COMMENTARY

# Oracle: Enabling a More Sustainable Future


## Key takeaways

Organizations are responding to sustainability needs and challenges with increased urgency and higher prioritization, evolving from an element of corporate social responsibility to a critical global reporting imperative.

Addressing the UN Sustainable Development Goals provides focus for the sustainability programs for companies from a wide range of industries, with investors, Boards of Directors, regulators, and customers raising their expectations and demanding progress reporting on a company's Environmental, Social, and Governance (ESG) efforts.

Innovation investments in sustainability during new product and service design processes generates long-term social and environmental benefits while incrementally creating economic profits and strong brand equity.

Effectively revamping operations and products to achieve sustainability goals requires data from far-flung global value chains to obtain a measurable view of the organization's current performance and impact, and then to help plan and execute process and product changes. Oracle, a global enterprise software leader, has made great strides in improving the sustainability of its operations and supporting clients in defining and advancing their sustainability goals through the firm's expertise and comprehensive solutions and performance management portfolio. Cloud delivery is also helping their customers achieve their sustainability objectives.


## Introduction

The world is at an environmental crossroads. Human impacts on our environment are getting more and more difficult to ignore. Sustainability has been on the corporate agenda since the 1960s but today we have moved far beyond a "corporate citizenship" initiative to a global strategic imperative. There is growing evidence that businesses across the globe are responding to this challenge with higher urgency

and working to embed sustainable practices into their products and operations as a critical priority, not a "nice to have."[1]

The 1960s also saw an increase in environmental activism and some early wins, such as making progress in reducing air pollution. But with such a global and systemic topic it can be hard for organizations to choose where to start. The UN Sustainable Development Goals (SDGs) provide a useful framework for governments, companies, and even individuals to understand how their actions might impact the environment, as well as for setting goals and measuring sustainability performance.

Most companies will have a two-pronged strategy around sustainability: one focusing on reducing the impacts of their business operations and one focused on reducing the environmental impacts of their products and/or services. Given the complex and diverse dimensions of ESG, organizations of nearly every industry and size are seeking partners that can bring the domain expertise, knowledge of best practices, solutions, and technologies to bear on their challenges. These partners bring the frameworks to define goals, capture relevant data, change processes, and measure progress.

Oracle Corporation is one such partner. The company provides consulting services and integrated suites of enterprise applications (including PLM), paired with secure, autonomous infrastructure in the Oracle Cloud. It has been an advocate for sustainable practices with a comprehensive corporate sustainability program in place for almost 15 years. It has leveraged these applications, technologies, and expertise to offer its clients a comprehensive cloud-native business platform that can help organizations realize their sustainability objectives, along with the expertise to help them get started and make steady progress.

## Sustainability is a Strategic Imperative

Sustainability has been on the corporate agenda since the 1960s when many leading companies initiated corporate social responsibility (CSR) programs to address societal issues. Many programs included sustainability improvement objectives but today we have gone far beyond a "nice to have" topic to a global strategic imperative.

This heightened urgency responds to a growing wave of scientific data showing the drivers and harmful effects of global climate change. In its latest report, the Intergovernmental Panel on Climate Change (IPCC), documents that greenhouse gas (GHG) emissions continued rising during the decade between 2010–2019, and were higher than in any previous decade.[2]

The waves of innovation brought by Industry 1.0, 2.0, 3.0, and now Industry 4.0 created great economic opportunities that improved the quality of life for many around the world but at a significant environmental cost, particularly resulting from ever higher consumption of fossil fuels. These waves of innovation led to massive globalization, helping to pull billions out of poverty. This powered middle class growth while spreading those environmental consequences to the four corners of the Earth. Climate change, and its effects on weather and sea level rise are an ever-present signal of the dangers we face. Atmospheric $CO_2$ has grown to dangerous levels, plastic waste is clogging our oceans, devaluing marine ecosystems, and harming wildlife. As a result of these harmful trends, leaders in virtually every organization now recognize the need to prioritize and accelerate their efforts to operate more sustainably.

However, the enormity of the problem and complexity of options to address it can make it difficult for organizations to identify a starting point and meaningful near-term goals, while sustaining a healthy business. The UN SDGs can help provide focus for countries, organizations, and individuals. Environmental

[1] Research for this commentary was partially supported by Oracle.

[2] https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

issues are largely the focus of the SDGs but the vision is much broader: "a shared blueprint for peace and prosperity for people and the planet, now and into the future."[3]

How does industry best respond? In fact, the Industry 4.0 vision driving many global companies today embodies the need for better environmental and social governance. To meet this far-reaching vision, industries are undergoing massive digital transformations, which can provide new opportunities and new value streams while reducing environmental impacts. At the same time, there are increasing demands for transparency across global value chains to support use cases like preventing the use of conflict minerals and products made with forced labor, as well as reducing GHG emissions to name a few opportunities.

Beyond the dramatic operational transformation required to address sustainability challenges, the products organizations responsible for design, development, and production play a huge role in the puzzle. All raw materials, compounds, and components that comprise a Bill of Materials (BOM) are not created equally from a sustainability perspective. Indirect impact (the amount of GHG emissions required to produce and deliver a supplier's inputs for example) and reusability must be given higher weight in the design process. This leads to the need for tight integration between an organization's product lifecycle management (PLM), procurement, and performance management reporting systems to inform and drive sustainable product design and sourcing initiatives.

CIMdata firmly believes that product companies pursuing a digital transformation strategy must have a solid PLM foundation to succeed.[4] The same is true for sustainability. Products must be defined and designed up front to be sustainable; sourced and manufactured to meet ESG objectives; and supported through life to minimize environmental impact all while maximizing product value to the consumer. Gathering, managing, and reporting all this information will take a digital platform that offers significant native capabilities while also supporting the heterogeneous applications typical of most organizations. This PLM foundation must be capable of sharing data seamlessly with procurement and other supply chain management functions. The BOM defined through the tightly integrated PLM system is a core element of the "digital thread" that ties together the end-to-end design-to-delivery processes.

Many see meeting these new requirements as onerous and costly. But research has shown that companies can be both sustainable and profitable. Consumers are increasingly spending their green (money) on greener products or with greener companies. A recent IBM Institute for Business Value study[5] found increased consumer interest in sustainability:

- 93% of global consumers say COVID-19 influenced their views on sustainability
- 22% more consumers say environmental responsibility is very or extremely important when choosing a brand than they were in 2019
- 62% of consumers now say they're willing to change their purchasing behavior to help reduce negative impacts on the environment (up from 57% in 2019)

Consumers increasingly want to buy sustainable products, but are companies widely ready to supply them? Two recent Accenture studies signal progress in this direction, and that leaders can make money doing it. In a 2020 Accenture study "73% of executives said that becoming a 'truly sustainable and responsible business' was a top priority for their organization over the next three years. Working with the World Economic Forum in 2021, 79% of 1,122 CEOs said that the pandemic highlighted the need to transition to more sustainable business models…and leadership teams that build sustainability into the DNA of their organizations are better able to deliver financial value and wider stakeholder impact. In fact,

[3] https://sdgs.un.org/goals. These goals were adopted by UN Member states in 2015.

[4] Research conducted by CIMdata in late 2021 found that all of the top 25 firms in global PLM revenues had substantial programs in sustainability, many citing the UN SDGs.

[5] "Sustainability at a turning point", IBM Institute for Business Value, 52038652USEN-00, May 2021.

those with the most deeply embedded sustainability management practices outperform peers by 21% on both profitability and positive environmental and societal outcomes."[6]

Oracle, a global software leader and long-time PLM Mindshare leader in CIMdata's PLM market analysis, can offer expertise, comprehensive solutions, and a performance management portfolio that helps companies across a wide range of industries meet their sustainability objectives.

## Oracle: A Comprehensive Vision for Enabling a Sustainable Future

Oracle is well-known for its mature and successful ESG program focusing on key topics such as education, the environment, volunteerism, and philanthropy. Until 2009, Oracle was primarily a software company managing people, and delivering software. Its acquisition of Sun Microsystems that year moved the company into the hardware realm, inheriting the challenge of managing a complex global supply chain. As demonstrated in many Oracle events, their hardware business relies on Oracle solutions and customers deploying these offerings. To help embed sustainability into the corporate DNA, Oracle's Chief Sustainability Officer reports directly to the CEO and works with an organization-spanning Environmental Steering Committee, set up just after acquiring Sun. Oracle sees managing sustainability as touching virtually every part of its business and therefore demanding an expansive, systemic response as shown in Figure 1.

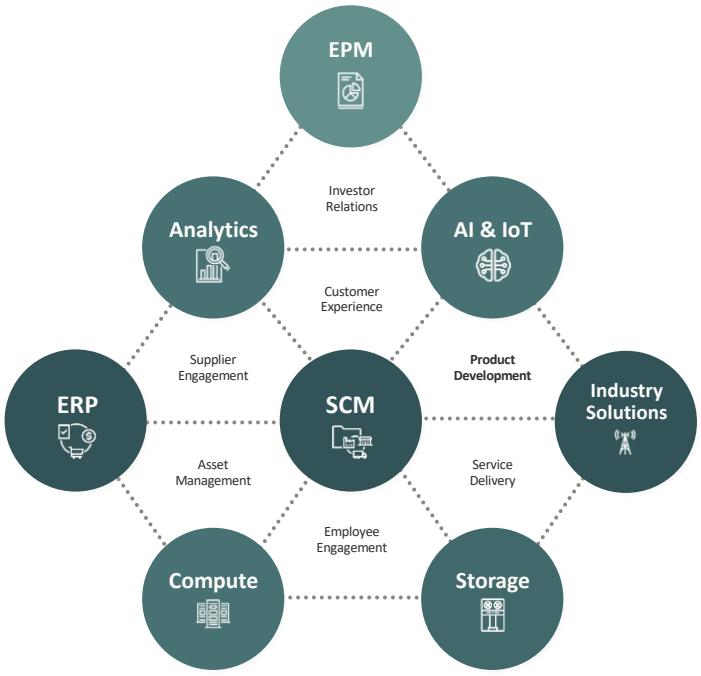


**Figure 1--Sustainability is Everyone's Business**
*(Courtesy of Oracle)*

As with many product companies, there are two facets to sustainability at Oracle. First is "Oracle Operating Sustainably." Oracle sets goals every five years; their 2025 goals include:

- 100% renewable energy use for Oracle Cloud and Oracle Operations
- 25% reduction in employee air travel emissions
- 100% of key suppliers have an environmental program in place
- 80% of key suppliers have emission reduction targets in place

[6] https://www.accenture.com/_acnmedia/Thought-Leadership-Assets/PDF-5/Accenture-Shaping-the-Sustainable-Organization-Report.pdf

Oracle is making steady progress toward these goals through a comprehensive program. Annually Oracle publishes the "Oracle Social Impact Datasheet" to report on year-over-year progress towards these key priorities:[7]

- **Reducing energy consumption**—Oracle runs its network of facilities with high industry standards for energy efficiency. As a result, the company has been recognized for highly efficient, environmentally friendly buildings and operations. Oracle owns 33 buildings globally that have been awarded ENERGY STAR certifications, 28 that received BOMA certifications, and 7 that are LEED-certified.
- **Reducing GHG emissions**—Since 2015, Oracle has cut its carbon footprint on an absolute basis even as energy usage has grown significantly with the expansion of Oracle Cloud. The reductions were achieved through increased renewable energy use, improved energy and lighting efficiency, onsite solar installations, supplier engagement, and a variety of other emissions reduction initiatives across the global operations footprint.
- **Water use reduction**—By leveraging a variety of water-saving strategies across its global facilities and data centers—including rainwater harvesting, xeriscape gardening, and condensate reclamation—the company has cut its water use by more than 22 percent since 2015.
- **Waste reduction**—Oracle has continuously cut total waste generated at its facilities since 2015, through a wide range of initiatives including recycling and composting and raising employee awareness about responsible waste disposal. The company also is pursuing ways to eliminate single-use plastics at offices around the world, with its campus in Redwood Shores, California already a "zero waste to landfill" facility.
- **Implementing responsible sourcing practices**—Oracle is embedding responsible sourcing into all aspects of its operations, including supplier engagement, hardware and software development, manufacturing, procurement, and logistics networks.
- **Recycle and Reuse**—Oracle recycled and reused 99.6% of retired hardware in 2021

To help reach its sustainability objectives, Oracle relies on its own Cloud solutions, just as its customers do.

Its in-house progress and methods lead into the second facet of Oracle's robust vision for advancing sustainability: offering effective services and solutions that help customers accelerate progress against key goals. Oracle believes its solutions can enable organizations to be more sustainable by managing the environmental impacts throughout their value chain, and by helping design sustainable products that minimize resource usage, optimize logistics, and best leverage their supply chains. Oracle offers a range of solutions that can support an organization's sustainability objectives that span the value chain. The company's Design and Sourcing offerings can help set guidelines for designers, support environmental impact reviews during development, and enhance supply chain planning and improve sustainable sourcing. Its Manufacturing, Warehousing, and Transportation solutions help enable sustainable manufacturing and logistics while also supporting product "take-back," a critical requirement with Extended Producer Responsibility (EPR) becoming the norm in many industries.

Having all this varied information on a unified platform with a common data model helps ensure designs meet sustainability objectives at every step of the product lifecycle and that those designs comply with regulations, as well as supporting sustainability goals, while meeting all customer requirements. The platform readily enables requirements for a common "digital thread," another growing trend in many industries. Oracle also supports digital twins used to simulate product manufacturing, which can help

[7] https://www.oracle.com/a/ocom/docs/corporate/citizenship/ccr-datasheet.pdf

reduce waste and estimate environmental impact. This helps ensure compliance requirements are met early in design. Companies can also use this information to track their social impacts. For example, their PLM implementation can help simulate alternate sourcing strategies that might, for example, rely more on locally produced materials which can both reduce transportation costs and increase the social benefits for the local economy.

Platforms can also help embed sustainability in all aspects of the business and steer the decision-making process. Dashboards can leverage real-time data on sustainability key process indicators (KPIs) ensuring timely and appropriate action. Allowing the extended enterprise to also benefit from the platform helps ensure that partners and suppliers all have the same goal—creating a sustainability model that matches their corporate objectives.

Oracle customers are already reaping the environmental benefits. Unilever, a leading global provider of food, home, and personal products, used Oracle Transportation Management to reduce their $CO_2$ emissions by 9% while driving 29 million fewer kilometers across their fleet. FLSmidth, an engineering, equipment, and service solutions provider, uses Oracle Cloud Infrastructure to reduce its carbon footprint having decommissioned 470 servers to date, including dozens of databases and applications with low usage. And Oracle itself relies on its own solutions to help manage their 20 million $ft^2$ of real estate, including Oracle Cloud IoT solutions to monitor and manage key facilities for energy efficiency in combination with Oracle Analytics Cloud to animate dashboards with KPIs and other relevant information to support enhanced decision-making. With new solutions coming online as part of the Oracle Cloud, customers can look forward to support for new use cases to help support a more sustainable future. To effectively implement these solutions, Oracle Consulting Services can help guide its customers through the process of establishing goals and configuring applications to capture relevant data, visualize insights, and measure performance.

## Conclusion

Sustainability is a global and strategic imperative. The UN Sustainable Development Goals help provide focus for corporate sustainability programs in a wide range of industries. Effectively revamping operations and products requires data from far-flung global value chains that can be integrated and shared seamlessly, in real-time, from product design, across the supply chain, and through service and end of life. Using the UN SDG framework, with a "digital thread" that connects the enterprise, organizations can gain a clear view of their status quo and then plan and execute process and product changes to advance sustainability performance.

Oracle, a global enterprise software leader, has made great strides in improving the sustainability of its own operations, while leveraging its expertise and expansive portfolio of applications and technologies to help customers achieve their sustainability objectives.

Unlike other software firms, Oracle makes and uses hardware, giving them insights into how circular economy thinking impacts product companies. They also have an advantage when addressing this data-centric problem. Their broad platform natively covers many of the data sources and use cases needed to support sustainability programs, giving them applications insights that can help them better integrate offerings from other providers to support their customers' sustainability programs. Oracle is already enabling a more sustainable future for themselves and their customers, with more capabilities to come. People say that data is the new oil, and it is data that will power sustainability programs going forward leveraging platforms such as Oracle's as a key enabler to their success.

## About CIMdata

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design, deliver, and support innovative products and services by identifying and implementing appropriate digital initiatives. For nearly forty years, CIMdata has provided industrial organizations and providers of technologies and services with world-class knowledge, expertise, and best-practice methods on a broad set of product lifecycle management (PLM) solutions and the digital transformation they enable. CIMdata also offers research, subscription services, publications, and education through certificate programs and international conferences. To learn more, visit www.CIMdata.com or email info@CIMdata.com.