EXPERIAN
learningDAY 2022

Accelerate and maximize your data potential

Housekeeping | In person
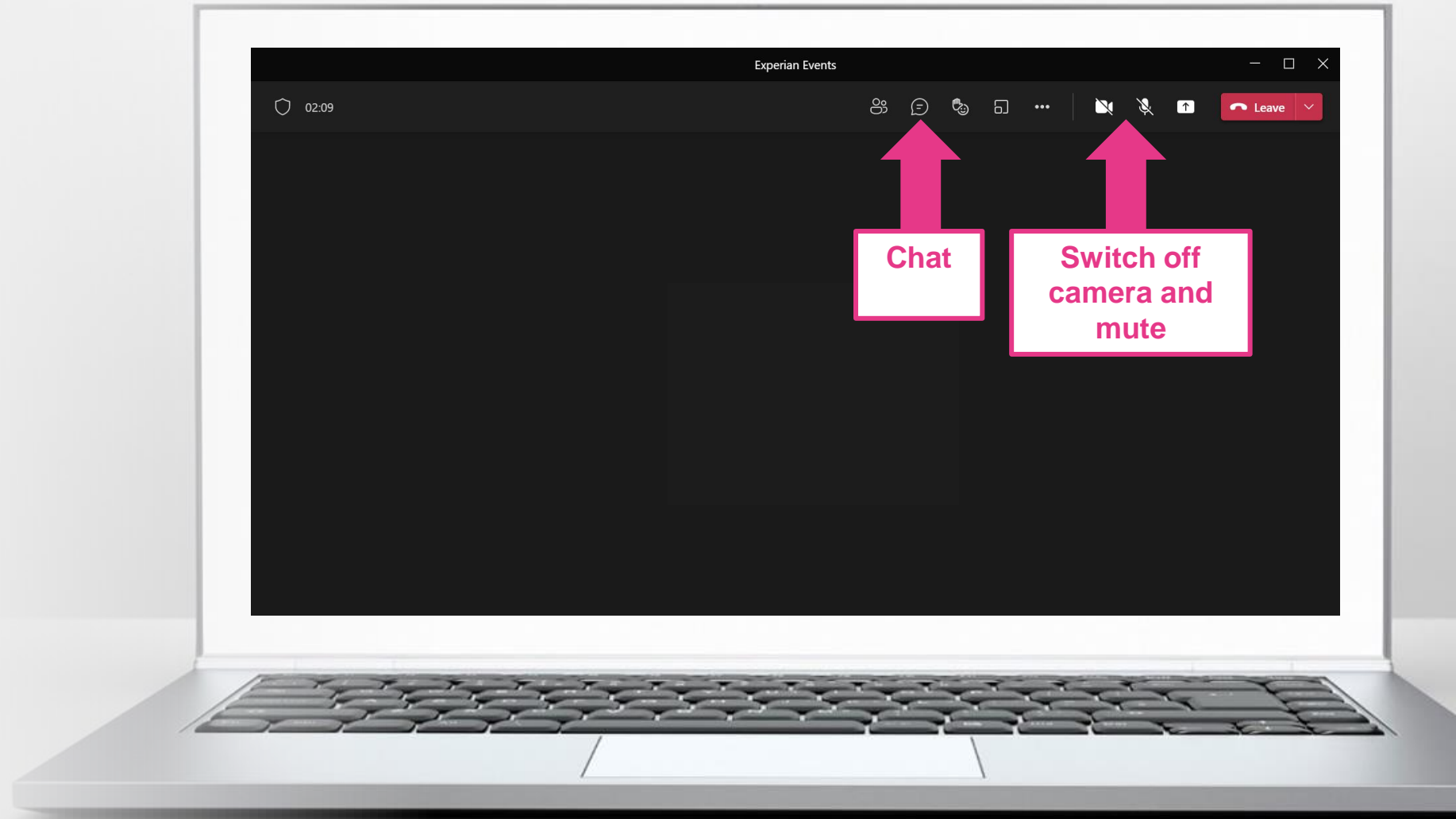
Fire exits

Devices silent

Ask the team

Housekeeping | Online

Teams Chat
Post and read messages here

Camera & Audio
Please ensure you are off camera and on mute

Experian Events

02:09

Chat

Switch off camera and mute

Leave

Agenda

09:00	**Welcome & Introduction** **Bo Rasmussen** – Nordic Sales Director, Experian Nordics	
09:10	**Customer Experience Update: Your benefits as an Experian Client** **Lars Tøttrup,** Operations Service Director, Experian Nordics	
09:30	**The value of alternative data within Analytics** **Julie Berg** – Analyst, Experian Norge	
10:00	**Break**	
10:15	**Limiting financial loss when E-ID is compromised** **Jon Marius Bru** – Pre-Sales consultant, Experian Norge	
10:45	**ESG Score - The utilization and value driver in the Nordics** **Szabolcs Hideg -** Head of Analytics, Experian Nordics	
11:15	**Break**	
11:30	**Scorecard development – Combining variables in a non-manual way** **Martin Haraldseth** – Data scientist, Experian Norge	
11:50	**Synthetic data – Why is this important and what value does this drive?** **Szabolcs Hideg -** Head of Analytics, Experian Nordics	
12:10	**Effective data orchestration in an optimal customer journey** **Jakob Færgeman**- Principal Consultant, Experian Nordics & **Jon Marius Bru**, Pre-Sales consultant, Experian Norge	
12:30	**Takk for i dag og lunsj** **Bo Rasmussen** – Nordic Sales Director, Experian Nordics	

Customer Experience in Experian

Three years ago, we launched our CX programme, and we have seen improvements reflected in the latest feedback

Comments about behaviour & knowledge are favourable and highlight a high level of professionalism

The introduction of digital user forums, the launch of MyExperian and the Experian Academy has given Clients improved access to information

Launching the Experian Way of Closing the Loop has demonstrated we listen to our Clients and act on their feedback

We are innovating with new propositions to address changing Client Challenges such as Experian MAX

Our focus on Norway

"As your Client I need proactive engagement to meet the scheduled deliverables within the timelines"

Pace of Delivery

COVID impact on time to fix defects, implement changes, and deliver tasks and projects

Short term remediation

Restructured Factory

Optimize Processes

- Support staff moved Off Site

- Focus on client feedback

- Faster prioritization

- Taskforces to address bottlenecks

- Change from *Functional* to *Product oriented* self sufficient agile teams in support.

- Central Delivery Hub for software projects and upgrades

- Enable next level of agile maturity with constant improvements

Experian are proud to share that across the Globe our Clients Trust us

✓ We recognise the importance of keeping your data safe and secure

✓ The World continually faces new Fraud threats

✓ We constantly improve our technology and IT infrastructure

Transformation

Upgrading the Services to enhance **Client experience** and to keep ahead on **Security**

Modernization progress

- Simplified and consolidated platforms
- Added Security in design and embedded controls
- Re-development of Services and Products

Benefits achieved

- Safeguarding data with highest Security focus
- Upgraded User interfaces and added Functionality
- Further increased Data Quality
- Service stability increase

What's next?

- Performance calibration as we implement
- Focus to enhance and simplify interfaces / APIs
- Further added functionality and Service simplification

"We need to make it easy for Clients to manage my access"

Service Access

Constant focus to ease and safeguard access to your services

Single Sign on

Service access through one interface – and with added Self Service,

Enhance usability

We listen to client feedback and implement better help texts, improved process and functionality.

Access review focus

Further measures to protect data – we need your help on annual client validation of user access.

Security First

Clients can trust Experian to safeguard data – Security is in everything we do.

Key Takeaways

Client driven improvement

- We continually look to improve your experience with a CX programme led by our Clients' voice.

- We have an award winning Close the Loop process to ensure we listen, respond and take action.

Stay in touch

- Please continue to provide feedback, your insights are invaluable.

- Ensure you have agreed to receive our monthly newsletters, to stay up to date and informed – sign up here: https://www.experian.no/arrangementer/Nyhetsbrev

Sign up to MyExperian

- Our Client portal contains many resources that you will find useful.

- We are continually adding new functionality and information to benefit our Clients.

- Visit: https://www.experian.com/lp/decision-analytics/global/myexperian/register

Agenda

1. **Industry challenges relating to data**

2. **Traditional credit data**

3. **New data sources and how they are relevant**

4. **Web Data Insights**

Some of the **challenges** facing the credit industry

in recent years…

Security, privacy and data retention

Stricter regulation relating to **data collection, retention and security** as part of GDPR, and consumers' right to be forgotten are changing the way data is used and stored

Lending requirements

In order to **stay compliant** with recent lending regulations such as *Utlånsforskriften* and *Gjeldsinformasjonsloven*, more data needs to be collected as part of credit assessment, compared to in the past

Data sources and methodology

The tougher regulatory environment has forced businesses to think outside the box and look for additional data alternatives, both in terms of data sources and analytics methodology
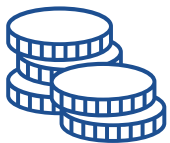
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An overview of traditional «credit data»

Consumer information

Tax assessment

From last 3 years:

- Income
- Tax
- Net wealth
- Tax class

Payment remarks

- Number of open remarks
- Value
- Type of remark
- Creditor
- Source

Business interests

- Number of business interests
- Type of business interest (e.g. Owner, board member, etc)
- Bankrupt business interests

Geography

- Address information
- Postal number
- Municipality
- County
- Alternative address

With stricter regulation requiring the **collection** of specific data, while **limiting** the **use** and **storage** of **existing data**, the industry has been forced to **look for alternatives**…

Some of Experian's newer data sources and analytics methodology

Debt Registry	Web Data Insight
Property data	Synthetic Data
DSF	ESG

What is available from some of the additional data sources?

Examples of some available data fields

Debt Registry (Gjeldregister)

Property data

DSF (Folkeregisteret)

Debt summary info:
- Sum balance
- Total exposure
- Total number and sum of all loans

For each loan type:
- Total exposure
- Original loan amount
- Remaining amount
- Terms
- Interest rate
- Flag if coapplicant

Property data with Ambita as original source:

- Number of properties owner
- Ownership share
- Pledge amount
- Value
- Remarks on property

- Marital status
- Number of children
- Citizenship
- Birth place
- Date of emigration (if emigrated)

Etc.

Some of Experian's newer data sources and analytics methodology

Debt Registry

Property data

DSF

How is this

data relevant?

Overview of the lending requirements in **Låneforskriften**

Affordability calculation

Must include normal living expenses.

Borrowing costs must include interest, loan repayments, and 5% interest rate increase on the customer's total debt.

Debt ratio

Based on gross income and total debt.

Should not exceed 5*income.

Monthly installments

No installment-free payment period.

Maximum of 5-year maturity, unless it is refinancing.

Refinancing

If refinancing existing unsecured debt: does not have to meet all other requirements.

Refinancing possible only if new loan is smaller in size, and total cost does not exceed existing.

Calculating an applicant's disposable income:

Income − **Living Expenses** − **Debt Expenses** = **Disposable Income**
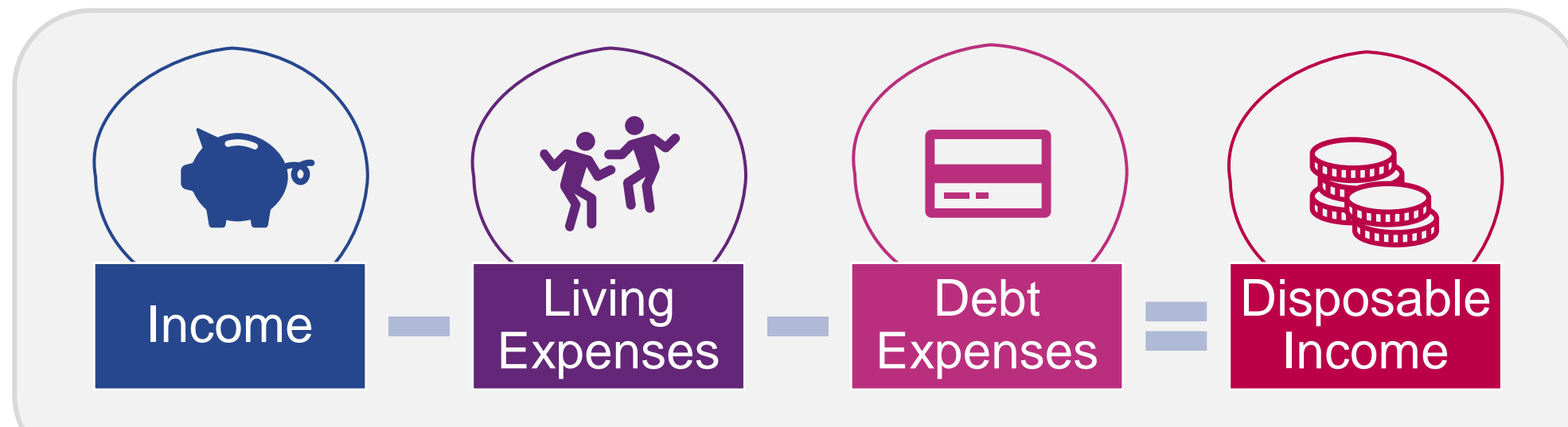
Monthly **income** based on either:
- Income from last available tax records (from Experian), or
- Annual income from application form

Other relevant variables, when available:
- Rental income (from application form)
- Estimated parental benefits (based on number of children, from Experian)

Taxes from last available tax year (from Experian)

Estimated **living expenses**, containing:
- Standard SIFO budget estimates
- Monthly utility/power costs, based on either size of home or household (from application form or Experian)
- Car expenses (from Experian)
- Monthly rent, either from application form or estimated based on geographic location/city
- Marital status verified against DSF to determine if living expenses are shared (from Experian)

Debt information, based on either:
- Secured and unsecured debt stated on application form
- Unsecured debt from the Debt Registry

Monthly payments calculated using estimated loan term and interest rates. Rates can be customized to client's preferences.

experian™

Debt registry data helps ensure **consumer protection** and **regulatory compliance**, by…

✓ Verifying stated information from application form

✓ Used when calculating applicant's debt ratio

✓ Used as input to affordability models

Some of Experian's newer data sources and analytics methodology

Debt Registry	Web Data Insight
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What Web Data Insight is

What it IS

What it DOES

What it MEANS

- A web service solution, hosted by Experian, **to better manage SME acquisition and portfolio risks across the lifecycle.**

- Uses machine learning and advanced data science **to generate entirely new predictive data variables.**

- Enables providers of credit to SME businesses to overcome the challenges created by **limited business intelligence and credit data.**

- Gathers **non-traditional unstructured and uncorrelated web data** relating to SME businesses, their presence in the market and what is being said about them by their customers and suppliers.

- Transforms data in real time into usable insights that enable providers of credit to make **faster, more accurate lending decisions.**

- Helps clients **grow top line revenues** by accepting more good quality customers faster whilst simultaneously **reducing bottom line costs** by reducing the need for referral and underwriting.

- Clients are better able to build and maintain profitable SME lending portfolios **without having to reduce their overall risk appetite and** use the additional insights to inform **more accurate and better targeted marketing and customer acquisition strategies**.

In short...

WDI is an **internet presence index** made up from a set of features measuring internet activity on SMEs

Note:

Sole traders are currently not applicable – due to Experian legal and compliance limitation

WDI is not compliant in Norway as a **standalone risk score**, but can be **useful as a supplementary to existing credit risk models**

Methodology and Model development – What WDI is
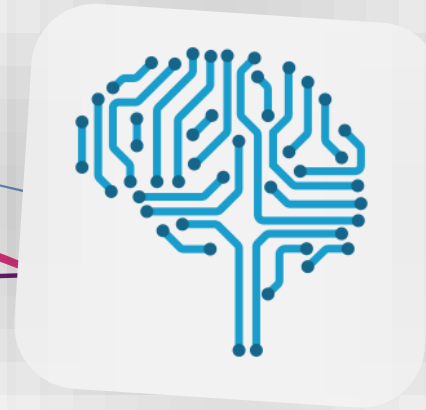## From data requirements to web data score

SMEs portfolio **Web crawling** **Web profile** **ML model** **Web data index**

SMEs portfolio data requirements:
- Legal entity name
- City and/or Address
- Date of Application
- Observed behavior (e.g. G/B Flag, Churn flag)

Methodology and Model development – What WDI is
Web Attributes Creation

Methodology and Model development – What WDI is
Getting Insights: an example

Company A

Restaurant

2x more positive reviews in 6 months

Low occurrence on government web sites

Low risk neighbourhood

Contact information is present on the web
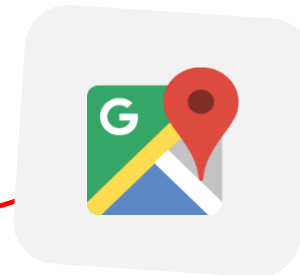
Low web presence

Company B

Manufacturing

Increase on negative reviews

Moderate occurrence on government web sites

High risk neighbourhood

No contact information can be found

High web presence

Norway Solution

298k
Companies are used for development

5 KPIs are defined
GS Presence
GM Contact Info
GM Rating
GM Photo Count
GM Price level

Internet Presence Score

Internet presence - index	Description	% Population
1	Very Low Presence	13.83%
2	Low Presence	12.69%
3	Medium Presence	36.18%
4	High Presence	28.73%
5	Very High Presence	8.57%

Norway Solution – KPIs distribution

bins	meaning	Total pct
GM contact info		
0	No Hit	19.68
1	has no phone and no website	11.74
2	has phone OR website	25.50
3	has both	43.08
GM rating		
0	No Hit	19.68
1	found on GM but no ratings	42.54
2	Average rating <= 4.6; Total # ratings <= 10 and Days since last review > 150	24.66
3	At least two of the above listed conditions are not met	13.12

bins	meaning	Total pct
GM Photo Count		
0	No Hit	19.68
1	# photos = 0	45.81
2	1 <= # photos < 9	19.85
3	9 <= # photos	14.66
GM Price level		
0	No Hit	19.68
1	Found on GM, but no price level.	78.76
2	price level <= 2	1.46
3	2 < price level	0.10

# GS Searches		
0	No Hit	12.07
1	1-3 results	33.48
2	4-499 results	32.55
3	500 + results	21.90

Norway Solution – KPIs distribution

- Internet Presence Index = 1(very low presence)
- Internet Presence Index = 5(very high presence)
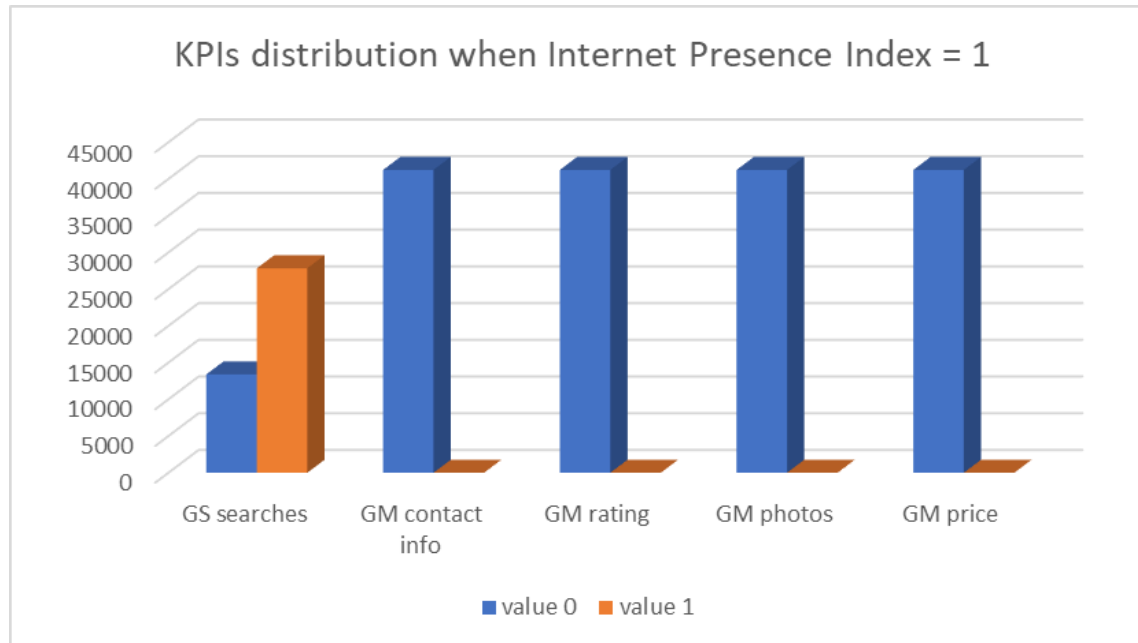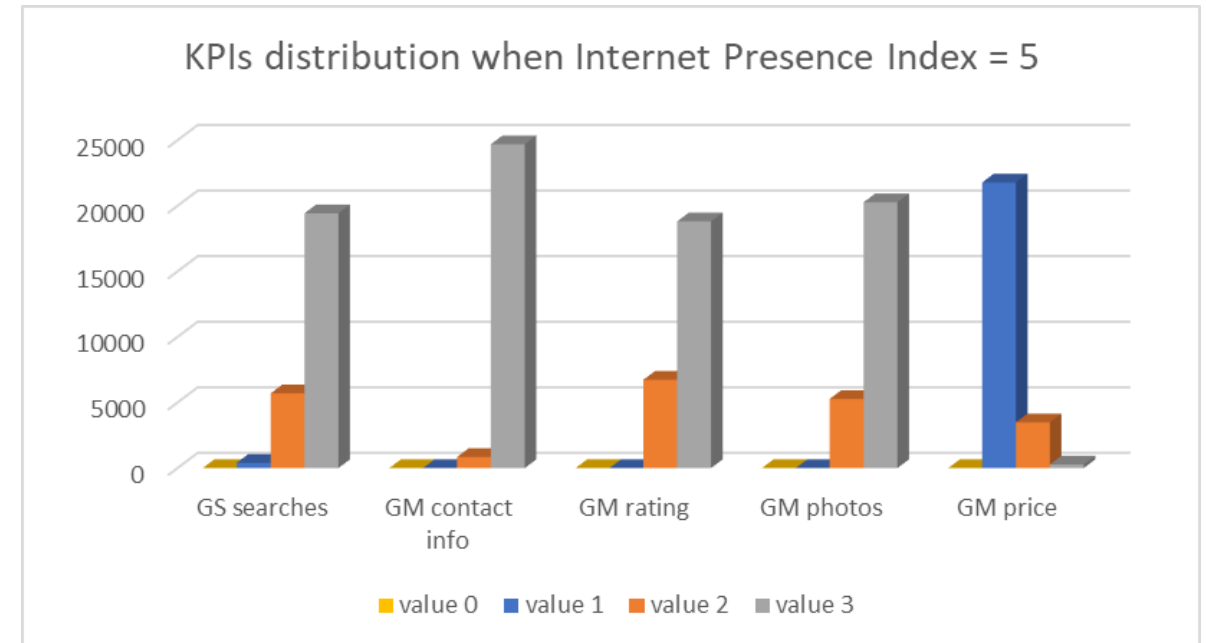
- GS Searches = {"0" : "No Hit", "1" : "1-3 results", "2" : "4-499 results", "3" : "500 + results"}
- GM contact info = {"0" : "No Hit", "1" : "has no phone and no website", "2" : "has phone OR website", "3" : "has both"}
- GM Rating = {"0" : "No Hit", "1" : "found on GM but no ratings", "2" : "Average rating <= 4.6; Total # ratings <= 10 and Days since last review > 150", "3" : "At least two of the above listed conditions are not met"}
- GM Photos = {"0" : "No Hit", "1" : "# photos = 0 ", "2" : "1 <= # photos < 9", "3" : "9 <= # photos"}
- GM Price level = {"0" : "No Hit", "1" : "Found on GM, but no price level.", "2" : "price level <= 2 ", "3" : "2 < price level"}

How can WDI be used in credit strategies today?

Bespoke **credit origination** or **customer management strategies** can be **improved** by adding an additional source of information from WDI

Some of Experian's newer data sources and analytics methodology

Debt Registry	Web Data Insight
Property data	Synthetic Data
DSF	ESG

Some of Experian's newer data sources and analytics methodology

Remaining topics sound interesting?

**Stay tuned for our Nordic Head of Analytics,
Szabi Hideg's upcoming presentations on
these shortly***:*

Synthetic Data	ESG

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Agenda

**The challenges we are facing**

Increasing security with minimum friction

Short demonstration

Challenge: Clients are tricked into giving up their E-ID details and get their accounts drained

- Fraudsters collects compromised PII data about individuals

- The fraudsters use different methods to trick the individuals to give up their E-ID data.

- The clients are giving up details in fear of something bad happening and are helping the fraudsters getting control of their funds.

- The compromised PII data together with the E-ID information is used to drain the individuals accounts and to take up credit in their name.
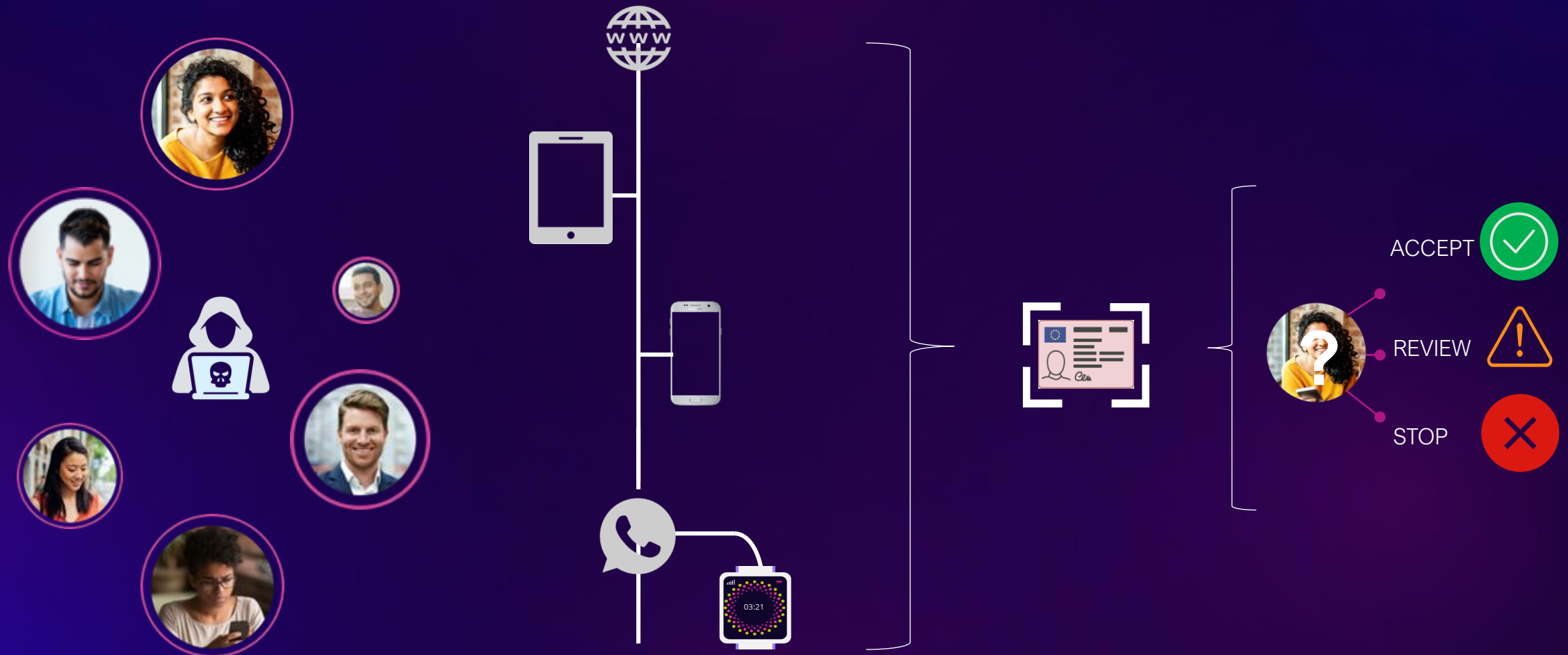
Humans are the weakest link!
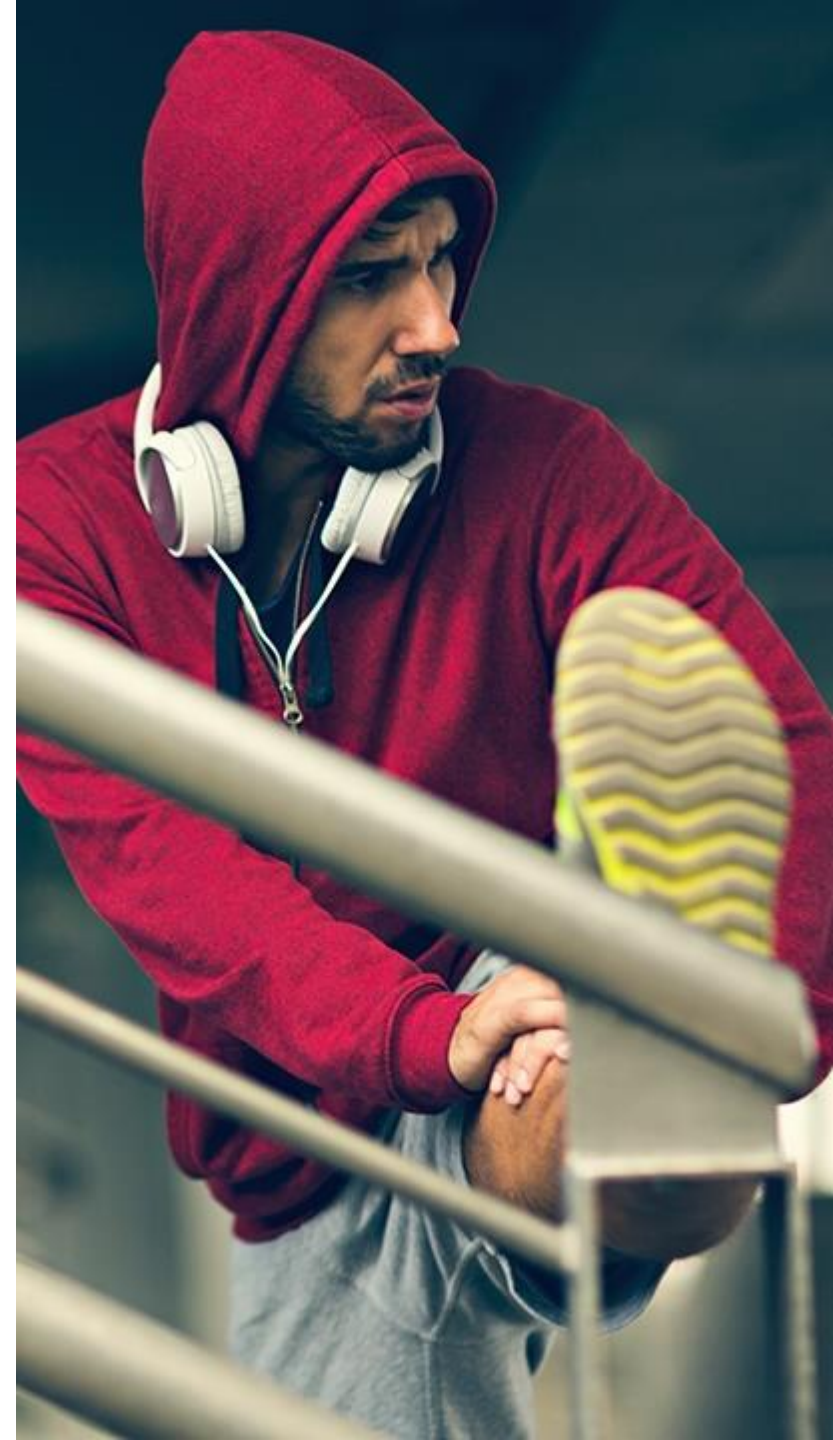
With 57% of businesses reporting higher losses from account opening and account takeover fraud in the past 12 months, the challenge is becoming harder to solve

The challenge is to be sure that the owner of the E-ID is the one that use it and not a fraudster…

ACCEPT

REVIEW

STOP

A user access the internet bank

with a device of choice

and log in with E-ID (BankId) is done

But who is the user behind the E-ID?

How can we increase security without unwanted extra client friction?

Device intelligence is triggered on all logins to help authenticate the users
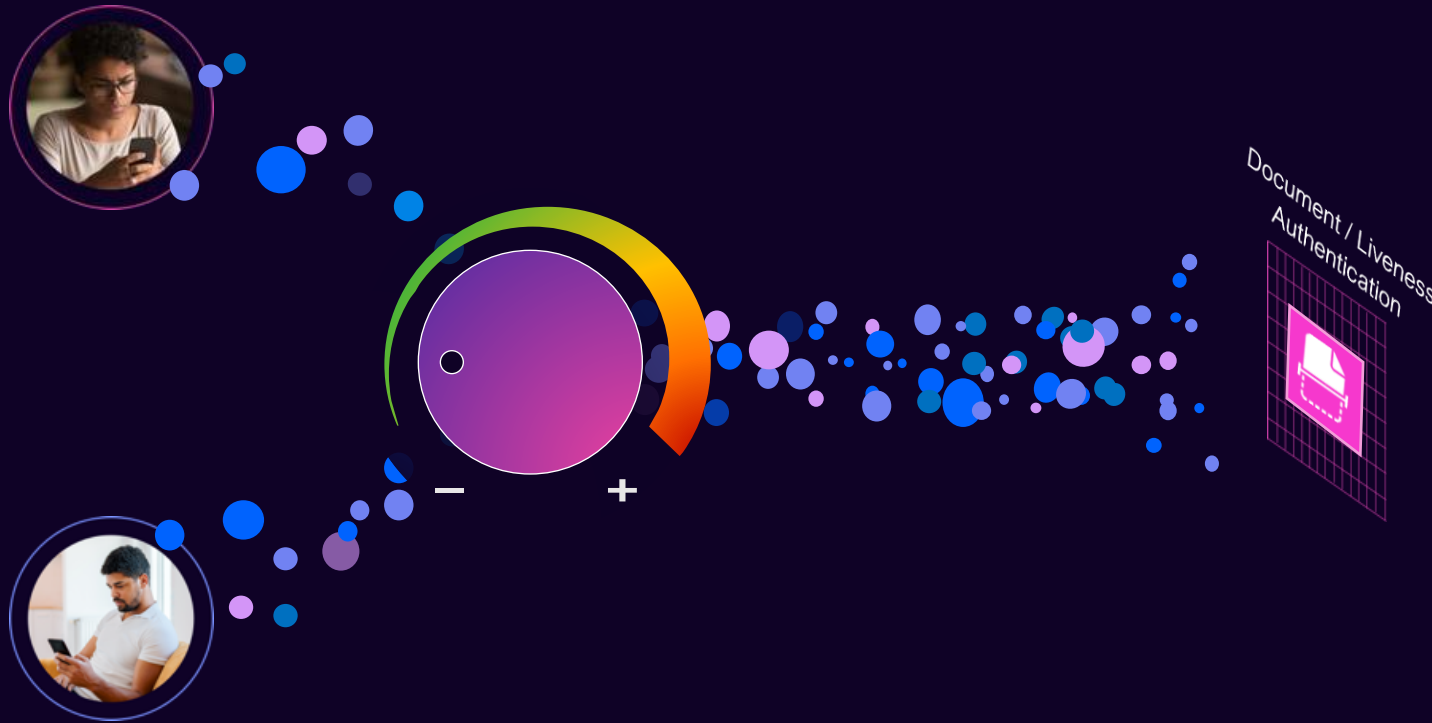
Document verification is used to verify the user identity and actions is restricted until new authentication is done

Device intelligence

Extra security is triggered if device intelligence indicates a new device or have found any discrepancies with the device used.

Document / Liveness Authentication

Action approved

How can we increase security without unwanted extra client friction

Let the user choose if the extra level of security will be active, and what the thresholds shall be to trigger it

The extra security option is only triggered if the user wants to use the additional security.

Document / Liveness Authentication

- *Use E-ID and Document verification to activate new settings*
- *Use face recognition to identify the client when the extra security is triggered*

Three **main** takeaways

Use step up logic

Use Biometrics

Avoid unwanted friction

Use device intelligence for
all transactions
to trigger additional
security level.

Remember to use Dev Intel
that is difficult to block!

Biometrics like face or
voice recognition can
easily be verified against
the original source

Let the user choose to use
the additional security
option or not, like a
twofactor authentication

Help your clients protect themselves!

Table of contents

Regulatory background

2015

- **Sustainable Development Agenda for 2030** is developed by the UN, with 17 sustainable development goals
- **Paris Agreement,** establishes a maximum increase of 2°C until the end of 2100, compared to pre-industrial levels

2018

- European Commission (EC) **Action Plan on Sustainable Growth** :
  - **Reorienting capital flows towards a more sustainable economy**
  - **Mainstreaming sustainability into risk management**
  - **Fostering transparency and long-termism**

2019

- European Commission **Green deal**, promotes a circular and sustainable economy, with a primary objective : making Europe **climate neutral in 2050**

2020

- **EU Taxonomy** : defines a common framework for all ESG aspects

2020

- **ECB guide on climate-related and environmental risks for banks**
  - Climate and environmental risk become part of the banking supervision process
  - Includes physical risk for assets and transition risk to low carbon economy

2021

- **Management and supervision of ESG risks** : how ESG factors and risks should be included in the regulatory and supervisory framework: business strategies, governance, risk management and supervisory reporting
- Inclusion of ESG risks in **supervisory assessments**
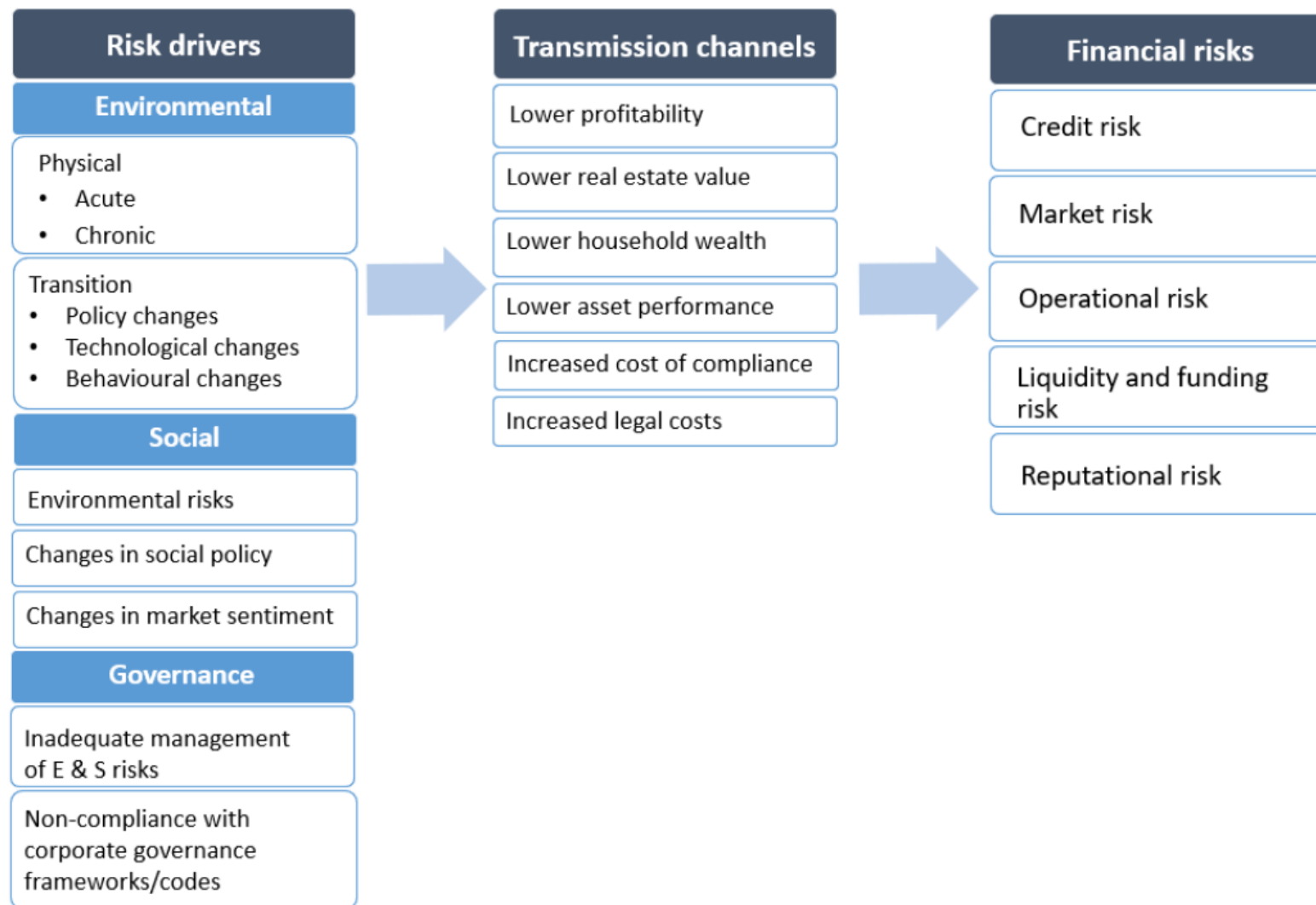- **Reporting** : Draft Pillar 3 disclosures of ESG risks (green asset ratio)

2021

- **BCBS principles** for the effective management and supervision of climate-related financial risks
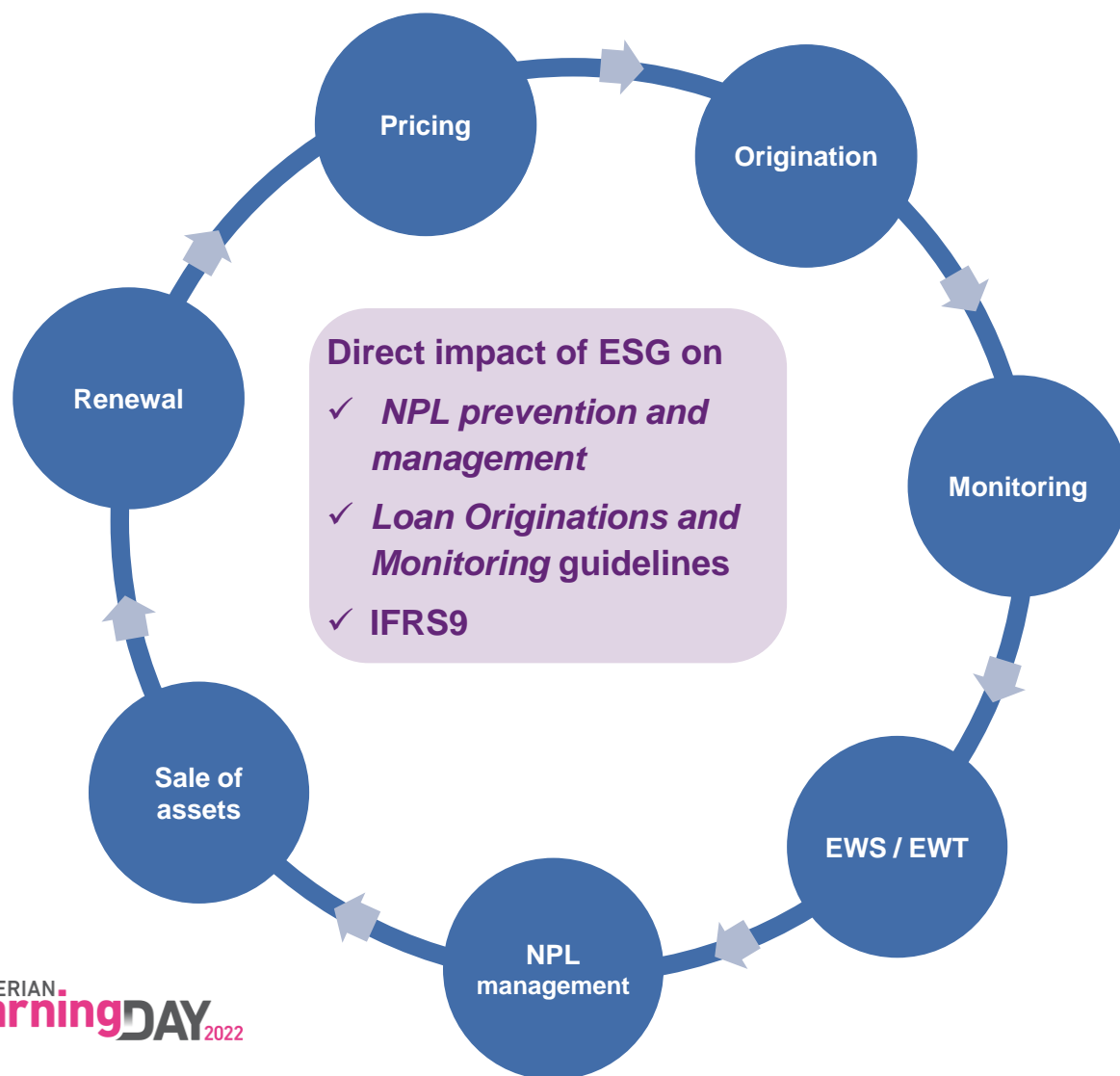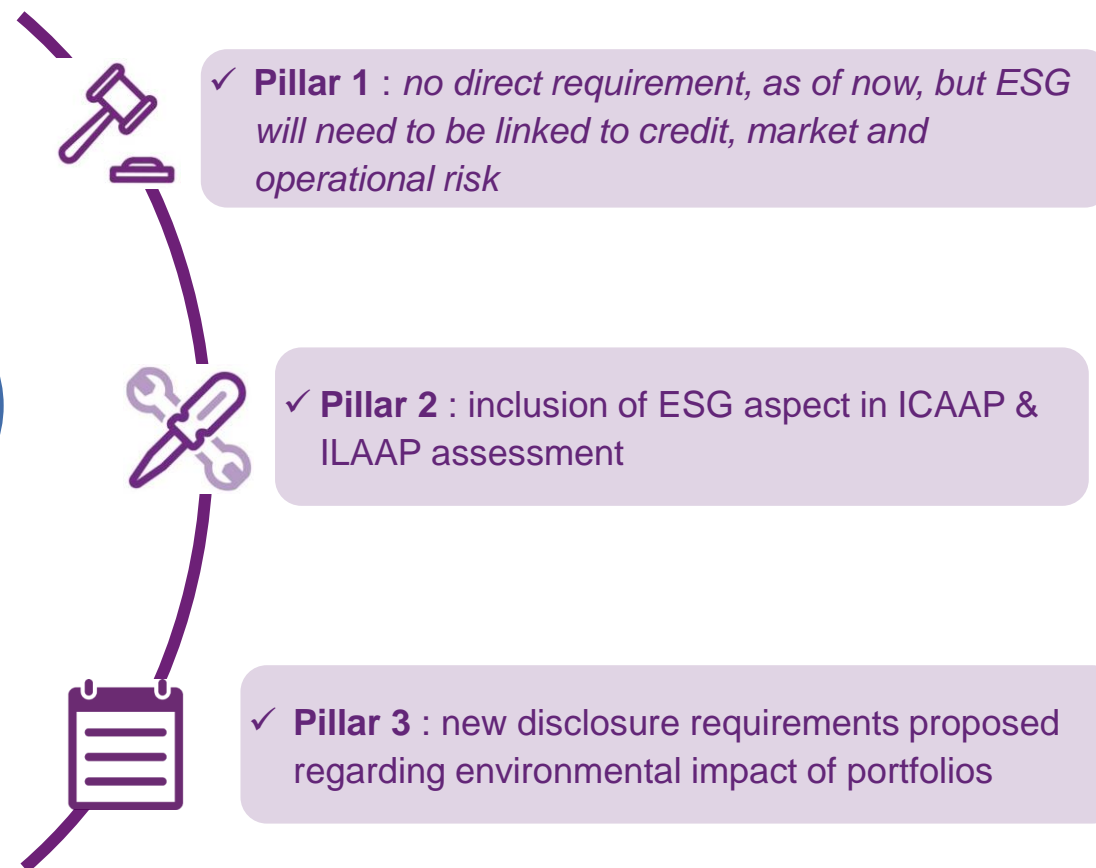
Why to move fast?

ESG Risk Drivers

Risk drivers	Transmission channels	Financial risks
Environmental	Lower profitability	Credit risk
Physical • Acute • Chronic	Lower real estate value	Market risk
Transition • Policy changes • Technological changes • Behavioural changes	Lower household wealth	Operational risk
Social	Lower asset performance	Liquidity and funding risk
Environmental risks	Increased cost of compliance	Reputational risk
Changes in social policy	Increased legal costs	
Changes in market sentiment		
Governance		
Inadequate management of E & S risks		
Non-compliance with corporate governance frameworks/codes		

ESG Impact on Credit Cycle

Basel framework / CRR / CRD

Pricing → Origination → Monitoring → EWS / EWT → NPL management → Sale of assets → Renewal

Direct impact of ESG on
- ✓ **NPL prevention and management**
- ✓ **Loan Originations and Monitoring guidelines**
- ✓ **IFRS9**

- ✓ **Pillar 1** : *no direct requirement, as of now, but ESG will need to be linked to credit, market and operational risk*

- ✓ **Pillar 2** : inclusion of ESG aspect in ICAAP & ILAAP assessment

- ✓ **Pillar 3** : new disclosure requirements proposed regarding environmental impact of portfolios

Key Pillars and Supervisory Expectations

Business Models and Strategy

❑ **Business Environment**

Understand the impact of ESG (climate-related and environmental, social and governance) risks on the business

❑ **Business Strategy**

Integrate the ESG risks in the business strategy

Governance and Risk Appetite

❑ **Management body**
Consider ESG risks when developing longer-term business strategy and objectives

❑ **Risk appetite**
Include ESG risks in the risk appetite framework

❑ **Organizational structure and reporting**
ESG roles and responsibilities of management and 3 lines of defence. Reporting of ESG risks

Risk Management

❑ **Risk management framework**
Incorporate ESG risks indicators as categories in the risk management framework:
- ✓ *Credit risk at all stages of the lending*
- ✓ *Operational risk*
- ✓ *Market risk*
- ✓ *Liquidity risk*

❑ **Stress testing and scenario analysis**
Include ESG risks in the baseline and adverse scenarios

Disclosure

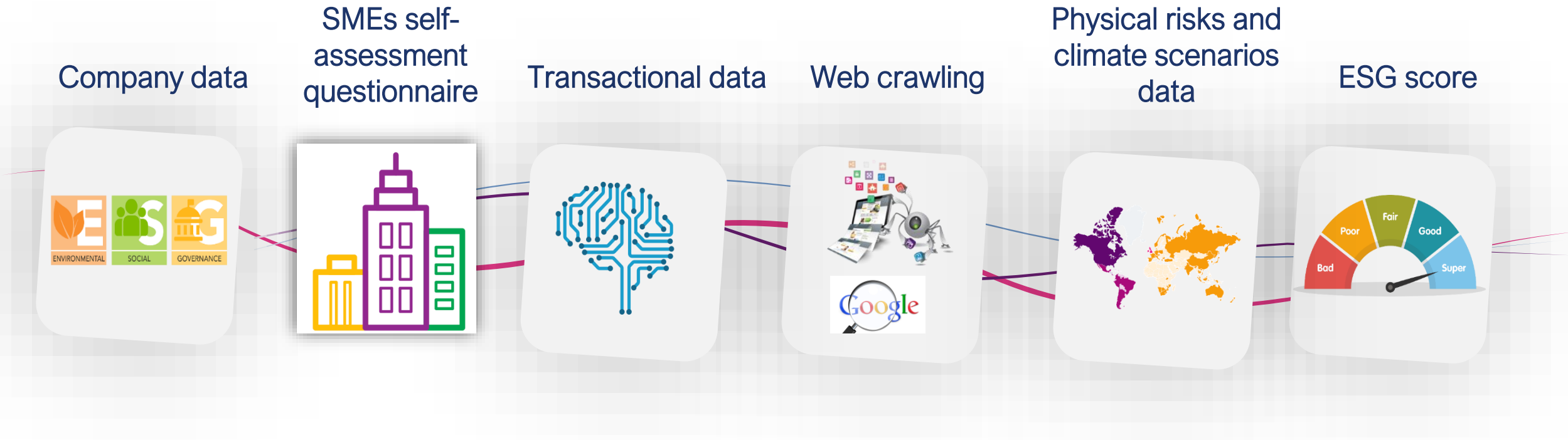❑ **Policies and procedures**

Disclose information and key metrics related to ESG risks
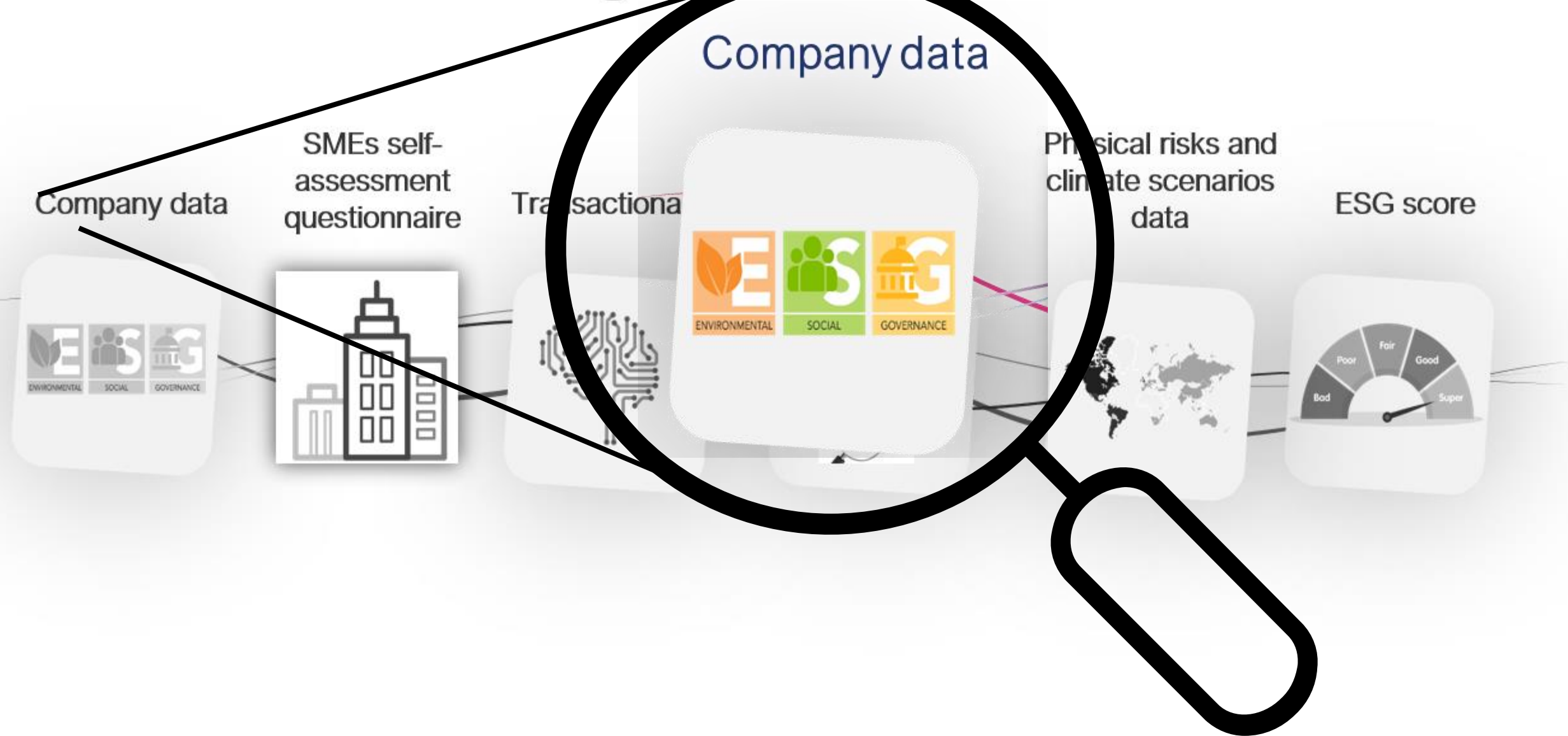
❑ **Disclosure of assets affected by climate change**

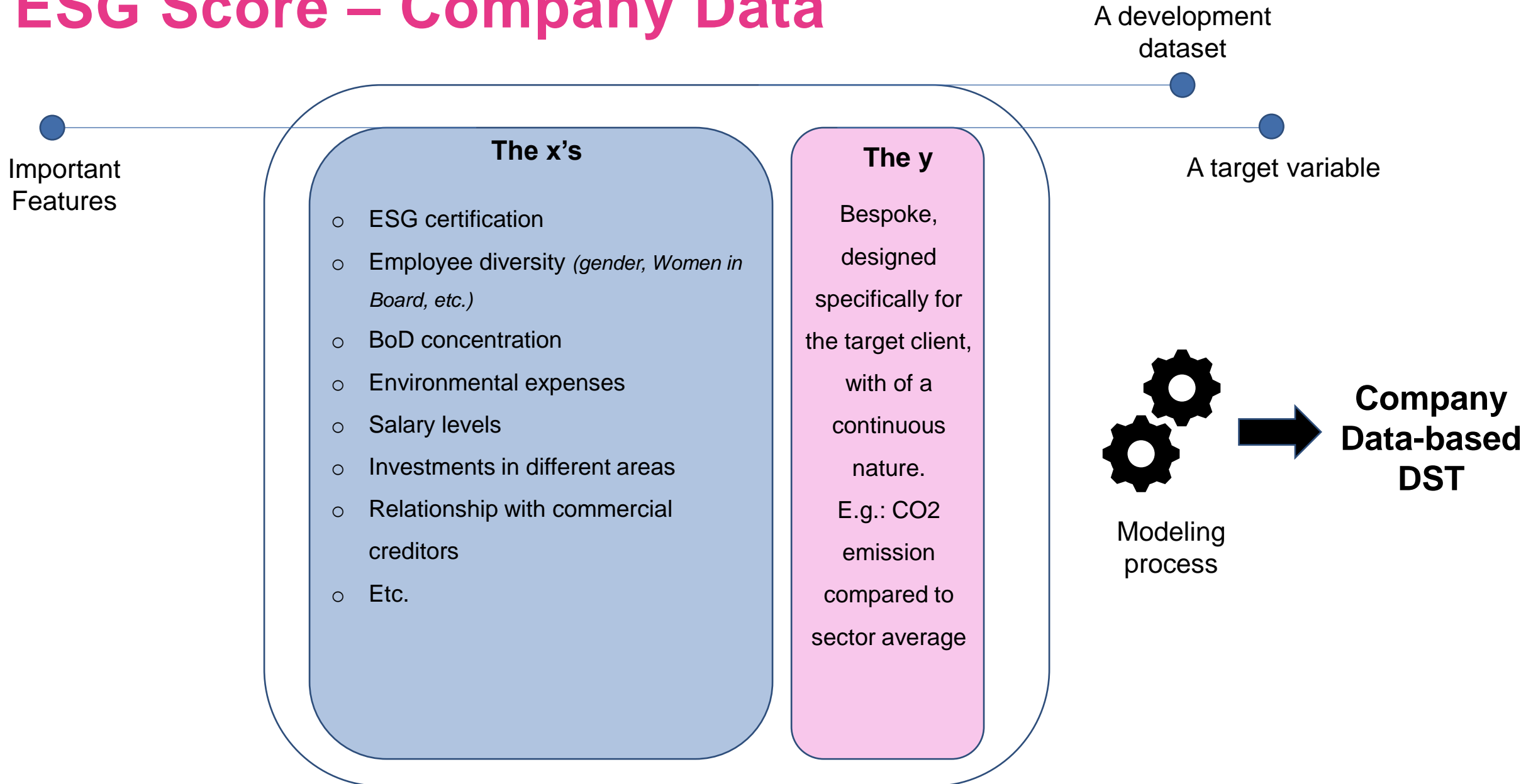*Series of templates included in Pillar 3, including Green asset ratio*

ESG Score – building blocks

Company data

SMEs self-assessment questionnaire

Transactional data

Web crawling

Physical risks and climate scenarios data

ESG score

ESG Score – building blocks

Company data

SMEs self-assessment questionnaire

Transactional

Physical risks and climate scenarios data

ESG score

ESG Score – Company Data

Important Features

A development dataset

A target variable

The x's

- ESG certification
- Employee diversity *(gender, Women in Board, etc.)*
- BoD concentration
- Environmental expenses
- Salary levels
- Investments in different areas
- Relationship with commercial creditors
- Etc.

The y

Bespoke, designed specifically for the target client, with of a continuous nature.
E.g.: CO_2 emission compared to sector average

Modeling process

Company Data-based DST

How Can Experian Help?

Identification
New Data

Evaluation
New modelling & Stress Testing Methodologies

Action
New Risk Management Methodologies

- ✓ **Advanced analytics to capture and analyze ESG data**
- ✓ **Web-based data** to capture timely information on ESG

- ✓ **Individual assessment of ESG risk of each exposure** :

  - Transparent, simple and can be linked to KPIs used in the organization / systems

  - Established methodology, using multiple criteria on each dimension of the ESG

- ✓ **Risk framework method**, sensitivity analyses to analyze dynamic impact of ESG :

  - Forecasts that account for ESG risks, including their feedback loops

  - Capacity to handle regional and sectorial analysis

  - Consultancy and data support to EBA's 2022 Climate Change Stress-Test

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- ✓ **Integration of ESG metrics in business strategy, governance and risk management**

  - ESG integration into credit risk evaluation process and credit decisioning

  - Development and delivery of new generation Risk Management, Loan Origination and Monitoring models, EWS and triggers that are forward-looking and incorporate ESG impact
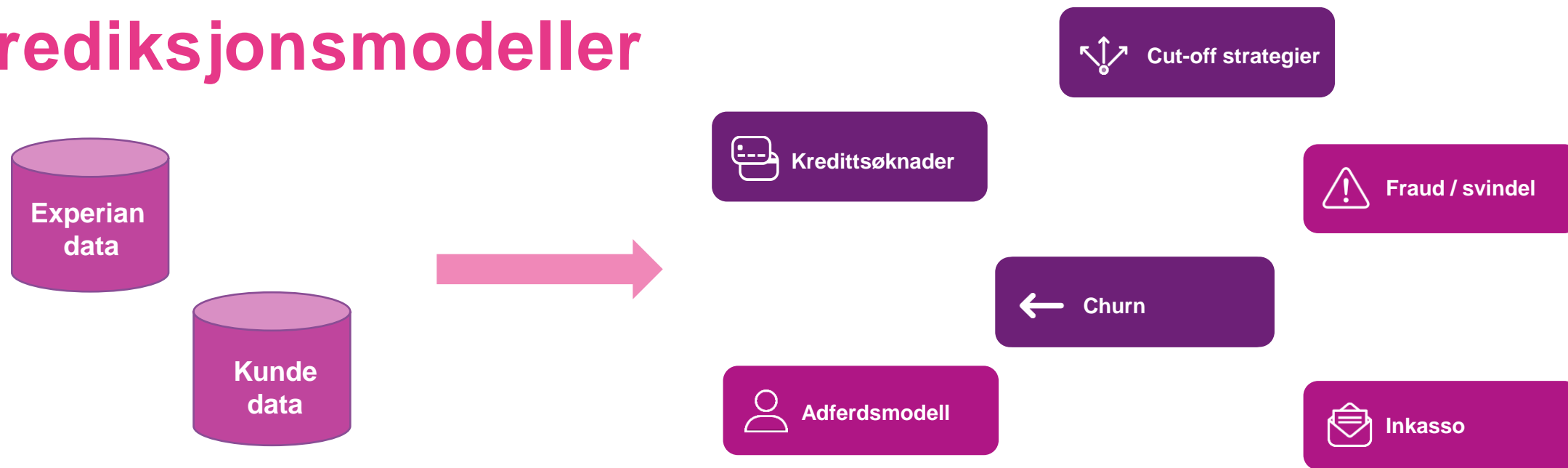
Agenda

- ➤ **Prediksjonsmodeller**

- ➤ **Hvorfor fokus på utledning av nye variabler?**

- ➤ **Interaksjonsvariabler**

- ➤ **Metodikk**

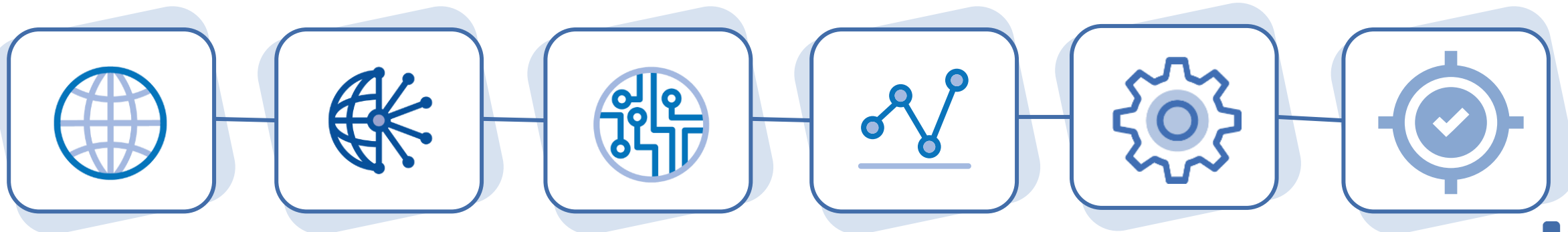- ➤ **Use case**

Prediksjonsmodeller

Experian data

Kunde data

Kreditsøknader

Cut-off strategier

Churn

Fraud / svindel

Adferdsmodell

Inkasso

Datauttrekk

Utledning av variabler

Modellkjøring

Beslutningsstrategier

Implementering

Monitorering og optimalisering

Hvorfor fokus på utledning av nye variabler?

Kombinasjon av avansert analyse og domenekunnskap er nødvendig for å sikre en robust prediksjonsmodell med høy prediksjonskraft.

- Økt mengde data og datakilder (eks. webdata, transaksjonsdata)
- Våre kunder befinner seg i forskjellige sektorer, markeder og forretningsområder
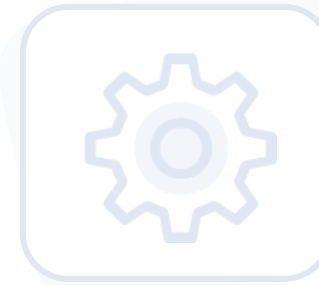
Datauttrekk **Utledning av variabler** Modellkjøring Beslutningsstrategier Implementering Monitorering og optimalisering
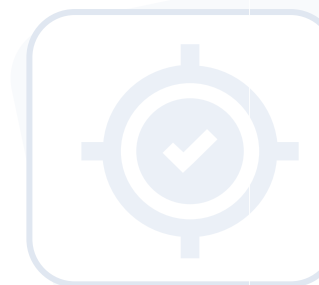
Interaksjonsvariabler

Automatisert løsning for generering av nye variabler

Fordeler

- Rask oversikt over data

- Beslutningstrær benyttes til å krysse variabler med optimale splitter for å øke prediksjonskraft

- Stor frihet til å velge algoritmens kompleksitet avhengig av data og formål

- Analytiker gjennomgår algoritmens forslag før endelig beslutning

- Håndterer numeriske og kategoriske variabler
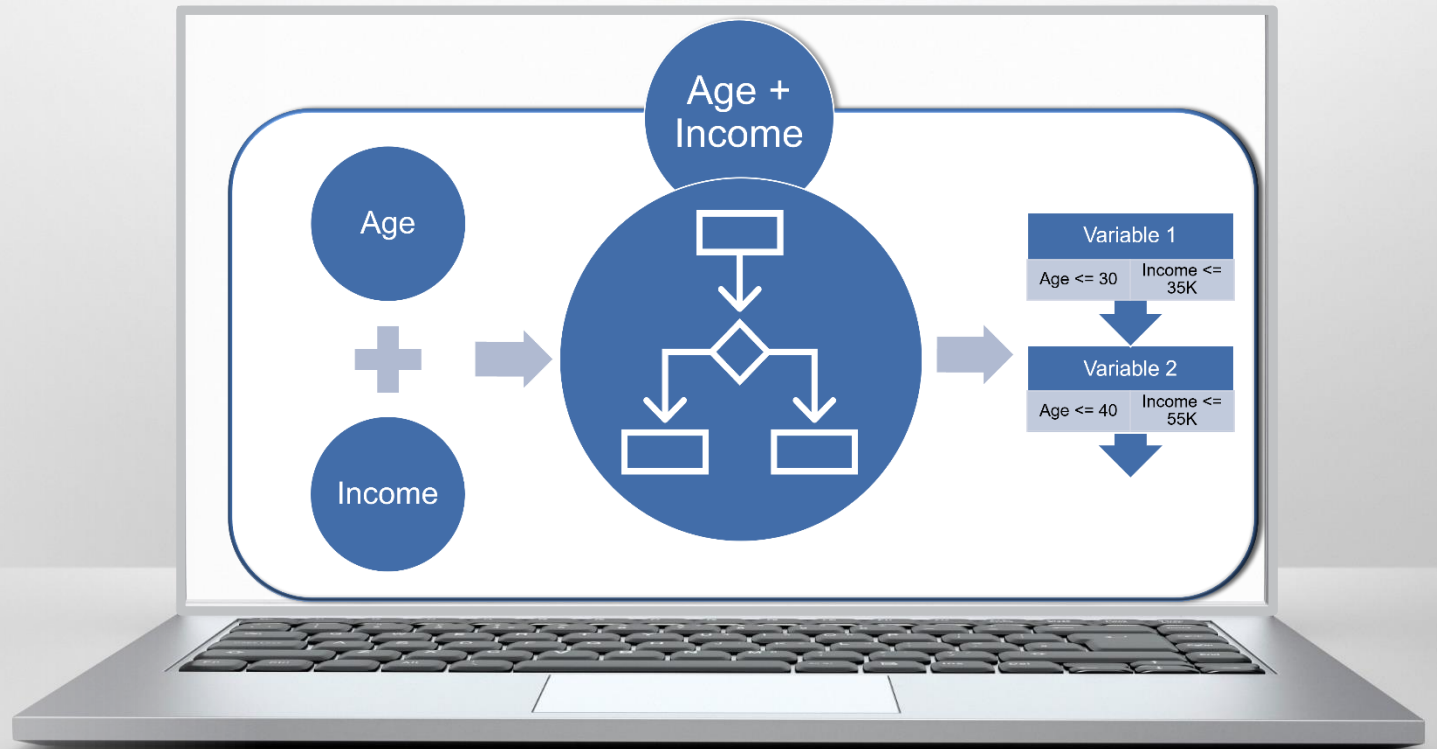
Metodikk

Generering av beslutningstrær for hver parvise variabelkombinasjon
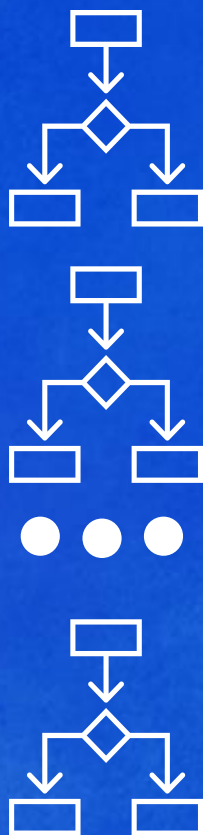
Sorterer trærne iht til Gini. Kalkulert opp mot avhengig variabel (eks. misligholdsindikator)

Ønskede interaksjonsvariabler påføres datasettet før modellkjøring

Variable
1
2
3
4
...
n-1
n

Tree	Gini
Variable 1+2	High
Variable (n-1)+n	High
Variable 1+3	Medium
...	
...	
...	
...	Low

Use case

Topp 10 foreslåtte interaksjonsvariabler basert på kriteriene forklaringskraft, merverdi og begrenset korrelasjon

| Index	Gini	KS	Strongest Variable	Strongest Variable Gini	VInfo	Variable 1	Variable 2
0	51.012	0.385	Variable_K	36.732	0.975	Variable_K	Variable_A
1	46.91	0.361	Variable_A	32.577	0.763	Variable_D	Variable_A
2	44.004	0.346	Variable_K	36.732	0.685	Variable_B	Variable_K
3	41.007	0.332	Variable_K	36.732	0.599	Variable_D	Variable_K
4	38.924	0.285	Variable_B	33.706	0.549	Variable_B	Variable_I
5	30.851	0.23	Variable_D	27.872	0.309	Variable_E	Variable_D
6	29.24	0.227	Variable_C	22.608	0.283	Variable_C	Variable_I
7	28.645	0.218	Variable_J	25.008	0.275	Variable_E	Variable_J
8	28.543	0.211	Variable_J	25.008	0.278	Variable_F	Variable_J
9	25.981	0.202	Variable_G	21.521	0.218	Variable_G	Variable_H

Use case

Sammenligning av endelige scoremodeller

✓ **Øke inntekter** *med flere
aksepterte
kredittsøknader til samme
risikonivå på porteføljen*

✓ **Redusere tap** *med et
lavere risikonivå på
porteføljen til samme
akseptrate*

Gini ⬆ **4.9%**
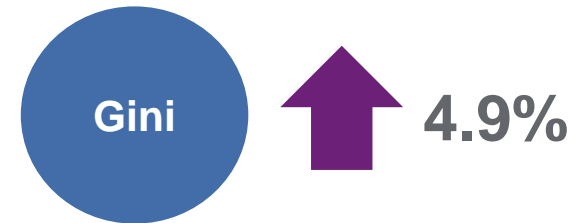
Split	Score_k01		Score_k02		Uplift	
	G/B Gini	G/B KS	G/B Gini	G/B KS	G/B Gini	G/B KS
All	59.8	45.3	62.3	47	4.2%	3.8%
Development	60.4	46.1	62.8	47.6	4.0%	3.3%
Validation	57.4	42.4	60.2	45.3	4.9%	6.8%

Mer alternative data og flere variabler gir et større potensial for økning i prediksjonskraft

Table of contents

○ **Regulatory Background**

○ **Some Challenges Data Driven Organizations Face**

○ **Synthetic Data**

○ **Use Cases**

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Regulatory background

General Data Protection Regulation

- The **toughest privacy and security law** in the world
- Drafted and **passed by the EU**
- Imposes obligations onto organizations that target or collect **data related to people in the EU.**
- Put into effect in **May 2018**

Personal Data

"Personal data is any **information that relates to an individual** who **can be** directly or indirectly **identified.**"

Right to Be Forgotten

- Aka **right to erasure**
- Individuals have the **right to have** their personal **data erased**
- **BUT,** the organization's rights in some cases can **trump the right to erasure**

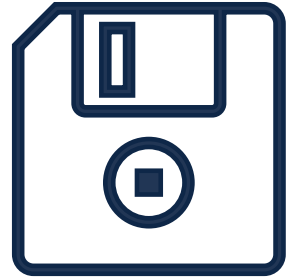# Some challenges data driven organizations face
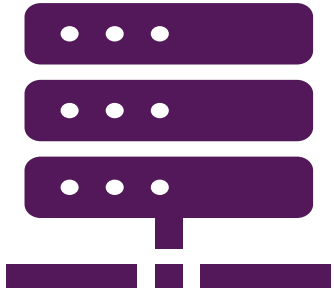
Historical Data

How long to go back?

How to justify legitimate use purpose?
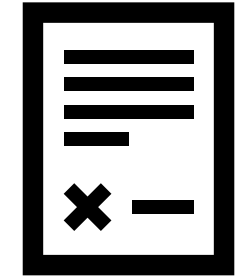
"Do you guys really need this?"

External Data

Previously (pre GDPR) available services, data sources are no longer available/restricted, increasing challenges with gathering external information on individuals for analytics purposes.

Data Processing

What can be used for what purpose? Restrictions on data use impacting model accuracy, certain data processing might be on the "border-line" where the right practice is to "play safe"

Framework & maintenance

Developing and maintaining a fully compliant framework while also having business considerations is not easy. Departments to agree on the processing actions, individuals to know and be up to speed on what is needed from their side, etc.

Some challenges data driven organizations face

Historical Data

How long to go back? How to justify legitimate use purpose?

"Do you guys really need this?"

External Data

Previously (pre GDPR) available services, data sources are no longer available/restricted, increasing challenges with gathering external information on individuals for analytics purposes.

Data Restrictions

What can be used for what purpose? Restrictions on data use impacting model accuracy; certain data processing might be on the "border-line" where the right practice is to "play safe"

Framework & maintenance

Developing and maintaining a fully compliant framework whilst also having business considerations is not easy. Departments to agree on the processing actions, individuals to know and be up to speed on what is needed from their side, etc.

Approved by GDPR

CAN'T HAVE A DATA BREACH
IF YOU DON'T HAVE ANY DATA

Source: https://gdpr.fun/

Another path? Any de-tour? Bumpy it may be...

Synthetic Data

What is synthetic data?
- Artificially created data that in large parts looks and behaves like **real data**.

How did it come into focus?
- GDPR compliance make it difficult to store and process data needed for certain analytics projects where data is not in a full anonymized status.
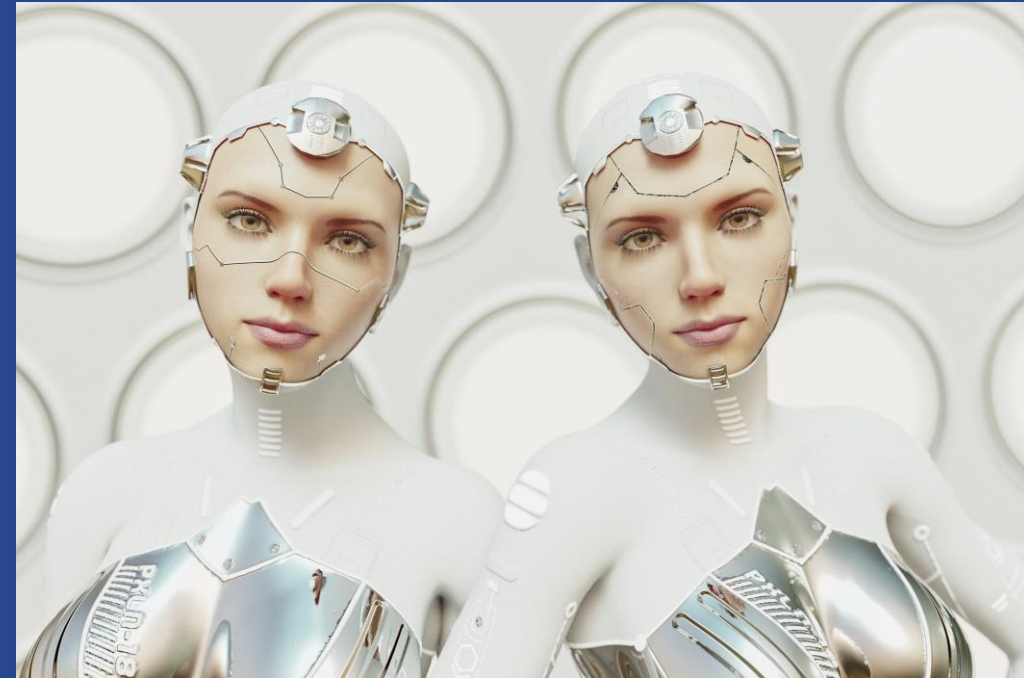
What value can it bring?
- Enable data driven solutions by creating 100% artificial records for further processing.
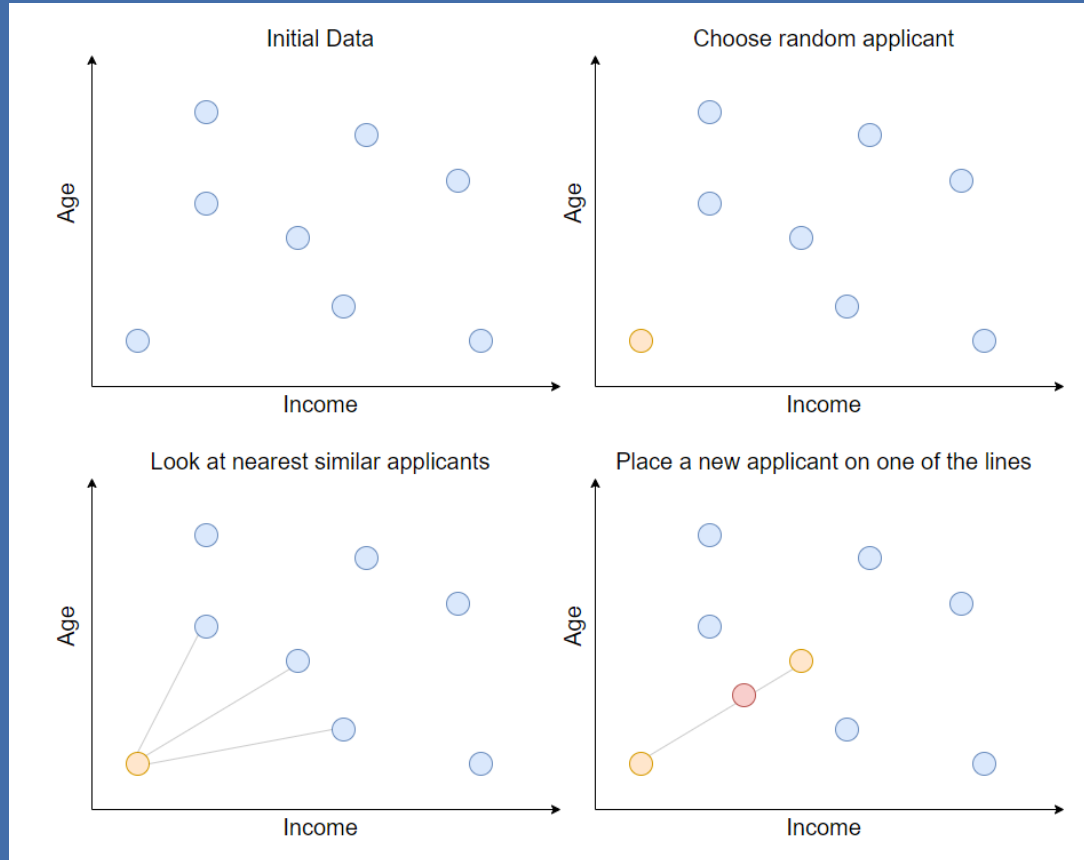
Some algorithms to help along the way:
- **SMOTE**
- GAN

SMOTE

- ○ Stands for **S**ynthetic **M**inority **O**versampling **Te**chnique

- ○ A very common approach used to generate artificial data-points.

- ○ The method ensures synthetic data points while still **maintaining similarity, anonymity and quality.**

SMOTE Step-by-Step

1. Choose a random real data point.

2. Find the k-nearest neighbors of the points.

3. Select one of the nearest neighbors randomly.

4. Make the synthetic data points somewhere in-between the real data point and the nearest neighbor.

Synthetic Data Use Cases

1. Data Anonymization

Applying the synthetic data generation process flow with the underlying audit and control steps **to generate a dataset that is disconnected from PII** and therefore could be stored for future study purposes.

2. Data Enrichment

Linking additional/external variables to a given dataset which after the dataset is synthetized and only the synthetic data version is shared to be used for analytics purposes.

3. Generic Models

Development of **generic models that are based on the synthetic data files**. This could include simulating a certain portfolio behavior or quality when opening a new product or entering to a new market.

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e happe

world

...ks as possible…

GORDON GEKKO
CORPORATE RAIDER · JACKSON STEINEM

THE MOST VALUABLE
COMMODITY I KNOW OF IS
INFORMATION

But reality is not necessarily particular digital mature

What type of paradox are we experiencing?

DATA QUALITY: THE TRUTH ISN'T OUT THERE
Oliver Wyman
Why do banks struggle to achieve financial goals? Their data

" Banking is just bits and bytes

John Reed, Citibank
Chief CEO/Chair, 1984-1998

Why is the combination of physical and digital banking presence so challenging?

Let's review a typical physical banking structure and the oldest written loan application on Denmark

Dykkermaskine 1837 Ansøgning om lån by Statens Arkiver - Danish State Archives
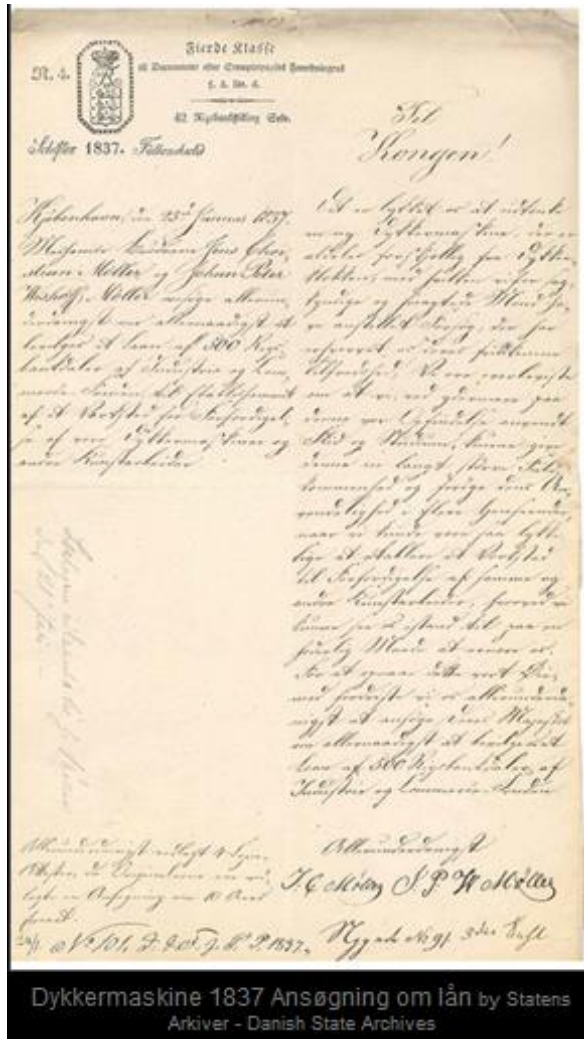
Fysisk bank distribution

Vertikal integration

So what?

What does that mean for the ability to have a strong customer journey

Vertical integration

Danske Bank har lukket 21 filialer i 2021
finanswatch.dk

CRM: Inside-Out

Complex CRM systems must manage the interaction between:

Distributionschannels

Product lines

Customer management systems

The challenge with the digitisation of the customer journey has changed the comptetiion both locally and internationally
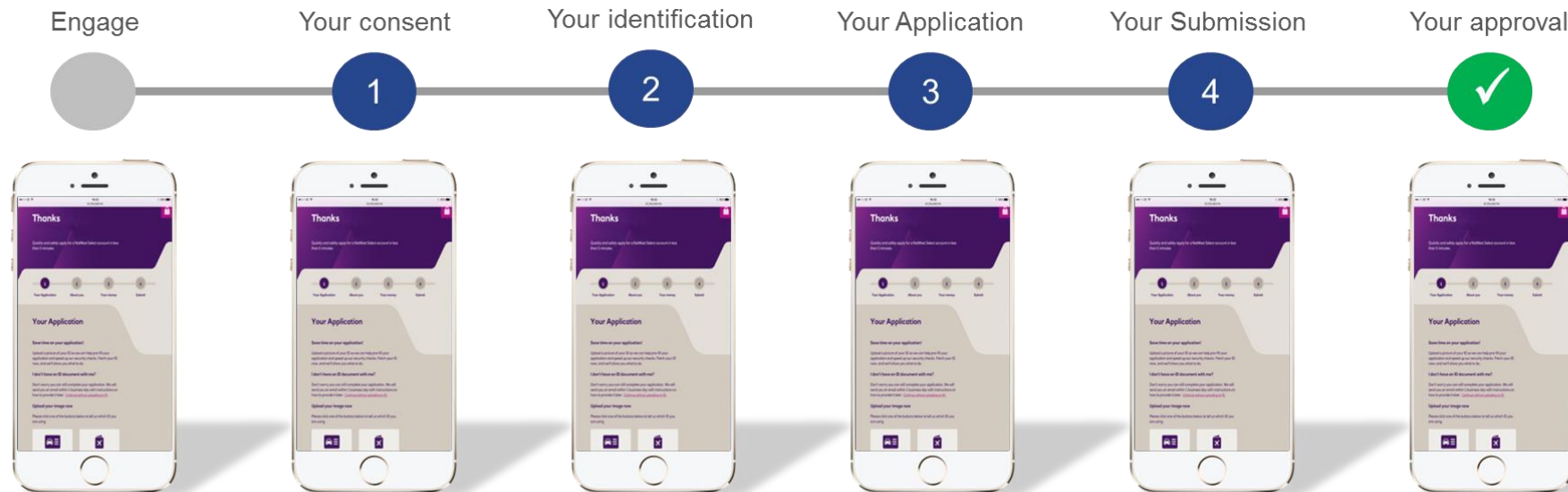
The market changes have happened gradually…

Berlingske 2013 – upon the news that Coop would launch Coop Bank

To ensure the best customer journey the data orchestration must be managed differently

Digital Bank - Horizontal integration

Customer Functionality designed by adopting an "outside in" approach

Engage — Your consent (1) — Your identification (2) — Your Application (3) — Your Submission (4) — Your approval (✓)
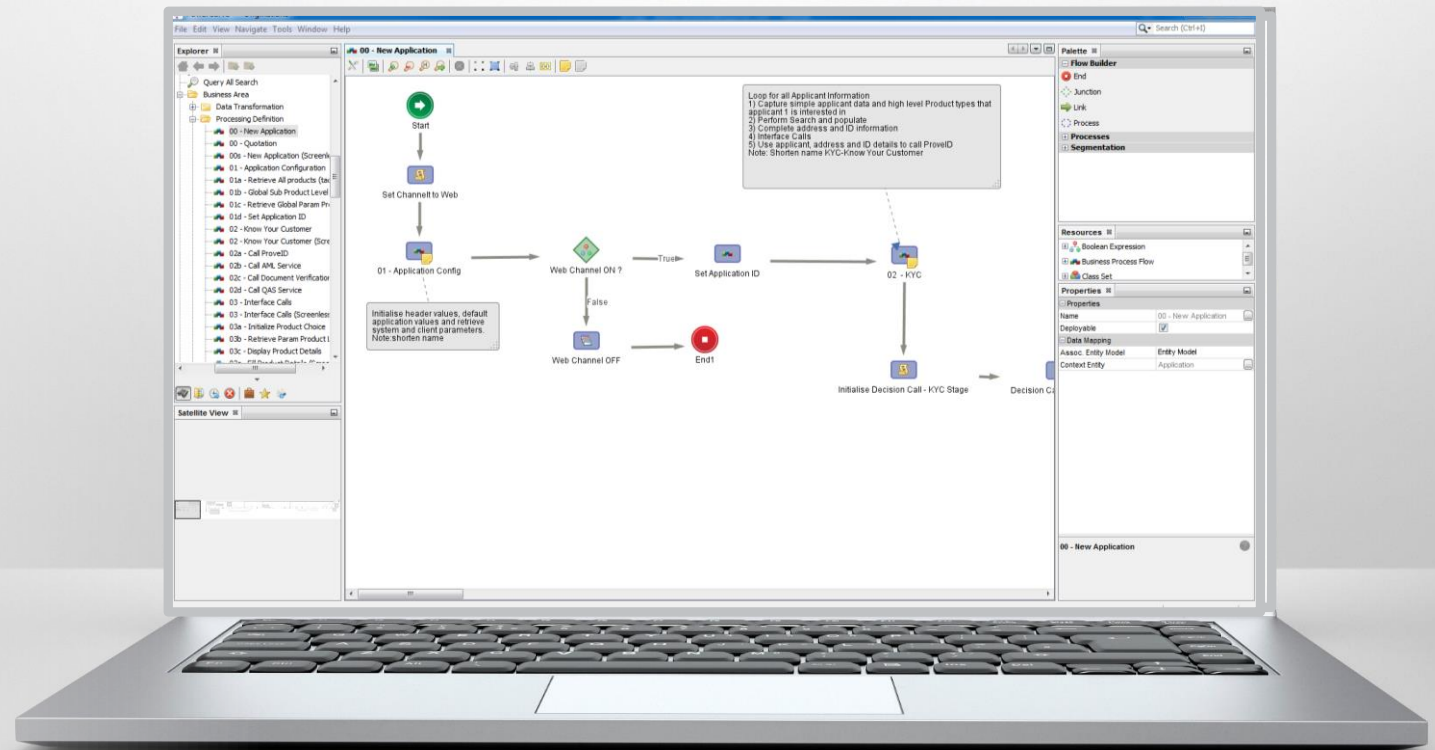
Data orchestration requires the right tools to develop and maintain interfaces

GUI is a key element to enable that now everything needs to be rocket science

Identify the right data sources

Subsequently they need to be integrated in a workflow process that is 100% synchronized with the customer journey

Remember also to use the data!

Which then requires the right tools to determine and define how to manage the information

Important that GUI is developed so analysts can use it

- Reduce IT dependency

- Credit strategies and segmentation can be managed effectively

- ML models can be integrated

Key takeaways

Outside - In
Data orchestration must be defined based on customer journey and not vice versa

One stop shop
Increasing demand after a central data hub / *One stop shop*

Use the data!
Effective data orchestrering requires an environment to exploit the value of data to ensure the best customer journey