Sustainable Buildings Overview

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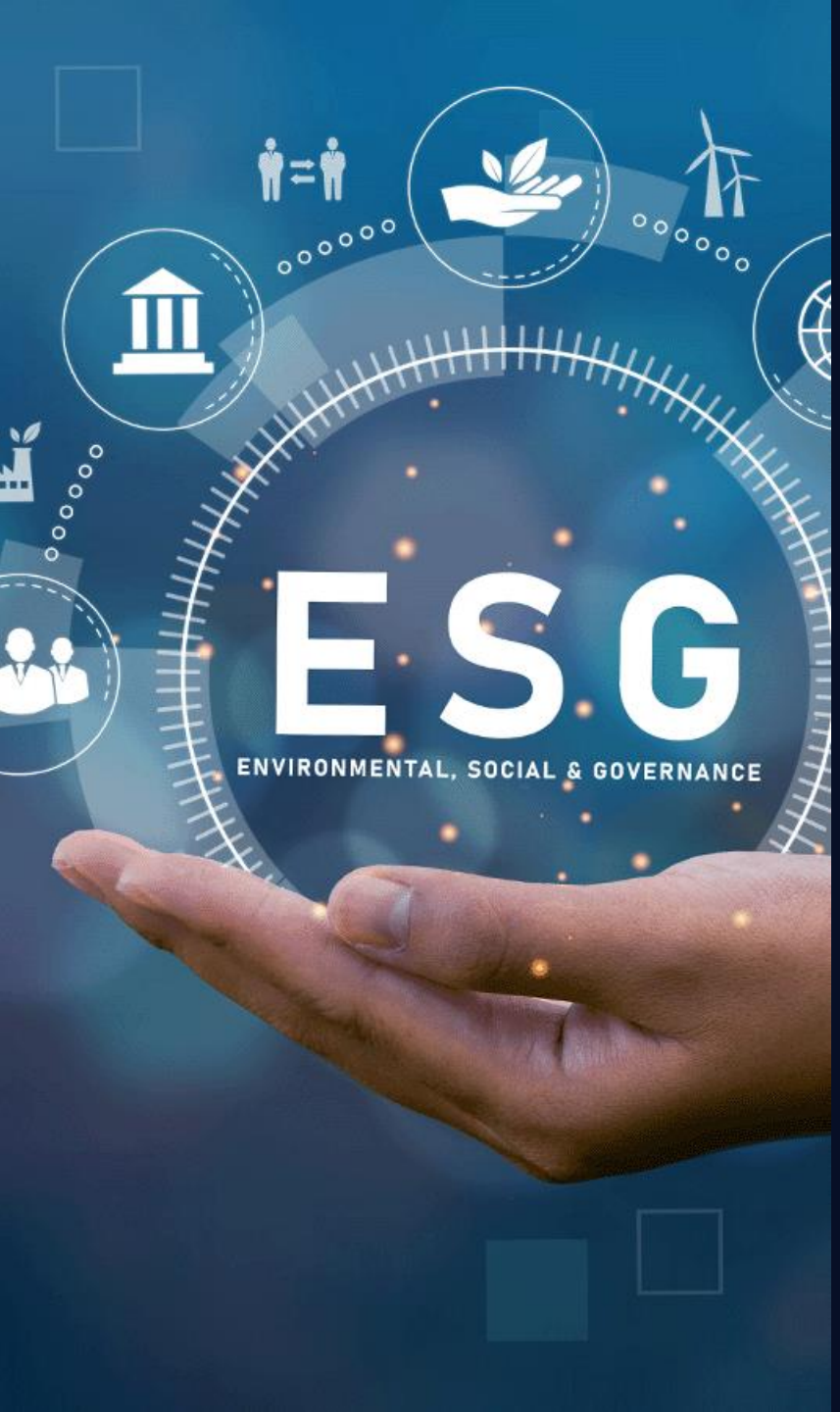

Current challenges

ESG Reporting on building portfolio

- *Required for* the energy consumption of a company's total building portfolio: Manufacturing sites, offices, warehouses etc.

No comprehensive platforms

- No comprehensive platforms to get insights (Facility Management, EMS, BIM etc. is all separated in platforms)

Data Quality and Management is low

- Data is maintained and collected both locally and globally: **No unified format and granularity**
- Excel-spreadsheets are the main source = Manual work

Data Availability

- Countries have different levels of digitalization and therefore also different access to getting e.g., utility data

No foundation for improvement

- Even when the ESG reporting is successfully done, the framework does not support insights for improving upon the KPI's

Solution overview

Design & Summary

Momenttum/ Sustainable Buildings Platform

Offering

Sustainable Buildings

Our Sustainable Buildings offering uses advanced technologies to generate insights and propose actions to proactively reduce energy and water usage and to ensure employee health and well-being.

Business need

According to the World Economic Forum, Buildings are responsible for 40% of global energy consumption and 33% of greenhouse gas emissions. Making them more sustainable is key to successfully tackle climate change.

Further, the working environment we create in company buildings contributes directly to the achievement of sustainability goals in employee health, safety and wellbeing.

Compliance to working environment rules & regulations also needs to be ensured.

Solution

Our platform captures and manage critical events from sensors, systems or applications within a building or site.

It uses a combination of various sensor and data-sources, such as CO2, LoRa-WAN, Edge-devices, Meshlium scanners, previous studies and reports.

Our platform extends and integrates with SAP applications and processes to leverage data to improve building management for increasing environmental performance, employee experience, safety, well-being and productivity.

Outcome

Transparency, trends and predictions on facility usage, people flows, conditions in rooms, equipment and asset statuses.

Data-driven analytics for need/placement of infrastructure, maintenance activities and energy management.

Automatic regulation of ventilation based on carbon dioxide concentrations.

Adjustment of climate and lighting systems to save energy when the space is empty.

People ‘nudging’ to increase use of available and pre-heated facilities, parking lots etc.

NTT DATA

Solution Design

Challenge(s)

- *ESG-reporting* on the energy consumption of a company's total building portfolio (Manufacturing sites, offices, warehouses etc.)
- No comprehensive platforms to get insights (Facility Management, EMS, BIM etc. is all separated in platforms)
- Need for connecting public data and device data to context for reporting

Use case

- Collect all information on energy consumption and consolidate it with related data (External, sensor etc.)
- Analytics to help facility managers operating buildings better
- Provide a holistic overview on different levels for ESG-reporting
- Provide basis for energy optimization
- Heighten awareness to save energy

Data

- Energy Meters such as Electricity, Water, Heating
- Booking/Meeting calendars
- Weather data
- Activity monitoring:
  - Locking system
  - People Counter
  - Occupancy Sensors
- Indoor Climate sensors
- Charging stations/points
- Solar system

Outcome

- Data for ESG-reporting in SAP
- Optimization reports on the platform


NTT DATA
The Data Platform
Momenttum.ai
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NTT DATA has created a managed cloud computing service for **advanced usecases**.

The platform **connects** people and organisations with data and information – creating trusted data value chains

NTT DATA

Microsoft Azure – momenttum.ai

Landing Zone

API / Import Export

Storage

Data Science ML Ops

Language Models

Analytics Platform

Forecast

Monitoring

Use Cases

Analytics

Communication

CyberSecOps

Data Catalogue

Authentication & Authorization

Dev Ops and CI/CD

Case-study

Reference Slide | GovTech Midtjylland | Denmark | Public Sector

Sustainable Schools

Business need

- GovTech Midtjylland wanted to explore how their members can use AI technology to reduce costs and CO2 emissions.
- They needed a solution that could combine different kinds of data and translate it into specific optimization points.
- As the resources and level of digitalization in the municipalities differ, the solution had to be scalable to meet different starting points.

Outcome

"*The tool clearly illustrates the potential savings, proving the necessity of optimizing*" said Henrik Bojsen (Team Leader in the Municipality of Syddjurs)

Actionable Insights
With a platform that shows potential savings, energy consultants gain data that can be directly converted into actions. This means that the schools can go from basing decisions on an intuitive understanding of their data, to a forecasting based on granular data

Solution

A practical and scalable platform ('Momenttum')
NTT DATA used their 'Momenttum' platform and built dashboards that processed the inputs from the booking system, facility management, heating and power consumption, the weather, and IoT sensors in all classrooms. The readings and calculations were compiled and updated daily in an easy-to-use dashboard.

Granular Analytics
The schools' heating and ventilation systems are time-controlled and are highly dependent on accurate room bookings. By tracking attendance for room bookings using CO2 sensors, 'passive' energy consumption (energy unnecessarily used) could be identified

- **Proven ROI** - if it were to be utilized nationally in its current form, all schools would be able to save 34,966 DKK on average*. Altogether, this equals 37 million DKK or 1 million kg of CO2e reductions as per a potential assessment from 2023**.
- **Insights & Benchmarking** - A platform where municipalities can gain insight into their energy consumption and benchmark against historic data.
- **Predictive Analytics** - Based on the forecasting data, schools can prioritize efforts to maximize energy reductions.
- **Energy Optimization** - IoT sensors provide an accurate view of how room bookings are used outside of school hours, forming a basis for optimization.

Project Delivery: Nordic Region

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