



**SBIU: Data gedreven
duurzaamheid**



data-driven
sustainability

01 |

Algemeen

Erik Goossens

BDM Canary

30 jaar ervaring in BDM in software

Zowel in Corporate omgeving als voor Start-ups

Gepassioneerd door data gedreven inzicht en duurzaamheid



CANARY

Gestart in 2019 door Carl Seys & Pieter Feys
Gevestigd te Sint-Niklaas

Canary is een software-fabrikant.



01 |
Algemeen

Data-driven sustainability

ETYMOLOGY

An allusion to caged canaries (birds) that miners would carry down into the mine tunnels with them. If dangerous gases such as carbon monoxide collected in the mine, the gases would kill the canary before killing the miners, thus providing a warning to exit the tunnels immediately.

Wikipedia - 2019



02 |

Data

Data Readiness Audit

The screenshot displays the Canary Data Readiness Audit interface. The top dashboard shows the company's overall score of 52.86% based on 9/9 questions answered. Below this, two site-specific audits are listed: 'Site: Gentse Baan' with a 72% score (40/40 questions answered) and a data readiness of 72.25, and 'Site: Paris'. The bottom section provides a detailed view of the 'Site: Gentse Baan' audit, showing questions such as '1. Number of buildings on the site' (answered 1), '2. How is energy consumption measured on the site?' (answered with digital readable meter / site, building, HVAC, lighting, and circuit), and '3. What is the average frequency of the energy consumption measurement per circuit?' (answered Real-time).

The screenshot shows the 'Data Readiness Canary Company Baseline' report. The report header includes the Canary logo and the text 'data-driven sustainability'. The main content area displays the 'AUDIT REPORT' for 'Company Baseline' on 'Page 2 of 4'. The '1. SCORE' section shows a score of 52.86% and 9/9 questions answered. The '2. Forms' section contains two questions: '2.1. How many different sites does your company have?' (answered 1) and '2.2. Does your company operate in any of the following sectors or sell any of the following types of products?' (answered with a list of sectors including Agriculture, Basic Metal Production, Chemical Industries, Commerce, Construction, Education, Financial Services, Food / Drink, Forestry / Wood / Pulp and paper, Health Services, Hotels / Tourism / Catering, Mining (Coal / Other Mining), Mechanical and electrical engineering, Media / Culture / Graphical, Oil and gas production / Oil refining, Shipping / Ports / Fisheries / Inland waterways, Textiles / Clothing / Leather / Footwear, Transport (including civil aviation / railways / road transport), Transport equipment manufacturing, and Utilities (water / gas / electricity)).

02 |
Data

02

Data: IOT sensoren

Applications (Verticals)

Personal Devices	Lifestyle	Connected Home	Industries	Industrial Internet
Wearable Computing pebble cookoo fison im @dove GLASS RINGLY striiv APX MOTA M...	Sports so... biometrics ZEPP infoMotion swingstyle HAMMERHEAD	Automation Quirky Radiator Labs netatmo LEVITON SmartThings Ubi nest LIFX gecko smartthings OLUTRON	Retail bytelligence euclid STYLO GIBBAL boni R... BERCH	Robotics Double Robotics ALDERAR ROBOTX EMPIRE VEX ASS LIQUID ROBOTICS JBO
Fitness GARMIN non... amigo IFIT JAWBONE BASIS fitbit tomtom LINBEAM	Cooking Smart Die Scale ANOVA drop blossom iDevices THE ORANGE CHEF CO.	Monitoring lapka sense birdi BlueMaestro SUPERMECHANICAL leeo knet CUBESENSORS tado° ambient	Payment Square shopify PayPal Verifone LevelUp belly T...	Drones/Aerospace SKYCATCH spire Parrot Skybotix
Health LUMI HAPIfork soundstream SPIRE Withings QUANTUS Lively tenet hello AlivCor iHealth	Pets Whistle PetPace petfinder PetHub BISTRO hoytag PetChats Petcube Petnet gibi Petzillo	Security canary ring dropcam butterflye Locktron August SCHLAGE genie Kwikset	Healthcare VITALITY Medibinder Zibie iBeo navdy DELPHI	Green-Tech Bigbelly enlightened Smart Cenevo compology AMPY
Family FILIP... greatcall Securi... mimo	Toys KAROTZ MAKIES UBODLY	Tracker Chipolo linguet locca! TrackR Homey Control... LOWE'S muzzley zonooff	Automotive wavelink Beam kisa Trimble Robin Schneider dash WIZO OpenXC	3D Scan/Print MakerBot Formlabs FUEL3D
Garden plantlink BITPONICS radio EDYN Greenbox Koubachi	Music/Art/Video ROLI CACH GOPro	Hub Homey Control... LOWE'S muzzley zonooff	Infrastructure wavelink Beam kisa Trimble Robin Schneider dash WIZO OpenXC	Smart Grid GRIDNET eon Itron Trilliant
Asset Tracking ...			Agri-culture adapt-N	

Platforms & Enablement (Horizontals)

Connectivity/Dev Platforms	Software/Data Platforms	Open Source Platforms	Sensor Networks	Personal Interfaces	Security	Corporate
spark kynetx pinoccio iobridge ...	icontrol Yaler.net ...	webinos openHAB ...	SAFECAST placemeter MotionLoft	wit.ai LEAP gestigon speech ...	inside SafeNet utimaco escrypt gemalto BASTILLE NETWORK MOCANA	amazon LG intel htc PHILIPS IBM SAMSUNG Google ...

Building Blocks

Protocols	M2M Networks	Portable WiFi	Telecom	M2M
Bluetooth Weaved MQTT WI FI ZigBee omo waves enModus HART 2G 3G 4G LTE CoAP 6LoWPAN LWM2M BITXmI	KORE ...	Open Garden GOODSPEED ...	at&t boostmobile Verizon T-Mobile ...	...
Cloud	Mobile	Processors/Sensors	Parts/Kits	Services
Google Cloud Platform amazon redhat ...	iOS Android ...	...	littleBits ...	...
Funding	Distribution	Incubators	Wearable World	Wearable World
KICKSTARTER indiegogo ...	angelcam ...	...	...	...

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02 |

Data: FM,IWMS,BMS,CAFM,EAMS

sage

ORACLE®

UNIT4
AGRESSO

SAP®

IRIS

blackbaud®



↑northgate
INFORMATION SOLUTIONS

Advanced
Business Solutions

pegasus

EPICOR®

infor

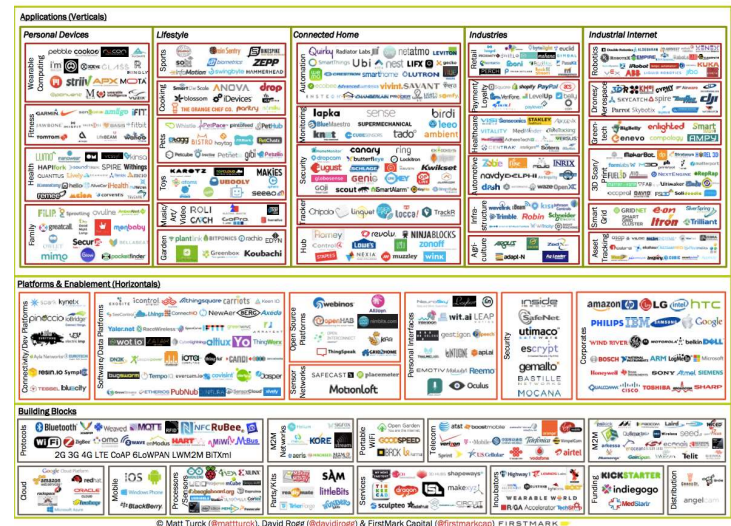
02 |

Data: ERP



02

Data: HR



02

Data: overview

03 |

Sustainability



03 | Sustainability

04

Data driven Sustainability



Datasources



Need for data



04

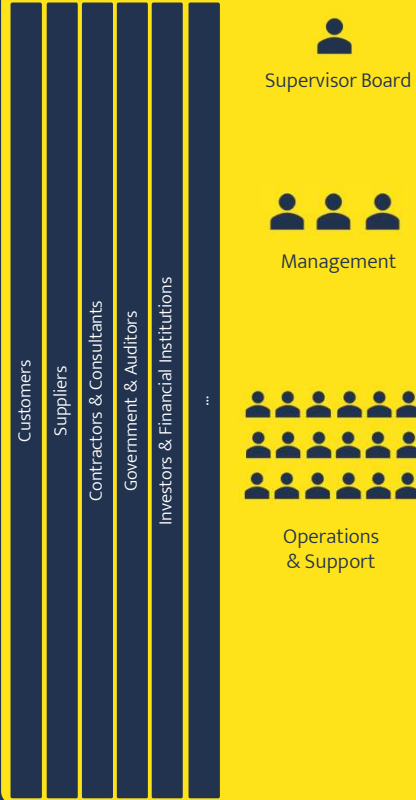
Data Driven Sustainability

04

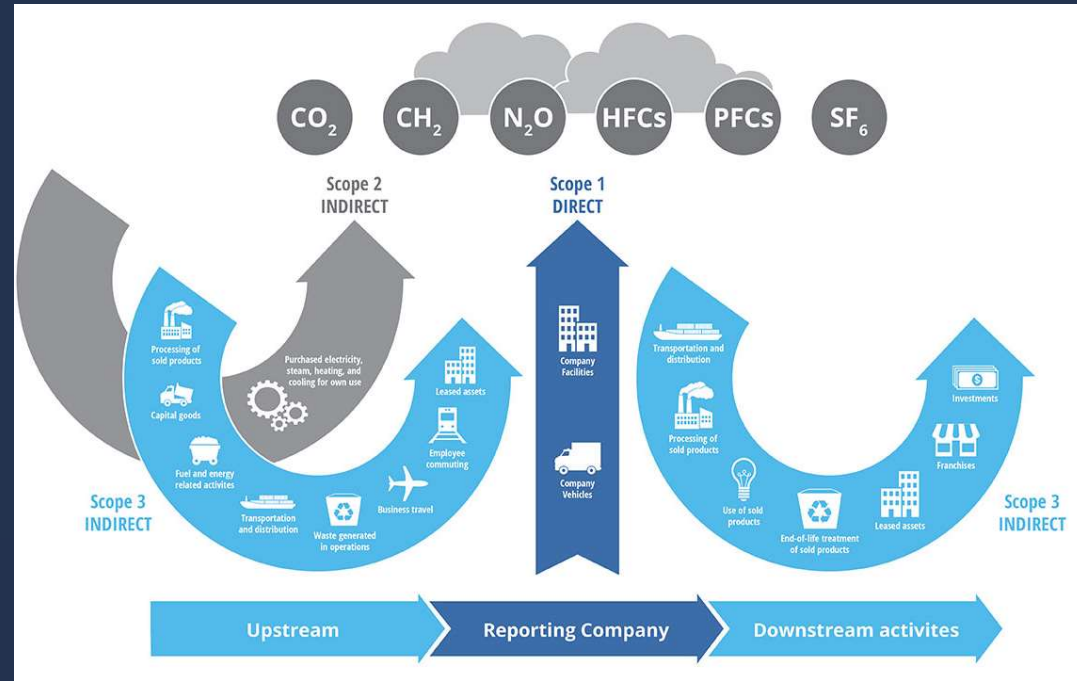
Data Driven Sustainability



USERS



GHG



CANARY

ENRICHED DATALAKE

04

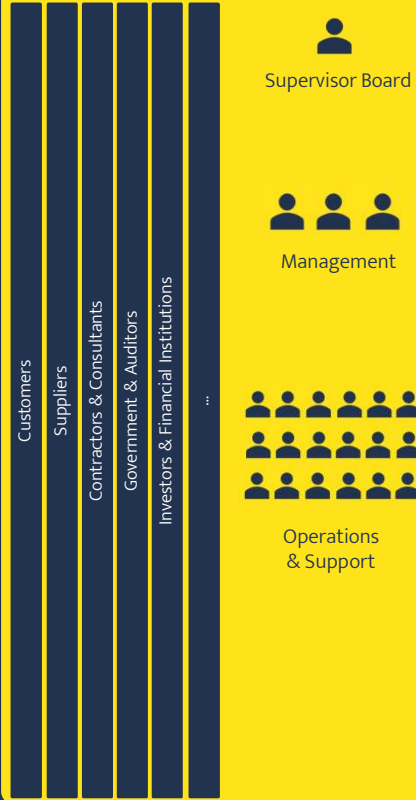
Data Driven Sustainability

04

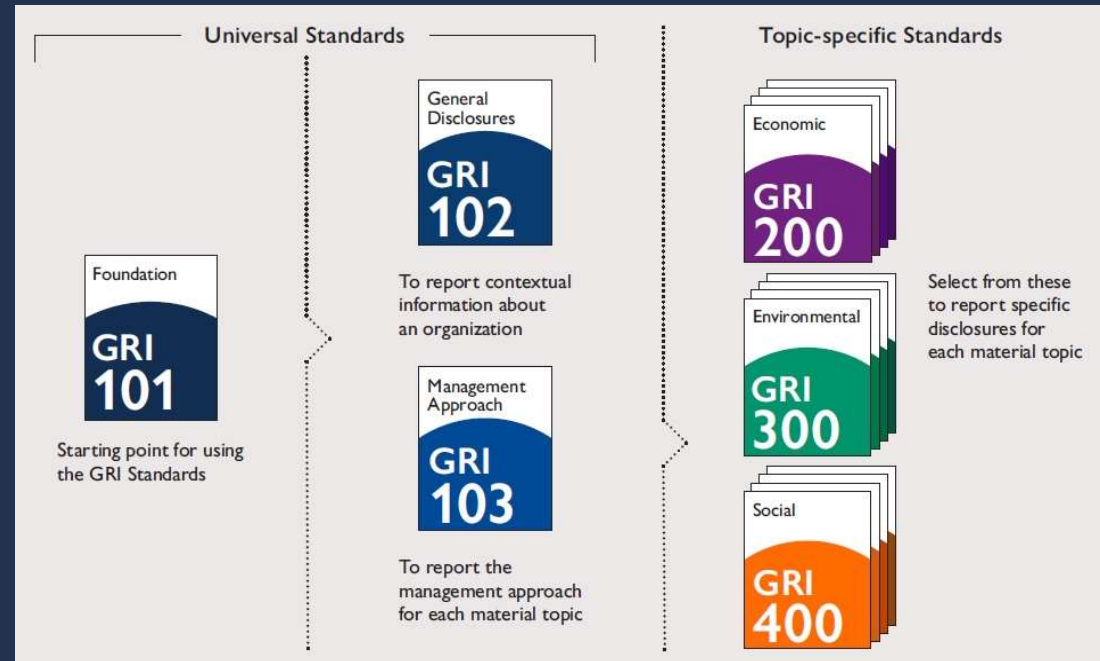
Data Driven Sustainability



USERS



GRI



CANARY

ENRICHED DATALAKE

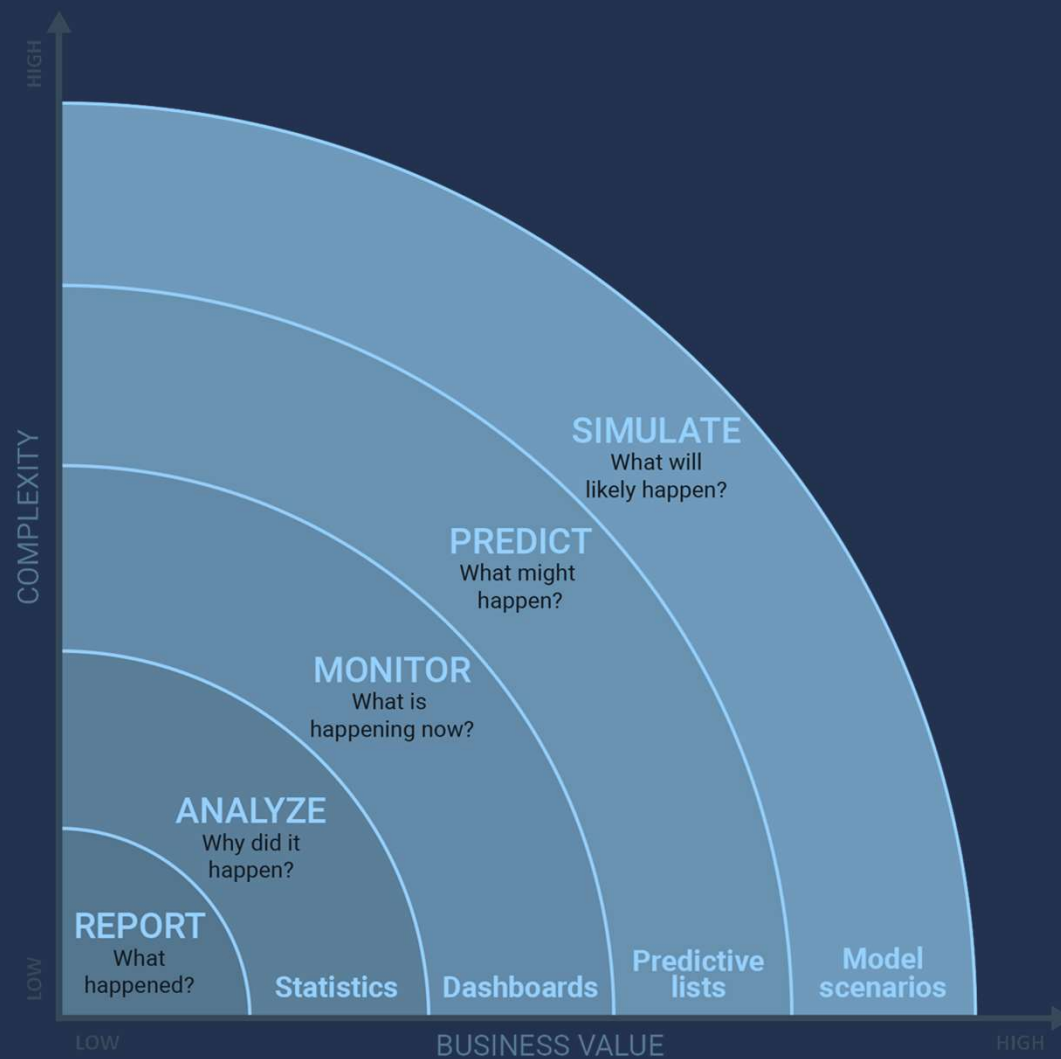
04

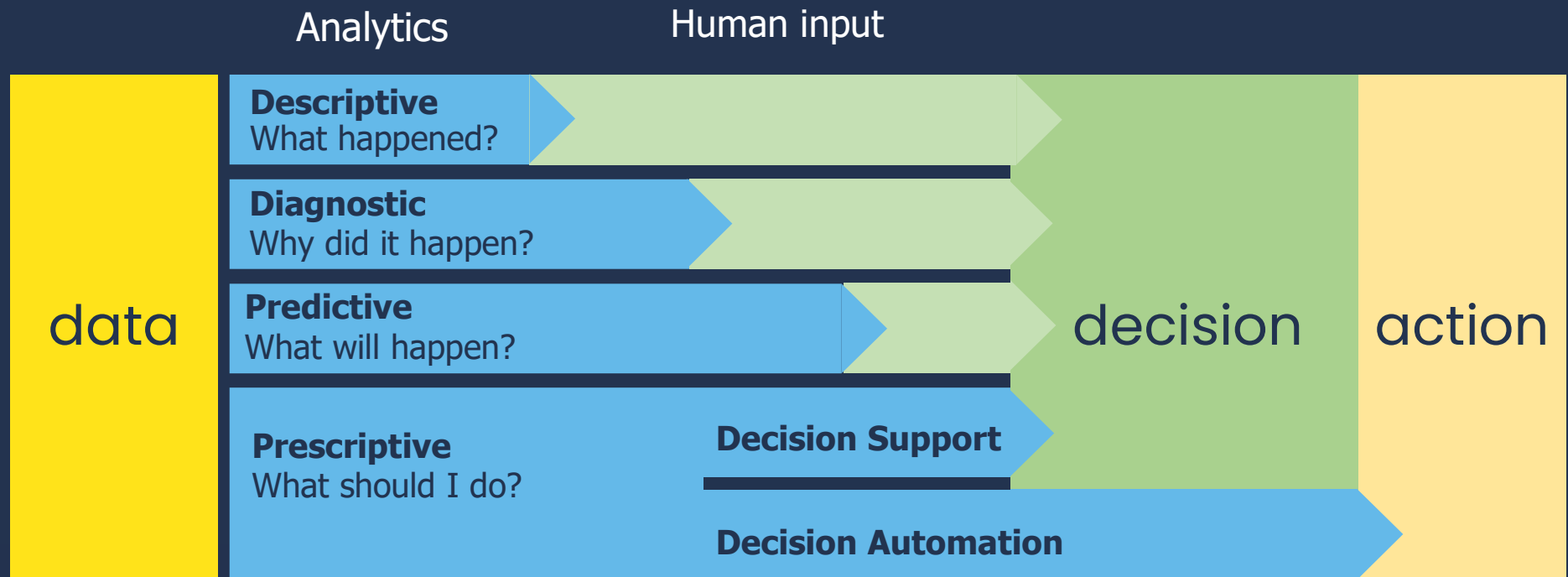
Data Driven Sustainability

05

Platform

05 | Platform





Source: Gartner (May 2015)

CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Analyse

Monitor

Alert

Predict

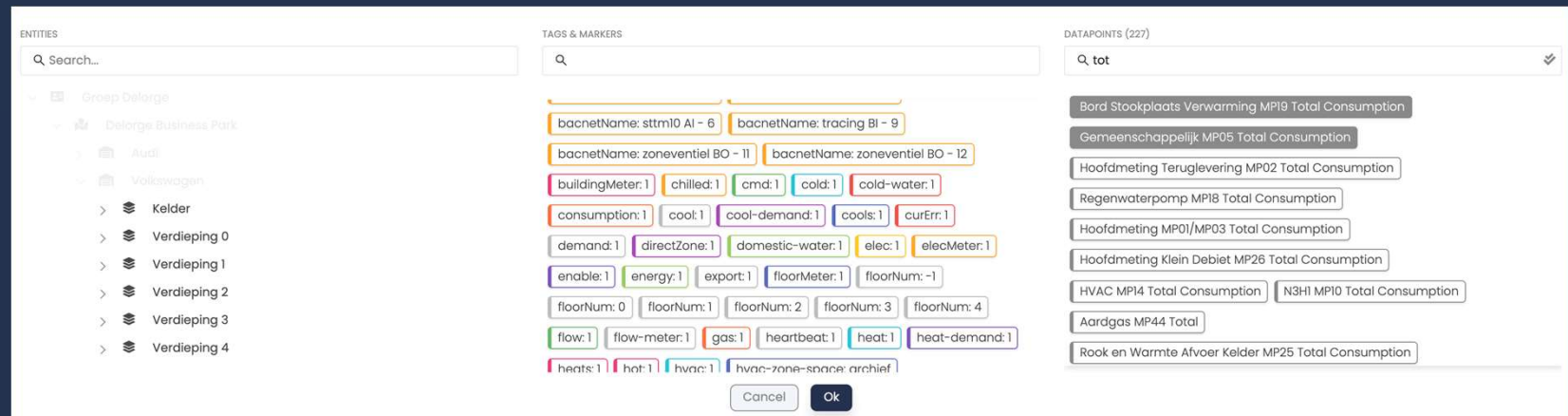
Report

05 |
Platform

Oplossing: **Generic Data Handling**

Tags & Markers are the key for:

- Generic Rules & Flows
- Generic Widgets
- Fast & Flexible User & Role management
- Easy Dashboard configuration



05

Platform: enrich

CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Analyse

Monitor

Alert

Predict

Report

05 |
Platform

Create your high level dashboards



05
monitor

CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Analyse

Monitor

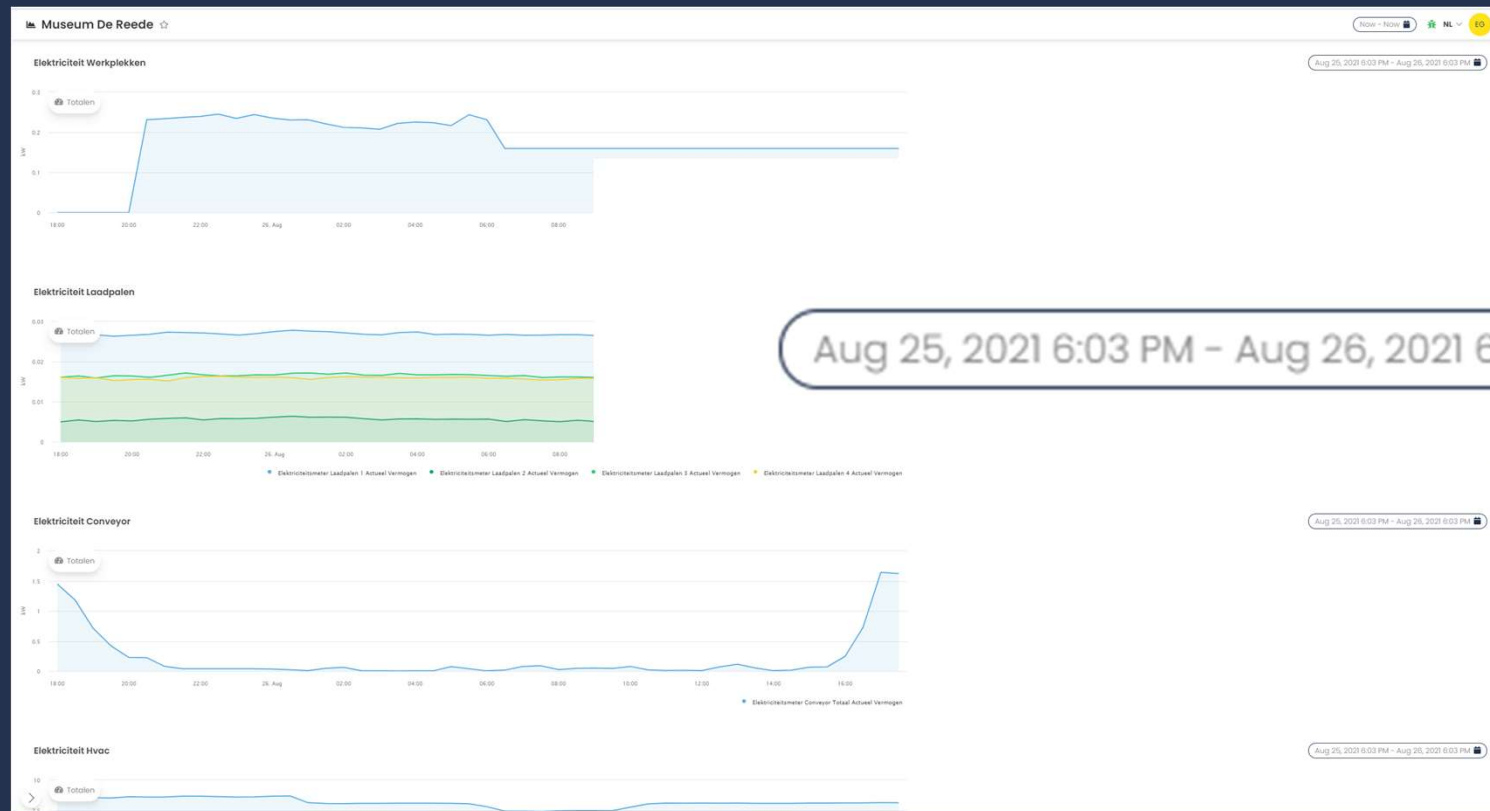
Alert

Analyse

Report

05 |
Platform

Drill down to details & zoom in to anomalies



CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Predict

Monitor

Alert

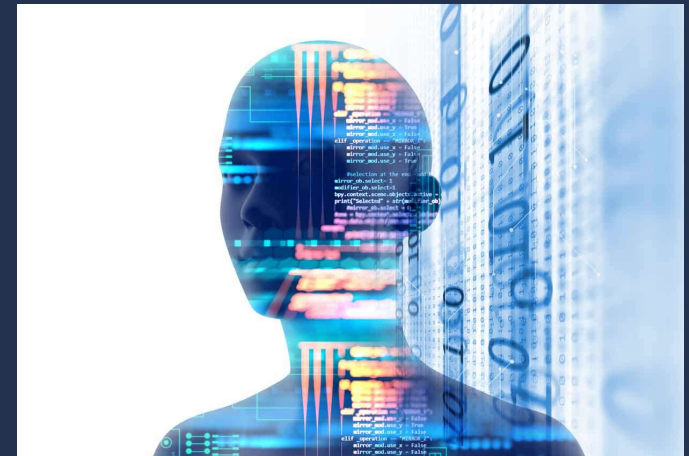
Predict

Report

05 |
Platform

Why is **Data Quality** Important?

The more good data a Machine Learning algorithm has, the faster it can produce results, and the better those results will be.



CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Analyse

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Predict

Report

05 |
Platform

Rule & Flow Management

100% Generic datapoints + automatic instance creation

The screenshot displays the 'Settings' page for a rule named 'co2LevelCheck'. The interface is divided into several sections:

- Nodes:** A sidebar on the left containing 'Input' and 'logic' sections. The 'Input' section has a 'MAIN' toggle and options for 'TYPE', 'DATAPoint TAGS', 'ROOM TAGS', 'FLOOR TAGS', and 'BUILDING TAGS'. The 'logic' section contains an 'IF' statement: 'IF (value in alarmValues) THEN → CRITICAL OTHERWISE → OK'.
- co2LevelCheck:** The main configuration area. It features a 'co2value' node with a 'MAIN' toggle and a 'value' input field. Below this, there are 'DATAPoint TAGS' (co2:1, sensor:1, chilled:1) and 'ROOM TAGS', 'FLOOR TAGS', and 'BUILDING TAGS' sections.
- co2LevelCheck logic:** A logic block containing an 'IF' statement: 'IF (co2value < 100) THEN → 70 ELSE IF (co2value < 900)'.
- Entities:** A search bar and a list of entities under 'Museum De Reede' and 'Antwerpen'.
- TAGS & MARKERS:** A search bar and a list of tags and markers, including 'chilled:1', 'ahu:1', 'ahuReference: AHU001', 'ahuReference: AHU002', 'ahuReference: NieuwGedeelte', 'air:1', 'airHandlingEquip:1', 'config:1', 'cools:1', 'dehumidifies:1', 'entering:1', 'floorNum: -1', 'floorNum: 1', 'flow:1', 'heatpump:1', and 'heatPump:1'.

05 | Platform: alert

CANARY platform

Enrich

Predict

Monitor

Alert

Analyse

Report

05 |
Platform

CANARY platform

Enrich

Analyse

Monitor

Alert

Predict

Report

05 |
Platform

Report generator

The screenshot displays the 'Duurzaamheid' (Sustainability) report generator interface. The interface is in Dutch and features a sidebar on the left with navigation options, a main content area with a search bar and a list of GRI standards, and a right-hand panel for generating a report.

Left Sidebar:

- Logo: A stylized 'C' inside a circle.
- Language: NL (Dutch).
- Report Type: EG (Environmental, Governance, Social).
- Search: GRI
- Table of GRI Standards:

Name
General
> GRI 100: Universal Standards
> GRI 200: Economic Topics
> GRI 300: Environmental Topics
> GRI 400: Social Topics

Main Content Area:

GRI General

The GRI Standards represent global best practice for reporting publicly on a range of economic, environmental and social impacts. Sustainability reporting based on the Standards provides information about an organization's positive or negative contributions to sustainable development.

The modular, interrelated GRI Standards are designed primarily to be used as a set, to prepare a sustainability report focused on material topics. The three universal Standards are used by every organization that prepares a sustainability report. An organization also chooses from the topic-specific Standards to report on its material topics – economic, environmental or social.

Preparing a report in accordance with the GRI Standards provides an inclusive picture of an organization's material topics, their related impacts, and how they are managed. An organization can also use all or part of selected GRI Standards to report specific information.

Generate report

Range: 2021-01-01 → 2021-12-31

Resolution: Month

Trends: ☒

Benchmark: ☒

Start value: ☒

Transparency detail: ☒

Conversion factors: ☒

Generate PDF Generate CSV

05

Platform: report



GOALS

- Eenvoudig in gebruik en intuïtief
- Uitgebreid gebruikers- en rechtenbeheer
- Uitgebreid 'rule & flow' beheer (Monitoring & alerting)
- Flexibele rapportage naar bestaande standaarden: Bilan Carbone/ ESG / IIRC / ISO 14064 / GHG / GRI / NFRD / SASB / SDG / TAXONOMY & growing
- Real-time
- Open API
- Secure Connection
- AI & Machine Learning
- Maximaal gebruik van bestaande sensoren en systemen (BMS / EMS / Finance / ERP / ...)
- Eenvoudig schaalbaar
- Data blijft eigendom van de klant

03 |

Platform: goals

ENRICHED DATALAKE

CATCH

API

USER RIGHTS

DATA ATTRIBUTES

DATA TYPES

DATA VALUES

Tags & Markers



Assets

Vehicles

Persona

Energy Contracts

Varia

kWh
m3/h
Km
liter/100km
€ / Month
Units / minute
mmBTU / Ton
CO2e / mmBTU
...

CANARY

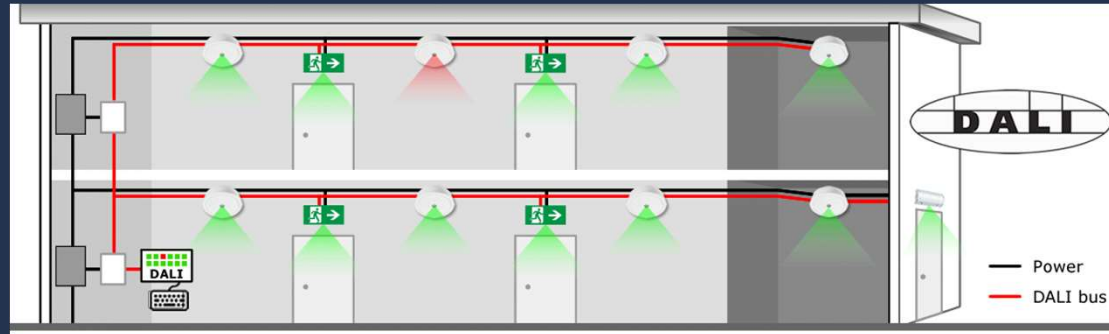
03 |
Platform

06 |

Use cases

Use Case #01

Monitor Emergency Lights



Use Case #02

Monitor Sprinkler

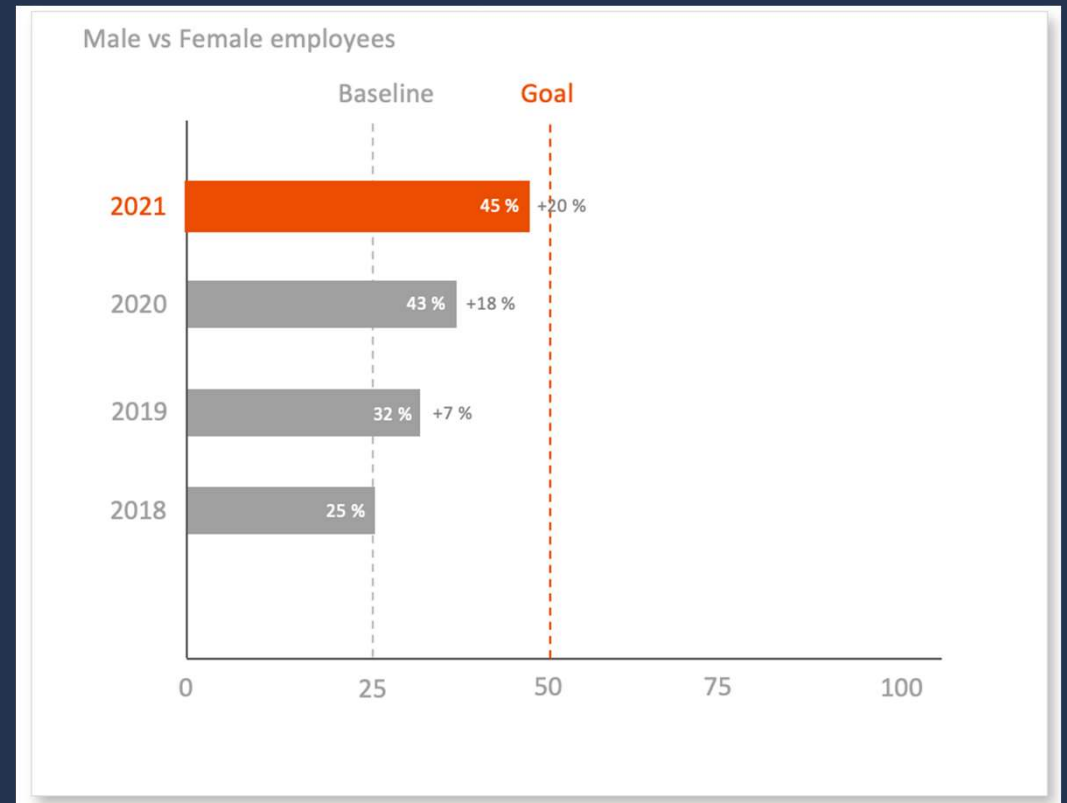
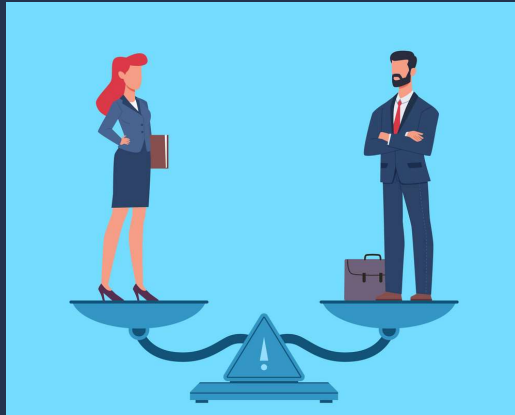


Begin	End	Name	Tag	Last value	Duration	In use	Error	Alarm
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	fireAlarm	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	faultLatched	0	Current value	●	●	●
23/08/21 02:00:00		Fire Alarm Control Pan...	faultLatched	0	Current value	●	●	●



Use Case #03

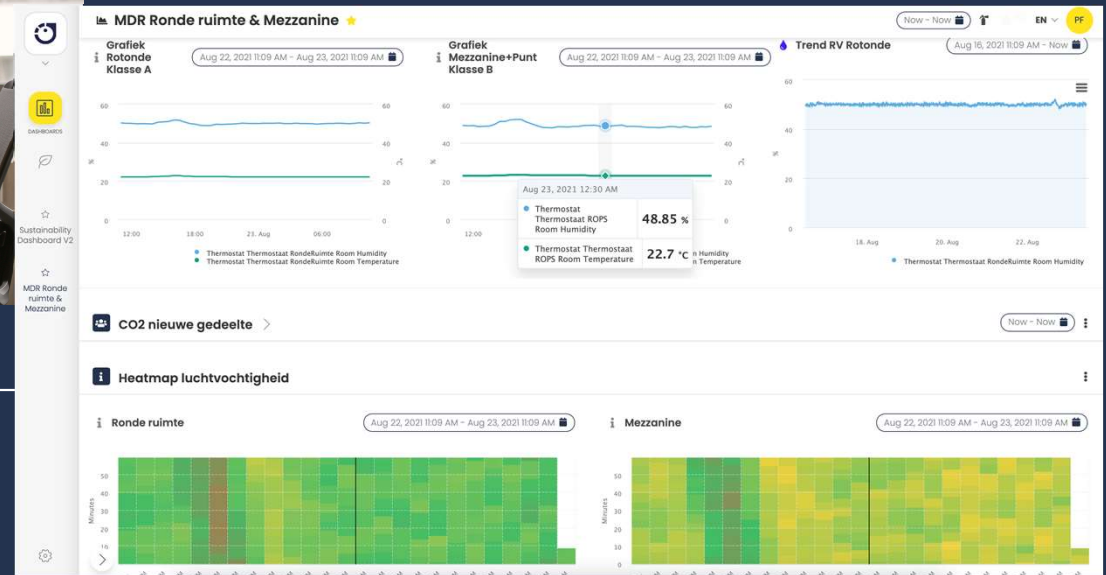
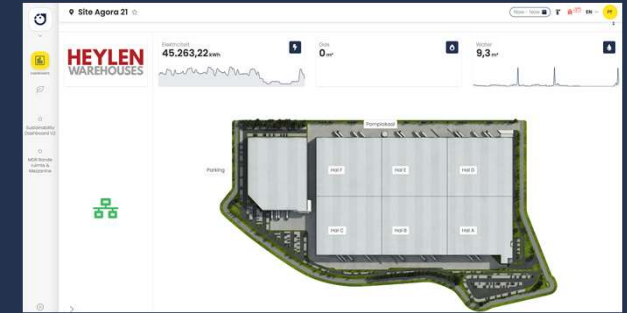
Monitor Gender Equality



06 |
Use case #03

Use Case #04

Monitor Work Environment



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07 |

Data-driven sustainability

Contact Detail