



The Sustainability Imperative

A 5-minute look into why sustainability matters for the business and how analytics with SAP can achieve it

02	Abstract
03	Sustainability Drivers
07	Sustainability Analytics
10	Big Data Management
16	Conclusion
17	References



Abstract

The purpose of this paper is to promote an understanding of how businesses can close the gap between vision and action to make sustainability a core business process, and how the SAP Business Technology Platform's data and analytics solutions can ease that journey.

In this paper, a sustainable business is defined as one that has both the vision and ability to achieve the Triple Bottom Line of economic prosperity, social equity, and environmental stewardship.

Aside from the need to create lasting value, increased stakeholder pressure has also been urging companies to make a change. Hence, this paper overviews the process of sustainably reinventing your business, with an emphasis on analytics as the key pillar that provides actionable insight to sustainably transform your operations.



Sustainability Drivers

Why and how working towards a sustainable business goes beyond saving the planet



The long-term benefits of sustainability

Sustainability is a business approach to create long-term value. The act of making sustainability a core business process promotes sustainable growth, sustainable processes, and adheres to sustainability compliance – all of which are accompanied by a holistic range of attainable benefits for organisations.



Sustainable Growth

- Provides top management with a holistic view into data, processes, and industry specific drivers, differentiators, regulations and best practices to internally adopt
- Increases revenue by capturing new market shares through leveraging sustainable goods and purpose-driven ethics as competitive advantages
- Keeps investors interested through notable ESG ratings
- Minimises cost by maximising resource efficiency



Sustainable Processes

- Ensures corporate social responsibility across supply chain
- Warrants end-to-end solution portfolio to assess and reduce carbon footprint, address circular business models, and reduce waste
- Increases efficiency by embedding sustainability to business processes



Sustainability Compliance

- Protects brand and mitigates risks
- Ensures deep transparency into financial and non-financial data where requested by regulatory authorities
- Addresses regulations, taxation, and sanctions proactively
- Ensures integrated, auditable, and real-time reporting



Influential stakeholders as key motivators

In recent years, an increasing proportion of companies have been committed to change, with 90 percent of CEOs stating that sustainability is a critical part of their business success. However, few have been able to materialise their objectives, with the bulk of shortcomings attributed to the lack of specific, measurable, achievable, relevant, and timely action plans.

In order to devise an effective sustainable business strategy, it is useful to first recognise motivations behind working towards a sustainable business, followed by translating those motivations into corresponding success metrics. Periodic evaluations of the business' progress against this checklist of key success indicators enhances the fulfilment likelihood of well-intentioned sustainability promises.

Some of the key motivations can be mapped to the most significant stakeholders of a business.



The Eco-Wakened **CUSTOMER**

Customers who factor sustainability into their decision-making process



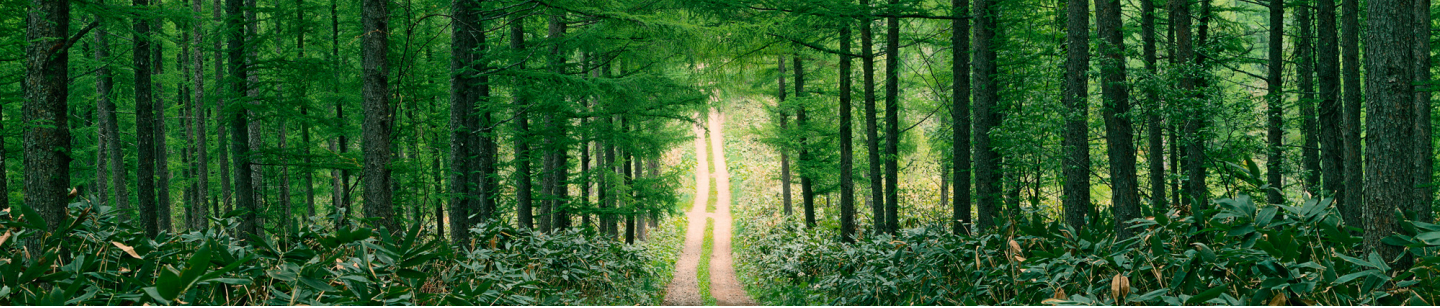
The Value-Driven **EMPLOYEE**

Employees who prioritise personal values when selecting a company



The Regulatory **AUTHORITIES**

Regulatory and/or external influential bodies that govern business operations



The Eco-Wakened Customer

Consumers have displayed a growing shift in support for sustainable businesses. A global report from The Economist Intelligence Unit shows a staggering 71 percent increase in online searches for sustainable goods globally over the past 5 years – an indication that it is no longer acceptable to neglect sustainability in business. Coined as the “eco-wakening”, this phenomenon has not been unique to affluent countries alone, but also in developing and emerging economies, further emphasising the ubiquity and significance of the trend.



The Value-Driven Employee

A key pillar of the Triple Bottom Line theory is social equity – Businesses have the social responsibility to focus on the well-being of their employees, treating them with respect and egalitarianism. The Great Resignation that began in early 2021 has seen 2.4 million women leaving the labour force compared to 1.8 million men, highlighting both the presence of systemic inequities where minorities face more challenges than non-diverse counterparts, and the rising trend of people collectively becoming more assertive in taking ownership of their situations. This self-aware and bold disposition is fuelled by a surging sense of personal value where people focus on introspection and soul-searching, consequently leading them to prioritise what makes them truly happy. And in the majority of cases, the derivation of happiness minimally involves being a part of a company that respects them.



Governments, Investors, and Stock Exchanges

Businesses co-exist in an eco-system where external influential players could interrupt operations and accelerate their downfall. In the context of sustainability, governments are increasingly working to enforce sustainability reporting standards in efforts to conquer climate change. Investors are growing progressively favourable of companies that adhere to sustainability practices, with the concept of making Socially Responsible Investments (SRI) on the rise. Growing numbers of stock exchanges now require companies to publicly disclose their sustainability impact. With these external pressures imminent, businesses are near obligated to change – and change fast.

An aerial photograph of a wastewater treatment plant. The image is dominated by a large central circular tank filled with greenish water. Surrounding this central tank are many smaller, identical circular tanks, also filled with greenish water. Each tank has a concrete or metal rim and a central structure with a ladder or walkway. The overall pattern is a repeating circular motif, creating a strong visual rhythm. The lighting is somewhat dim, giving the image a moody, industrial feel.

The Role of Analytics

Leveraging big data and analytics to gain insights on making sustainability a core business process



The steps to become a sustainable enterprise

Once the overall strategy is established, comprehension of the steps to make sustainability a core business process follows. SAP establishes five essential actions to sustainably reinvent businesses, industries, and economies.



1. Establish a sustainable business strategy

- Ensure sustainability is central to the overall business strategy
- All corporate functions contribute
- Measure progress and report annual sustainability outcomes with equal level of importance as financials

2. Embed sustainable business data into processes and networks

- Use sustainability data within business processes in order to make sustainable and profitable decisions while measuring performance
- Share sustainability performance data (Includes calculated carbon emissions, water use, recyclability, or labour information) with suppliers, industry associations, regulators, and non-governmental organisations



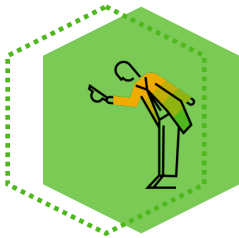
3. Manage carbon and climate exposure throughout the business

- Reduce financial and reputational risks by accounting for and managing climate-related emissions across value chain, down to the individual product and service level



4. Embrace circularity and become regenerative

- Use operating principles to avoid, reduce, reuse, recycle, and reclaim materials
- Minimise waste and accelerate adoption of circular economy processes
- Go beyond doing “less bad” to adopt approaches that do “more good”



5. Prioritise people across your value chain

- Enhance social sustainability by respecting your workforce diversity, safety, and human rights
- Develop learning and growth opportunities
- Leverage power of corporate purchasing

It is important to note that data is the key element powering all five steps.

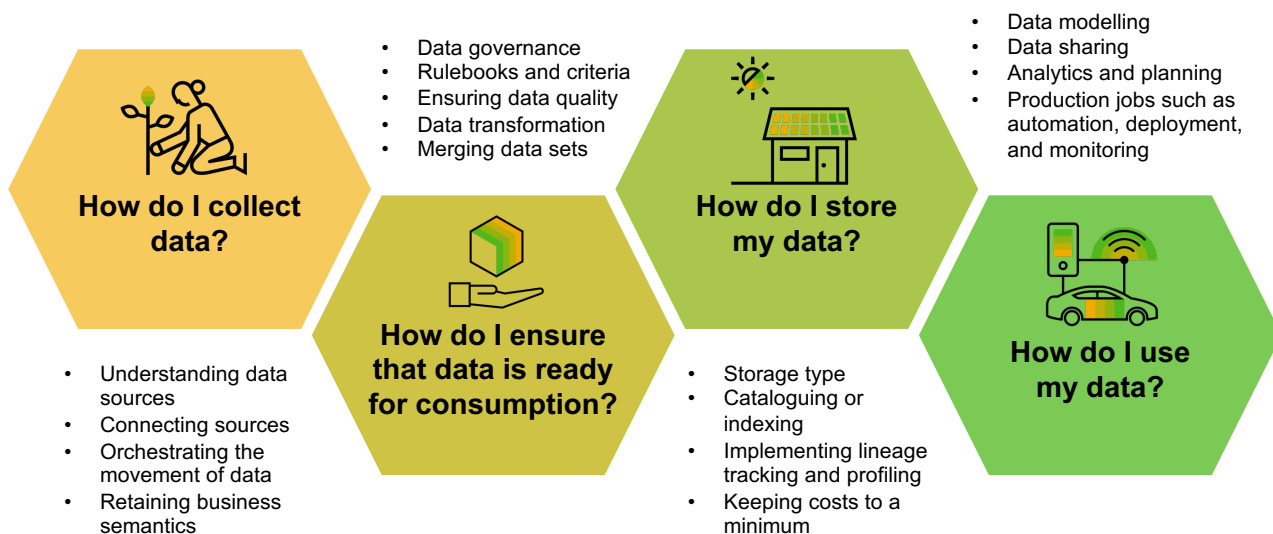
The saying “you can’t manage what you can’t measure” applies to revenue, profits, and sustainability.



Managing big data for comprehensive insights

SAP Insights Research shows that 79 percent of companies report being dissatisfied with the quality of the data they collect about environmental sustainability. Organisations often face complex and unintegrated data landscapes, resulting in siloed and disconnected data that lack context and semantics. The current era of big data proves challenging to accomplish foundational data and analytics tasks such as getting a unified and governed view of data due to the complexity and variation in data sources across the company's value chain.

Given that handling big data is multi-faceted, with the difficulty increasing exponentially to the amount of transactions associated with an organisation, modularising the big data management process could break down the complexity and aid in reducing the overall convolution faced per individual or team.



While the above provides a big picture perspective of the big data management process, the capabilities required for each phase, and even the phases themselves, are non-exhaustive and context-dependent. To derive the most fitted processes, corresponding tools, and capabilities required for the company's sustainable business strategy, top management will need to begin working from the predefined goals of the strategy.

A photograph of a wooden boardwalk or bridge winding through a dense, lush green forest. The boardwalk is made of dark wooden planks and curves gently through a stream. The surrounding vegetation is thick with various green plants, ferns, and trees, creating a serene and natural atmosphere. The lighting is soft, suggesting a shaded forest environment.

Big Data Management

SAP Business Technology Platform's data and analytics solutions
and sustainability use cases



Data Collection

A main contender for the toughest part of sustainability strategies and reporting goes to properly securing the right data. Utilising the example of collecting the three scopes of carbon emissions data, companies are recommended to report on direct emissions, indirect emissions stemming from utilities, and external sources that encompass all other indirect emission sources.

Scope three often covers an incredibly broad range of sources that are difficult to track and account for due to the complexity of the data landscapes involved, but currently comprise 70 percent of any company's carbon footprint.

How SAP Data Intelligence can help



1. Data Integration

Connect and integrate everything, from structured, to unstructured, to streamed data



2. IoT Ingestion

Supports distributed heterogenous environments spanning messaging systems, cloud storages, and enterprise applications



3. Data Orchestration

Seamlessly process large data sets across highly distributed landscapes and close to the data source, moving only high-value data



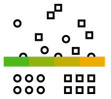
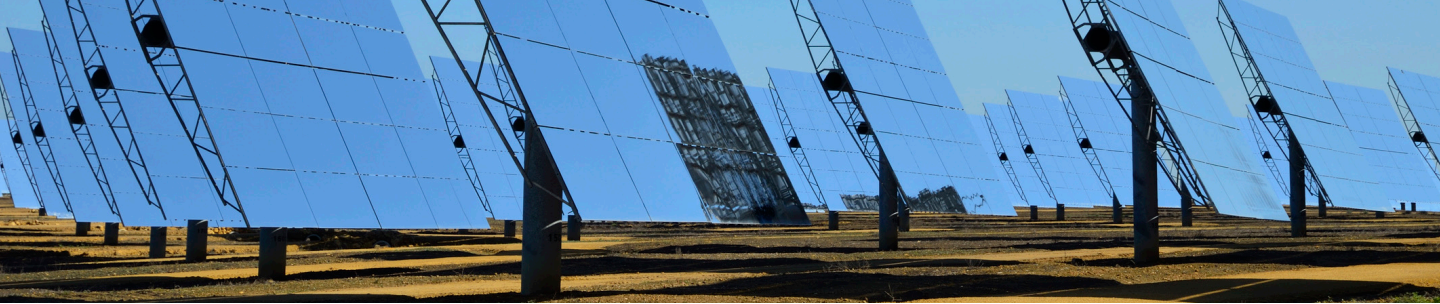
4. Big Data Handling

Event-based pipelines scaling to extensions of 1,000s of pipelines in parallel at any time



5. Data Governance

Provides processing pipelines, lineage analyses, metadata exploration capabilities, and quality rulebook checks



Data Preparation

Multiple use cases require data to be prepared in varied ways. Capabilities that may be required include transforming and preparing data in line with expected usage.

Complexity may rise when use cases are multi-layered with a long checklist of criteria needing to be fulfilled simultaneously. For instance, the Global Reporting Initiative for sustainability reporting recommends companies to disclose across three topics – Universal Topics, Sector Standards, and Topic Standards – of which each contain a long checklist of disclosures of their own.

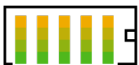
In such cases, automating the deployment and monitoring of various jobs in production to enable operationally efficient data processing would be a common additional capability required in solutions.

How SAP Data Intelligence can help



1. Data Processing

Transform datasets with ML/AI aided modelling and pipelines or do so programmatically for enhanced customisation



2. Data Orchestration

Conduct jobs sequencing for integration with downstream applications, joining or merging data, and automating the lifecycle management policies of datasets



3. Operations

Provides resource management capabilities for logging, monitoring, scheduling, version control, artifact registration, and alerts

4. Data Catalogue

Discover, classify, profile, understand, and prepare all your enterprise data assets



Data Storage

When provisioning storage solutions, key considerations include the cost-effectiveness of the storage system and the breadth of use cases that are supported. As part of data democratisation, a rising key consideration is also the ability to provide dedicated environments to analysts who require data and business modelling capabilities. Data democratisation refers to eliminating gatekeepers of data that consequently become bottlenecks in the data-driven decision making process. To do so requires enabling employees of all technical skill levels to access, understand, and utilise data.

How SAP Data Warehouse Cloud and SAP HANA Cloud can help



1. Multi-Tier Data Storage

Supports storage of data with differing usage frequency requirements to minimise cost



4. Self-Service Data Modelling

Provides rich interface for both business and technical users to conduct data curation and modelling at independent layers



2. Multi-Purpose Storage

Supports both OLTP and OLAP workloads, structured, semi-structured, and unstructured data, file system storage and object stores, and more



3. Data Spaces

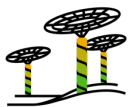
Have isolated and governed sandbox environments to set up customised storage configurations for specific use cases



Data Usage

There is a large shortage of genuinely skilled and experienced data science or analytics individuals in big data, consequently resulting in a chasm between data to insight, and insight to action. Countering these loopholes would require solutions with in-built intelligence that not only allows users of all technical levels to visualise and report on data, but to conduct self-service analytics.

How can SAP Analytics Cloud help



1. Augmented Analytics

Empowers both business and technical users to make sense of their data through provided ML/AI-enabled analytical features that return smart insights and predictions, with additional features inclusive of simulations, what-if analyses, and value driver trees



2. Data-Driven Decisions

Leverage business intelligence, analytics, and planning capabilities to make supported business decisions



3. Reporting & Visualisation

Provides reporting dashboards, digital boardrooms, and the scheduling of report curations based on templates and workflows



How past customers have achieved their goals

SAP customers are succeeding in sustainability with the afore-mentioned solutions and closing the gap between vision and action with analytics, thus helping the world achieve zero emissions, zero waste, and zero inequality.

Take a look at how Coldplay made their world tour more sustainable.



The Challenge

With over 5 million fans travelling to see their shows, Coldplay discovered that audience travel made up a large portion of the tour's scope 3 carbon emissions.



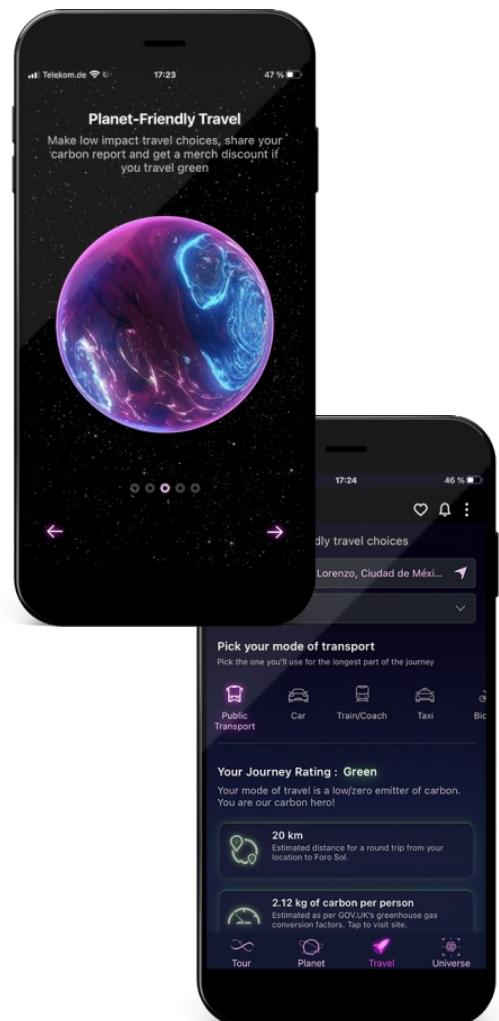
The Solution

Worked with SAP to develop a mobile application built on SAP Business Technology Platform, SAP Analytics Cloud and SAP Cloud for Sustainable Enterprises.



The Result

Fans had visibility into their carbon footprint. They could simulate their travels to calculate the corresponding impacts and select the low-carbon options. They could gain insights into Coldplay's sustainability efforts. They could also get exclusive information and experiences into Coldplay's tour.





Conclusion

For organisations at the start of their sustainability journey, the road ahead will get clearer as the organisation collectively works towards devising a suitable sustainable business strategy and improving their data architecture to gain visibility over their end-to-end processes. With the impending enforcements related to sustainability reporting from regulatory bodies and stock exchanges, the topic of sustainability is set to be a top-of-mind challenge for corporates globally. However, aside from these external pressures, our business landscape should still strive to be set up for success to one day conquer climate change. It is crucial for all organisations to begin their sustainability journeys and be accountable for their actions and impacts, because it is our responsibility to give future generations a place worth living for.

References

This paper was curated based on the research and sharing published by a wide range of sources. If you are interested to find out more, give the following sites a read. In particular, having a deeper look into the standards defined by the Global Reporting Initiative would be a good start to understanding the massive coverage of sustainability, including the future of sustainability reporting.

1. [Stanford Social Innovation Review | The Next Phase of Business Sustainability \(2018\)](#)
2. [JLL | Most companies have sustainability goals – but few have an action plan to achieve them \(2021\)](#)
3. [World Economic Forum | The global eco-wakening: How consumers are driving sustainability \(2021\)](#)
4. [TalentLMS | What do employees currently want from their workplace? \(2022\)](#)
5. [Gartner Insights | Employees seek personal value and purpose at work. Be prepared to deliver. \(2022\)](#)
6. [SGS | Sustainability Reporting: Moving from theory to practice \(2017\)](#)
7. [SAP | SAP Cloud for Sustainable Enterprises: Taking Action Together \(2022\)](#)
8. [Experian | Benefits of data democratization \(2020\)](#)
9. [Open Sourced Workplace | What are the three scopes of carbon emissions? \(n.d.\)](#)
10. [L.E.K. Consulting | Scope 3 Emissions: A wickers problem that requires genuine strategic focus \(2021\)](#)
11. [Change Started | What is Scope 3 Emissions \(2022\)](#)
12. [Global Reporting Initiative \(GRI\) | The global standards for sustainability impacts \(n.d.\)](#)
13. [Forbes | What is data democratization \(2017\)](#)
14. [BCS, The Chartered Institute for IT | The challenges of big data \(2020\)](#)
15. [SAP | SAP Business Technology Platform Solutions \(n.d.\)](#)

Tay, Amelia

SAP SG STAR Intern, APJ Data Architecture Team



amelia.tay.li.jia@gmail.com



[/in/amelia-tay-li-jia](https://www.linkedin.com/in/amelia-tay-li-jia)