc.

New Methods

Data Preparation – Power Query

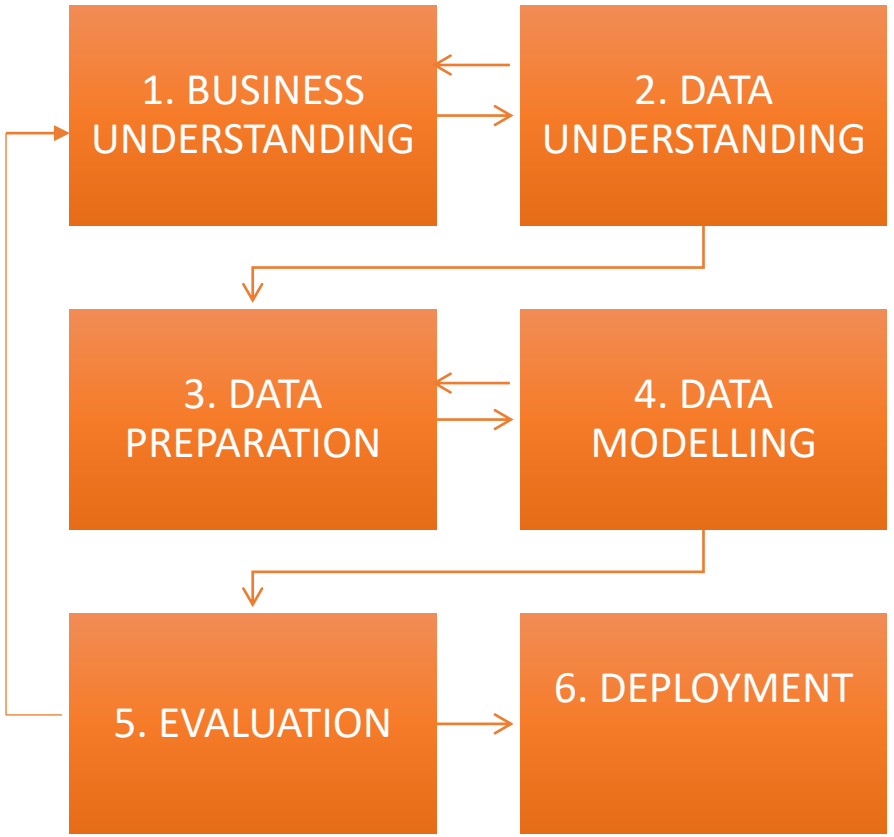
BI / Self-Service BI – Qlik/Tableu / Power BI

ML/AI Tools

Low code – no code

New Technologies

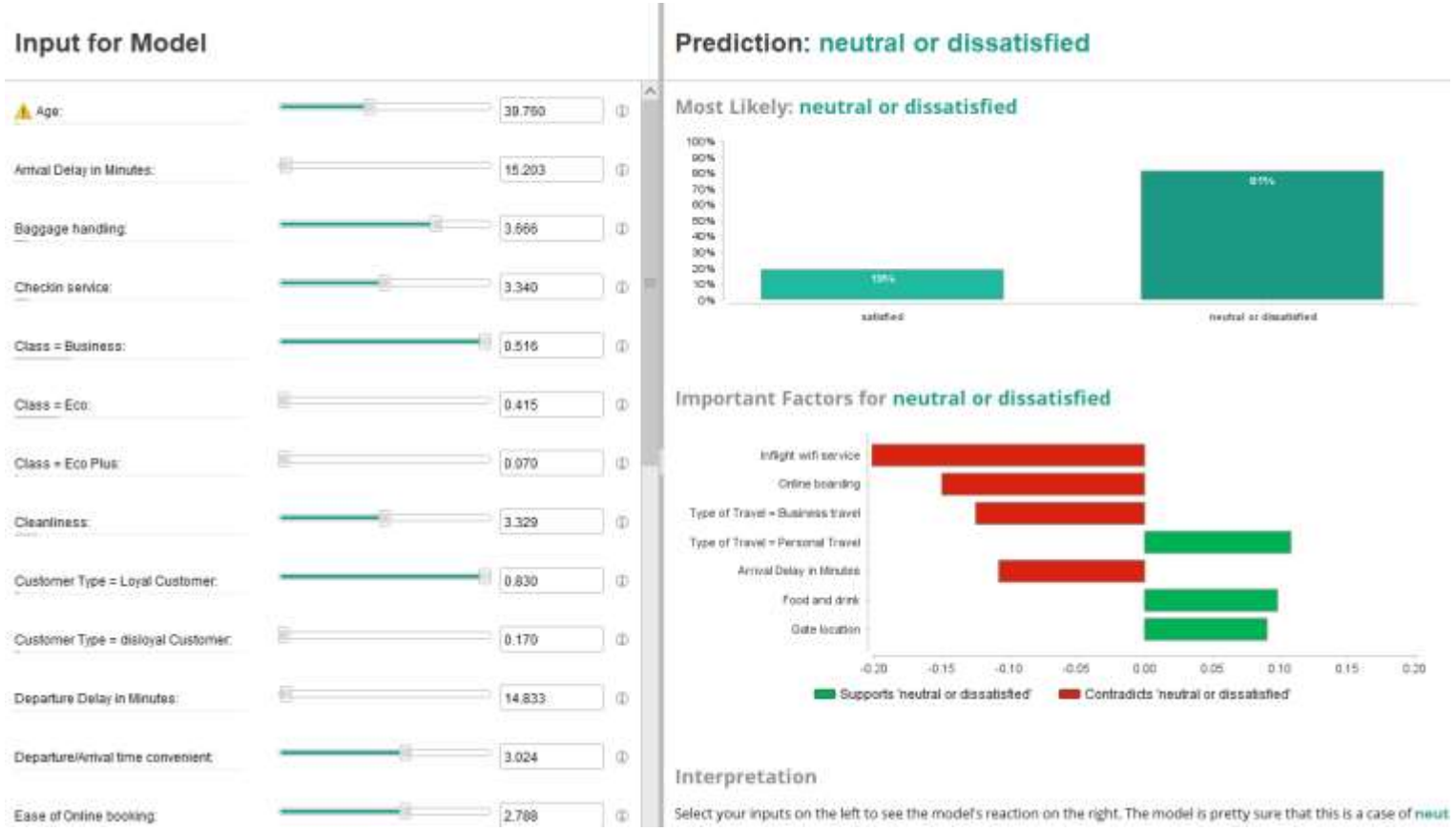
Chat GPT / others



Use Case – Customer Satisfacion - ML

Deep DIVE: Example of Low code – no code model

id	Gender	Customer Ty	Age	Type of Trav	Class	Flight Distan	Inflight wifi	Departure/A	Ease of Onli	Gate locatio	Food and dri	Online boar	Seat comfort	Inflight ente	On-board se	Leg room ser	Baggage han	Checkin serv	Inflight servi	Cleanliness	Departure De	Arrival Dela	satisfaction
59076	Male	Loyal Custon	9	Business tra	Eco	1174	2	4	2	4	2	2	1	2	1	5	5	4	3	2	0	4.0	neutral or dissatisfied
22494	Female	Loyal Custon	17	Personal Tra	Eco	208	3	1	3	3	5	3	5	5	2	5	3	3	4	5	0	0.0	neutral or dissatisfied
43510	Female	Loyal Custon	43	Personal Tra	Eco	752	3	5	3	5	5	4	5	3	3	3	5	3	3	4	52	29.0	neutral or dissatisfied
58779	Male	disloyal Cus	57	Business tra	Business	1182	5	3	3	4	1	3	1	1	4	1	5	1	4	1	9	0.0	neutral or dissatisfied



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Controller in the SME as enabler of digitalisation

- Connect different data types – ERP / Text Data / Web data
- Analyse processes
- Think outside the box
- Analyse the most valuable use cases
- **In SME – the CONTROLLER should develop to DATA SCIENTIST and BUSINESS PARTNER/ YOU are the Innovator!**

How to develop to a data driven-decision making in a SME?

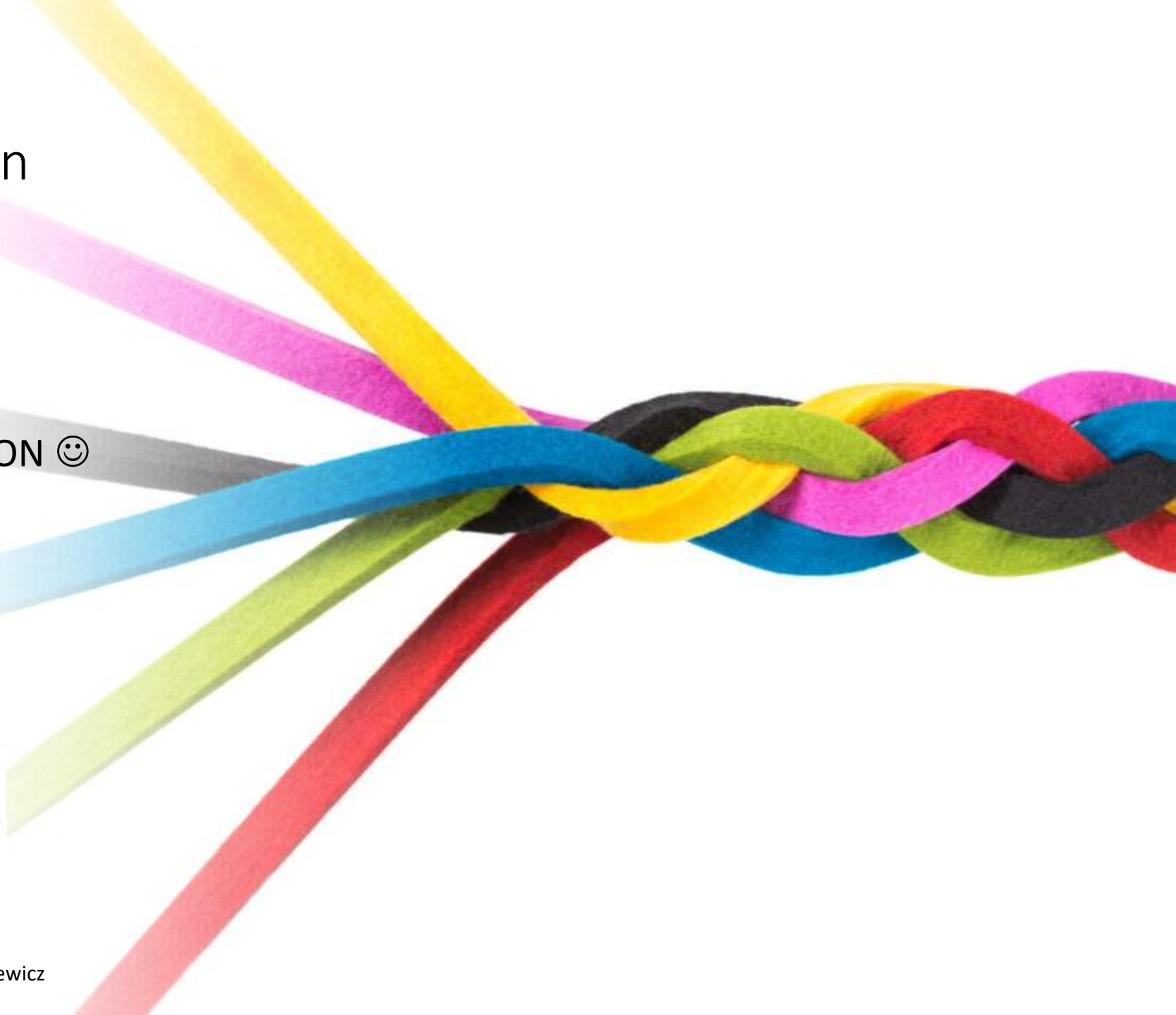
- Focus on the pain points in your organisation – **use cases with business focus**
- Find data afine people…take them from daily business – **take the people on the journey**
- develop **skills for DATA Analysis**
- Second level support – work with specialist – hotline for help

- Define Requierments - support from outside…**DEFINE strategy**
- Define **Project – agile**
- Talk about data - **Analytics is more then self-service**

“Data is not information, information is not knowledge, knowledge is not understanding, understanding is not wisdom” (Clifford Stoll)

There is a place for IMPROVISATION too

Key to success: Synergy of data driven decision making and improvisation



THANK YOU for YOUR ATTENTION ☺

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