WHEN DIGITAL MEETS SUSTAINABILITY: DIGITAL PLATFORMS AND CLOUD FOR SUSTAINABLE INNOVATIONS

Authors:

Zuzana Kovacova
Katharina Grimme
Bjoern Stengel
Dan Versace

When Digital Meets Sustainability: Digital Platforms and Cloud for Sustainable Innovations

Introduction

Being firmly in a digital decade, IDC estimates that 40% of total revenue for G2000 organizations comes from digital products, services, and experiences. With digital capabilities becoming part of business DNA, C-suite leaders are shifting focus on the value gained from digital technologies beyond speed and agility to using them for creating sustainable benefits for employees, economy, and society, supporting good causes, and assuming social responsibility.

Clients, investors, regulators, and the general public are examining organizations' disclosures of sustainability indicators more critically. Faced with this increasing scrutiny, organizations are searching for ways to become more accountable for the impact they have on the environment and society. More than ever, they need to showcase improvements achieved through sustainability initiatives.

AT A GLANCE

A broad range of capabilities and depth of expertise are required to implement and operationalize sustainability targets and strategies, align it with the digital strategy, build roadmaps to achieve the targets, redesign data architecture, and integrate technologies and systems.

42% of decision makers cite cloud as "very critical" or "extremely critical" in achieving their sustainability objectives.

Microsoft and PwC showcase the right convergence of technology, digital transformation, and sustainable business operations. They use their cloud capabilities, data, skills, and implementation strategies in a holistic approach to address sustainability-related risks and opportunities and empower businesses for the long term.

Forward-looking organizations regard sustainability as part of a long-term business strategy that will have a transformative impact on their business and as a critical driver for enterprise value. They are integrating sustainability objectives to help steer the organization and change the ways they measure success. They are adjusting business models to meet stakeholder sustainability expectations and to enhance brand value, trust, and employee commitment. They are building portfolios to address rising demand for sustainable products and services from the millennial and Z generations, many of whom are committed to spending with organizations that have adopted socially and environmentally sustainable goals.

Successful sustainability initiatives do not happen in a vacuum.

IDC's FERS research (May 2023) indicated that improved financial performance (increased revenue/profit) and improved operational efficiency (lowering costs) are the top business values experienced or expected by technology users as a result of implementing sustainability into operations.

Technological innovations, including IT efficiency, that generate improvements in overall energy efficiencies are essential to lower costs and reduce carbon footprints. The connection among operational efficiencies, IT efficiency, and sustainability is central to the business case for investing in sustainability initiatives.

Reporting according to the international standards and frameworks (e.g., GRI, SASB, CDP, TCFD), as well as adherence to sustainability regulations (e.g., EU CSRD), are among critical drivers of technology investments. Enterprises today face many challenges that complicate efficient and reliable sustainability reporting, including issues related to data access, lack of dependable data sources, and inefficient non-digitalized or non-integrated data platforms. Technology investment into areas such as ESG data management platforms, automation, and end-to-end process and technology monitoring and metering are needed to be able to consolidate sustainability data and use them in a meaningful way for various purposes (e.g., compliance, disclosure, assurance, and dashboards for executive and operational use).

42% of decision-makers cite cloud as "very critical" or "extremely critical" in achieving their sustainability objectives, according to IDC's 2023 CloudOps Survey.

Savvy organizations are interweaving digital transformation (DX) and sustainability strategies for maximum impact. As a result, technology purchase decisions such as cloud adoption are focused not only on speed and agility, but also on using it as a foundational technology to create impactful value from a sustainability perspective. This could be in the form of datacenter consolidation, use of next-gen efficient technologies in the cloud (such as serverless or container architectures) or capitalizing on cloud and its connected ecosystem's capabilities to analyze sustainability data at scale and in real-time to make responsible decisions.

A combination of right technology, data, and ecosystem platforms can truly accelerate organizations' sustainable journeys and support competitive differentiation.

In this Partner Spotlight

This IDC Partner Spotlight focuses on the synergies of the Microsoft Cloud for Sustainability platform and PwC's expertise and implementation capabilities to support clients in operationalizing data-driven sustainable transformation. A broad range of capabilities and expertise are required for success — from implementing sustainability governance, aligning digital and sustainability strategies and targets, building road maps to achieving these targets, redesigning data architecture, and integrating technologies and systems.

Situation Overview

There is no denying that convergence is taking place between technology initiatives, sustainability initiatives, and digital business initiatives. IDC research shows that sustainability goals are not the responsibility of a dedicated sustainability officer alone. According to IDC's 2023 IDC Global Sustainability Readiness Survey a vast majority of sustainability-related purchasing decisions reside among multiple leaders in the C-suite. CIOs, COOs, CPOs, and CSOs, along with CEOs, made up 67% of survey respondents who are key sustainability-related decisions makers.

Top-of-mind sustainability considerations for the C-suite:

- Innovating sustainably and responsibly with the right technologies, processes, and people strategy

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- Unifying data intelligence in the cloud
- World-class sustainable and efficient IT infrastructure
- End-to-end supply chain visibility
- Operational efficiency

This is no mean feat, given the business, data, and technology challenges. Let us assess these.

Business Challenges to Sustainability

From a business perspective, the greatest challenge is the lack of robust materiality assessments to identify the sustainability use cases that are critical for managing sustainability-related risks, as well as having the greatest impact on financial outcomes, the environment, and society. Such a foundation enables prioritization of business actions and distribution of cross-functional business mandates to deliver on the defined goals.

Implementing circular business practices is among the top challenges for European businesses.

According to IDC's Circularity Economy Survey, 2023, over 40% of European companies struggle to find the right partner, software, and expertise to help manage, report, and measure the impact of their efforts.

As organizations implement sustainability-related organizational changes, IDC sees growing demand for sustainability professional services, such as:

- Advice on short- and long-term sustainability strategy, materiality assessments, and the setting of quantifiable targets and connecting them to operational metrics
- Identifying, understanding, and managing sustainability-related risks to a company's operational and financial performance (including reputational risk)
- Implementation of processes, workflows, and technology for sustainability reporting and disclosure process, audits, and ensuring that reporting and disclosure is aligned with all applicable standards (particularly important to European businesses)
- Services that address sustainable operations and changes to business models. Organizations are looking for guidance on how to introduce circularity into their supply chain and product development. There is no one-size set of best practices as of yet, but a lot of progress is being made and intent is strong.

Data Challenges to Sustainability

You cannot manage what you do not know. Data is at the heart of becoming a sustainable businesses.

Steering business performance, complying with mandatory reporting and even operationalizing sustainability practices requires high-quality, trusted data so that it is audit-ready and assured with a clear chain of possession. Today, organizations rely on second-and third-party data lacking verification of its provenance.

They cite data quality as the top technical challenge in implementing sustainability initiatives. Data quality issues are linked to data silos, gaps in process and task digitalization, and lack of integration between technology, data, and sustainability outcomes.

Data for measuring non-financial performance exist across processes, operations, and systems, in multiple departments and locations. As a significant part of the data originates outside of the organization. extensive engagement of upstream and downstream partners to ingest, aggregate, and share data is critical.

European companies are at different stages in collecting and aggregating data for their ESG performance metrics. EU-wide and country-specific regulations have accelerated ESG data tracking. They are striving to consolidate a substantial amount of qualitative and quantitative ESG data and insights, looking backward and forward and across business operations and value chains.

Technology Challenges to Sustainability

IDC research has shown that technology users often lack the IT tools to build comprehensive and holistic sustainability insights. Some admit to using ad hoc tools (e.g., spreadsheets) that lead to poor data provenance qualities.

Platforms augment data. Sustainability-related data needs to be consolidated and centralized and made accessible. Managing sustainability data holistically and in near-real time using an ESG data management platform enables organizations to master the challenges discussed in this paper.

Role of Foundational Technologies such as Cloud, Digital Platforms, and Insights for Sustainability

Cloud is the de facto engine for business transformation. With cloud accounting for a third of IT investments, tying sustainability strategies to cloud is a natural starting point.

- Cloud-based dashboards and monitoring technologies are becoming critical not only to track GHG emissions across all scopes (1, 2, and 3), but also for insights to reduce customers' carbon footprint.
- Sustainability-related compliance requires vast data inputs from variety of sources; consequently, cloud computing — with its inherent capability to process and store a huge amount of data — has now become a key enabler of sustainability.
- Modern green datacenters represent a key element of cloud delivery through an efficient cooling system and energy-efficient architecture, as well as the capacity to contract renewable energy, consequently reducing carbon footprint.

Companies can achieve significant business outcomes through investments in sustainable IT and technologies that help turn data into recommendations.

Organizations are currently focusing on their climate impact metrics in response to external pressures to demonstrate their contributions to mitigating negative impacts on the environment. Net Zero Tracker reports that more than one-third of the world's largest publicly traded

companies have set net-zero climate targets. Numerous organizations, however, are often not able to provide detailed information on their emissions measuring approach and their decarbonization roadmaps.

Executives may think they are paying sufficient attention to the social and governance aspects of business operations, but they need to ensure that their performance is reflected in formal data disclosures, not anecdotal evidence. They will be required to demonstrate that they implement policies, due diligence, and remediation processes related to human rights, working conditions, and the impact their activities have on communities across wider business ecosystems.

In the long run, IDC believes sustainability metrics will assume the same importance as financial metrics. Currently, however, most businesses are still at the beginning of this sustainability data journey. IDC surveys have shown that organizations are struggling to define their appropriate non-financial KPIs and tie them to operational indicators. Companies often do not even know where to start. Consequently, they engage external firms that provide advisory and consulting services to help them prepare short- and long-term scenarios for navigating the process.

Organizations need support in defining the right technology strategy for sustainable business transformation. This starts with defining a data architecture for sustainability and choosing a data management platform. CXOs should formulate long-term technology plans that seek to make non-financial data collection and consolidation digitalized, automated, and ideally integrated with existing systems to enable real-time monitoring, auditing, and assurance.

Technology Profile: PwC and Microsoft Cloud for Sustainability

Microsoft Cloud for Sustainability

Microsoft Cloud for Sustainability integrates capabilities delivered by Microsoft and its ecosystems of partners to support customers on their sustainability journey. The solution addresses **sustainability-related business processes** and outcomes such as:

- **Enabling ESG data intelligence:** This involves calculating footprint, establishing baselines, analyzing ESG performance against goals, operationalizing corporate governance practices, supporting greater transparency and accountability, and reporting.
- **Ensuring governance, collaboration and planning:** This is accomplished through the integration with Microsoft Teams, while enabling sustainability contributors to collaborate, plan, and streamline sustainability-related workflows.
- **Making IT more sustainable:** This includes optimizing workloads in the cloud and identification of carbon-intensive assets and technologies such as applications, AI, and productivity solutions.
- **Improving ESG performance:** This includes optimizing the operations, assets, and environmental impact of facilities, fleets, and value chains.

The platform ensures holistic sustainability data management, insights and disclosures. It is structured as follows:

- **Microsoft Sustainability Manager:** The emissions data integration part of the solution. It unifies data intelligence and enables comprehensive, integrated, and automated environmental sustainability management for organizations. It enables them to record, report, and reduce their environmental footprint more efficiently, while reducing reliance on manual processes.
  It can be integrated with other business systems via automated data connections and calculations using the Microsoft Cloud for Sustainability data model. Its core capabilities can be extended using Azure and Power Platform tools to create custom solutions, such as new formulas or reports. It includes built-in calculation methodologies for scopes 1, 2, and 3 emissions. The integration of Microsoft Teams enables sustainability contributors to collaborate while streamlining the related workflows. Its core capabilities can be extended using Azure and the Power Platform with custom industry vertical or horizontal solutions, such as new formulas or reports.
- **Emissions Impact Dashboard:** A set of carbon accounting tools to facilitate usage of Microsoft cloud technologies and solutions.
- **Project ESG Lake:** This offers an expansive ESG data model with more than 400 tables covering carbon, water, waste, social, governance, biodiversity, and general business areas. Project ESG Lake enables organizations to bring together ESG data from various source systems and standardize it to the ESG data model to build a centralized ESG data estate.
- **Partner Ecosystem:** Microsoft partners attach their solutions to Sustainability Manager to support reporting, governance, and emissions reduction initiatives with additional analytics, digital twins, and AI-driven automation. Examples include ABB, Honeywell, Johnson Control, and ICONICS solutions that enable capabilities around renewable energy management, data management related to electrical systems, grid decentralization and demand response, smart buildings and facilities, and asset monitoring. The ECOLAB3D digital platform, which uses Microsoft Sustainability Manager, was recently introduced to help organizations monitor and manage water data, a non-financial metric mandated by regulation.

Microsoft released targeted reporting and goal alignment enhancements aligned to **European Sustainability Reporting Standards** within the **Corporate Sustainability Reporting Directive** (CSRD), which also track progress against the Science Based Target initiative (SBTi).

PwC's Cloud and Digital Transformation Practice and Synergies with Microsoft Cloud for Sustainability

PWC's Cloud and Digital Transformation practice aims at enabling organizations accelerate business innovation and achieve competitive advantage through the use of technologies. Its cloud-driven transformation proposition focuses on business value creation and organizational agility but goes beyond this to empower organizations to address their net zero agenda through its technology capabilities. PwC has focused on sustainability and enterprise governance since the early 2010s with a data-driven and cloud-focused approach. PwC sustainability practice

includes more than 3,000 experts in Continental Europe providing sustainability services and client support in:

- Setting decarbonization strategies and targets and defining technology strategies to achieve them
- Implementing sustainable business models, responsible supply chain, and responsible sourcing practices
- Sustainability reporting, compliance, and disclosures, including tax and oversight
- Tech-enabled sustainability (e.g., technology and digital services, climate risk modelling)
- Assessment and benchmarking platform
- Services to upskill and transform business processes and practices
- Templates for sustainability business case, impact measurement, disclosure, and climate change knowledge

Embedding Sustainability in Business Strategy and Processes

PwC combines its cross-business, operational, and technology expertise with industry-specific knowledge to assist clients during sustainable digital transformation.

This is where Microsoft and PwC's synergies and sustainability ambition come together to unleash the potential of sustainability business use cases. PwC's implementation capabilities complement Microsoft's technology. The two vendors have the appetite, ability, and vision to go beyond day-to-day sustainability initiatives through the use of technology to embedding a sustainability-centric mindset in business operations.

In IDC's opinion, addressing issues such as the skills gap, responsible disclosures, impact measurement, and the need for a broader knowledge bank of climate change can help customers not just do right for today, but also think right for tomorrow.

PwC's strategic and operational expertise and solutions focused around sustainability placed the vendor among the leaders in IDC's MarketScape: Worldwide ESG/Sustainability Strategy Consulting Services 2023 Vendor Assessment (February 2023, IDC #US49044922). With a proven track record of successful engagements, PwC's offerings in net-zero space, including its managed services approach, are key differentiators.

Within this strategic partnership, PwC's role is to address the implementation of Microsoft's technology stack in the broader context of the unique digital, sustainable transformation journey that each enterprise goes through, and to assist enterprises in deriving sustainability-driven business and operational outcomes. PwC's capabilities, expertise, skill sets, and digital tools enable:

- Evaluation of the status quo of sustainable business, digital maturity, and governance; the prioritization of targets; and the outlining of business transformation road maps
- The setting of an technology strategy that clarifies which technologies and data landscape are required to enable strategic sustainability ambitions and reporting requirements

- Management of separate parts of the sustainability digital project, including calculation of carbon footprint; sustainability assurance, compliance, and reporting; evaluation of business risks driven by climate change; value chain visibility; and mastering a holistic sustainability data-driven strategy and transformation.

Challenges for Technology Providers

European organizations have low adoption rates of technologies for sustainability business use cases and data management. The technology industry is facing the complex task of scaling up data management processes, tasks, and outcomes for sustainable transformation under dynamically evolving best practices, reporting standards, technologies, and sustainable innovations.

The technology industry must be prepared to act collaboratively and in an agile manner in response to continuous changes and client requirements. Companies like PwC and Microsoft, which possess the necessary expertise, capabilities, and technology skills, should consider building joint ESG offerings (e.g., in the form of managed services or as-a-service propositions). IDC predicts that by 2025, 40% of sustainability-related services engagements will require a managed services component to better address the long-term nature and intense data needs of sustainable transformation and sustainability reporting[1]. Such offerings enable the flexibility to select services and technologies that address issues encountered by clients at a given stage of sustainable transformation. They can provide solutions to such problems as the lack of data quality and verification issues. Through managed services contracts, companies like PwC would be able to ensure audit-ready data management and assist the transition to business transformation founded in real-time data, and insights.

Outlook

When it comes to assessing third-party risks around sustainability, 2023 and 2024 are turning point years. Already, one-fifth of organizations place greater weight on sustainability performance than security, financial, or operational risks.

By next year, 30% of organizations will leverage ESG data management platforms to steer ESG KPIs via a centralized system of record for reporting purposes and real-time operational decision-making support.[2]

Scrutiny from business stakeholders, regulators, and financial market participants will evolve from general inquiries to structured data-based examination.

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[1] IDC's *FutureScape: Worldwide Sustainability/ESG 2023 Predictions*, October 2022
[2] IDC's *FutureScape: Worldwide Sustainability/ESG 2023 Predictions*, October 2022

High-emissions industries (e.g., transportation, manufacturing of cement, and chemicals production), those contributing to energy demand reduction (e.g., construction, transportation, and energy distribution infrastructure), and ICT technology and services providers enabling climate mitigation and adaptation will be under increasing pressure to optimize.

The number of organizations investigating sustainability-related risks in their value chains will rise, and industry specifics will play a significant role in this. Industries that make consumer-facing products that are under public scrutiny for environmental and social impacts (e.g., batteries produced by the automotive industry) will focus more on sustainability-related risk assessments.

Consequently, demand for sustainability-related data management platforms will accelerate. Organizations will want to visualize and control data, metrics, and knowledge extraction, and proactively manage business outcomes.

As savvy C-suites put sustainability front-and-center of their strategy, they will seek technology partners that align with their vision and help put their sustainable vision into practice.

This is the only way to prepare for the sustainability-first business future. By 2026, all new entries in Top 500 European organizations will have implemented a "CO_2 of goods sold" (CO2OGs) tracking across all their operations.

MESSAGE FROM THE SPONSOR

Many organizations have made ESG commitments and are working their way through upcoming reporting and regulatory requirements. More and more leaders start to realize that besides meeting these evolving regulatory requirements, a broader sustainable business transformation is required in the overarching organization looking at their business model, technology architecture, products and services, supply chain, talent and performance management.

At PwC, we help organizations on these transition pathways, making them more sustainable and resilient. We provide guidance on a wide variety of issues, working with clients from the corporate, private equity and public sector. We are uniquely positioned to spot and mitigate risk and capitalize on opportunities. This year we are proud to be celebrated as Microsoft 2023 'Partner of the Year' and PwC is working with Microsoft to help various sectors drive the digital and cultural change needed to steer through disruption, eliminate inefficiencies and deliver essential services. With 15 years' experience in 157 countries and more than 3,000 experts in Continental Europe, PwC is uniquely qualified to service the needs of organizations globally. To learn more, visit https://www.pwc.com/gx/en/services/alliances/microsoft.html

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About the Analyst

Zuzana Kovacova, Program Manager, EMEA Sustainability Strategies and Technologies

Zuzana's primary research coverage is investigating how sustainability impacts business models and processes, technology, innovation, and ecosystems. Specific topics include sustainability maturity of technology users, global and European regulations, and the readiness of the technology industry to enable sustainable digital transformation.

Dr. Katharina Grimme, Associate VP, Research and Practice Lead, EMEA Sustainable Strategies and Technologies

Katharina has 20+ years of experience as an analyst and strategy consultant in the tech industry and leads IDC EMEA's Sustainable Strategies and Technologies Practice. With her expertise and passion for sustainable concepts for business, society, and digitalization, she drives thought leadership at the intersection of sustainability and digital transformation.

Bjoern Stengel, Global Sustainability Research and Practice Lead, Sustainable Strategies and Technologies

Bjoern Stengel is IDC's global sustainability research lead. His research focuses on how environmental, social, and governance (ESG) topics impact and shape business strategies and technology usage. He provides insights into market opportunities, adoption strategies, and use cases for sustainability-related technologies and services. Bjoern helps IDC's clients understand the impact of technology-enabled, sustainable transformation processes in the context of sustainable business strategies, operations, and products and services through research reports, news publications, and speaking engagements at industry events such as Climate Week NYC.

Dan Versace, Research Analyst, ESG Business Services

Dan Versace is a research analyst covering IDC's worldwide Environmental, Social, and Governance (ESG) Business Services research. His work primarily focuses on assessing how aspects of sustainability, both social and environmental, shape and impact organizations and the means that companies can use to better their sustainability performance. He provides insights into market opportunities, adoption strategies, and use cases for sustainability-related professional services through market forecasts, end-user surveys, and competitive assessments of business and IT consulting, systems integration, engineering, audit, assurance, and other services providers that support sustainable transformation projects.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets.

With more than 1,300 analysts worldwide, IDC offers global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries. IDC's analysis and insight helps IT professionals, business executives, and the investment community to make fact-based technology decisions and to achieve their key business objectives.

Founded in 1964, IDC is a wholly-owned subsidiary of International Data Group (IDG, Inc.), the world's leading tech media, data and marketing services company.

IDC UK

5th Floor, Ealing Cross,
85 Uxbridge Road
London
W5 5TH, United Kingdom
44.208.987.7100
Twitter: @IDC
idc-community.com
www.uk.idc.com

Global Headquarters

140 Kendrick Street,
Building B
Needham,
MA 02494
+1.508.872.8200
www.idc.com

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