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Data-Driven Sustainability

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4 key steps to manage, measure, and report on performance

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By Mark Jackley

The corporate drive toward implementing more sustainable business practices goes beyond concerns about protecting the planet and its people. It's fast becoming a regulatory, investor, customer, public relations, HR, and IT requirement, one that demands extensive data gathering and reporting.

The European Union has led the way in sustainability law, requiring all large companies and most smaller ones to disclose information on their environmental impact. These disclosures are meant to help governments, investors, consumers, and other stakeholders understand the full effects of a company's policies and actions. In 2023, the EU's Corporate Sustainability Reporting Directive strengthened those rules. Other nations, including Japan, Brazil, and New Zealand, have also recently tightened their own sustainability laws.

In the United States, regulations governing corporate sustainability have been left mostly to individual states. However, in early 2024 the Securities and Exchange Commission approved its first-ever rules requiring businesses in the US to disclose climate-related impacts and risks, focusing on carbon emissions, though the SEC paused the rules in the face of legal action from states and businesses. A court decision is pending and may spark further litigation.

Regardless of legal outcomes, businesses are continuing to gather sustainability data and are using it to inform their operations. Cost reduction is one of the biggest drivers.

For example, the cost to the global economy of not recycling and having to clean up marine plastic waste is measured in billions of dollars, with some estimates topping US$2 trillion. Food wasted by supermarkets and restaurants and across supply chains costs the global economy more than US$1 trillion a year[1], according to the World Resources Institute.

Increasingly, lenders of working capital require businesses to report sustainability data, which can "now serve as indicators of a target company's long-term value potential[2]," said Clark Savolaine, a KPMG partner, in one of the firm's advisories.

Some lenders now believe that a company's sustainability practices are a sign of engagement with shareholders, customers, and employees and signal a commitment to transparent reporting,

Sustainability in action

A major French energy management company founded a "sustainability school," an online training program that shows its customers ways to decarbonize their operations.

A Japanese brewing and distilling group created wide-ranging strategies to reduce water usage and protect the Scottish peatlands and other ecosystems that provide ingredients for its whiskies.

according to research from Harvard Business School and the London School of Economics. Some analysts predict financial institutions will start charging higher interest rates on loans to companies that lack sustainability data, or whose data reveals weak environmental performance.

Green initiatives can also enhance companies' brand reputations, helping them stand out in their markets. Think Schneider Electric, Subaru, Patagonia, and Allbirds.

But as the expression goes, you can't improve what you don't measure. Often the data that companies need to assess and report on their sustainability progress lives in scattered silos, both within and outside the enterprise, requiring lots of additional work to find, connect, and analyze it. Data formatting and quality tend to vary from source to source, calling into question the data's accuracy.

In the following chapters, we'll explore how companies can improve how they pull together sustainability data on centralized software platforms and how AI can be applied to automate reporting and improve analytics.

> "Customers consistently tell us that the greatest barrier to understanding their environmental impact is the time and complexity required to chase down, organize, and analyze the necessary data"
>
> **Steve Miranda**
> Executive Vice President, Applications Development, Oracle

1 Planning and measuring sustainability progress

Sustainability planning is similar to financial planning. Think of it as another form of risk mitigation, complete with detailed scenario modeling.

Say a company sets a goal of becoming carbon neutral within five years. Its plan should describe a path for reaching that goal, including its financial and operational effects—both the costs of reaching the goal (such as the cost of transitioning to low-carbon power sources) and the expected benefits (for example, customer goodwill and avoidance of fines and new business opportunities). And then the plan should be updated at regular intervals as goals are met or not met.

Just as they would in financial planning, companies can use enterprise performance management (EPM) applications to get their arms around ESG (environmental, social, and governance) data, accessing and analyzing such data contained in enterprise resource planning (ERP), supply chain management (SCM), and other operational systems. Cloud EPM systems help monitor performance faster and more accurately than manual systems. For example, it's easier to measure progress on reducing energy consumption when all departments use the same metrics in a shared application, analyzing data from utility bills, water and electric meters, energy management software, SCM applications, and other sources.

An Irish climate solutions company uses its EPM applications to track its progress on transitioning to renewable energy, increasing recycling, reducing waste, and helping restore natural habitats, with

a transparent audit trail every step of the way. A national casual dining chain relies on its EPM system to measure progress on goals such as recycling or composting more than half of its restaurant waste.

AI embedded in EPM applications is making sustainability tracking ever-more precise, says Elena Avesani, vice president of sustainability applications strategy at Oracle. "Companies will want to use AI to get detailed views of their carbon impact across the value chain and recommend specific improvements to a CFO or chief sustainability officer," Avesani says. "To make goals more attainable, AI can show the impact of a single material or look at the bigger picture, suggesting how to reduce your total carbon emissions."

AI algorithms can also be used to help predict the effects of sustainability actions. For example, a freight company looking to reduce its reliance on diesel trucks in favor of electric models can use AI tools to forecast how much its electricity usage will increase as diesel usage wanes. AI can also help predict the effects of severe weather or new distribution routes on energy consumption.

More than

1,000

ESG performance metrics are required by new EU sustainability disclosure laws.

Source: Good.Lab

2 Monitoring supply chain sustainability

Supply chain management is the function most people associate with corporate sustainability, since businesses commonly track ESG data in the sourcing, production, and distribution of goods. It's a huge job, requiring companies to monitor sprawling global networks. Typically, supply chains account for the lion's share of a company's carbon emissions.

Transportation and logistics management applications can help manufacturers, shippers, and suppliers track and deliver materials, parts, and products more efficiently across factories, warehouses, distribution centers, and stores. For example, with the help of transportation management software, a global consumer packaged goods company cut its carbon dioxide emissions (and costs) by routinely combining freight loads in order to maximize the use of single vehicles. Shippers can also use AI to help identify the most efficient, least trafficked routes, cutting fuel consumption. To make such improvements possible, companies use the latest SCM applications to track carbon emissions.

Companies are using blockchains to track the origin and movement of goods in their supply chains. The technology creates a digital ledger of supply chain activities, shared by participants and updated in real time. The ledger becomes a virtual path that partners can use to trace environmental practices and labor conditions. Companies can let consumers and other customers access the same information via QR codes on product labels.

Some SCM applications trace the origins of a product at the serial number level, track compliance with fair trade regulations, and calculate emissions related to purchased items. "Reducing supply chain

emissions is hard because they're not entirely in your control," Avesani notes. "You depend on your suppliers and, further up the value chain, your customers to cooperate and drive common actions." Without the right technologies, augmented by AI, it's a nearly impossible job.

Companies are starting to take environmental sustainability into account when procuring office supplies and other indirect goods. Among other things, such policies encourage organizations to reduce their use of plastics and increase their use of recycled materials, locally made goods, and nontoxic cleaning products.

When evaluating new vendors, sourcing and procurement teams increasingly stress sustainability. They may ask about a product's carbon footprint or whether farmers sprayed pesticides on the crops used to make textiles. They can track the answers using a supplier management application, which numerically scores suppliers on carbon emissions, waste, recycling, workforce practices, regulatory disclosures, and more.

Sustainability snapshot

60%
of global carbon emissions come from supply chains.

48%
of companies say they're under increasing pressure to improve supply chain sustainability.

53% & 44%
of European and US companies, respectively, have adopted net-zero carbon goals.

40%
of companies say they've seen revenue growth from investment in supply chain sustainability.

Sources: Accenture, MHI, MIT Sloan, DNV

3 Building a sustainability-aware workforce

Human resources organizations play a central role in promoting sustainability by recruiting employees who value environmental responsibility, as well as by engaging those employees through training and development programs. Employees will also look to HR to establish policies and guidelines that reflect a strong commitment to protecting the environment.

In recruiting talent, HR teams increasingly brand their companies as sustainability champions, aiming to hire people with shared values. For example, some recruiters outline the company's environmental commitment in ads and job descriptions. Onboarding is another chance for HR teams to promote the company's commitment to combating climate change, reducing waste, and boosting recycling.

Sustainability as a talent magnet

65%

of Gen Z workers say they're more likely to apply for jobs at organizations that have shown a commitment to sustainability than at those that haven't.

24%

of Gen Z and millennial workers say they've considered switching jobs to work for a more sustainable company.

Sources: Handshake, Deloitte

4 Lowering the IT organization's carbon footprint

IT organizations are also on the hook for helping to reduce their companies' carbon footprints. In addition to the security, performance, and other benefits of cloud computing, cloud services also tend to be more sustainable than on-premises data centers, thanks to economies of scale and green design.

Today's cloud data centers average 100,000 square feet in size and accommodate roughly 100,000 servers. In essence, they consolidate the water and electricity use of their customers. Cloud providers also invest heavily in energy-efficient power and cooling systems and computer hardware. A major European bank expects that moving its main database workloads from on-premises data centers to the cloud will help cut its database energy costs in half over the next few years.

Highly efficient workload architectures make a difference too—for example, by consolidating virtual machines onto fewer physical machines, thus lowering power consumption, or by using autoscaling to dynamically adjust workload processing, reducing idle time and energy waste.

A cloud provider's servers, routers, switches, firewalls, and other equipment should be designed for longevity, reuse, repair, and recycling. In general, a provider's commitment to sustainability—in its practices, not just in its marketing—is an important consideration.

How Oracle can help

As we've seen, consolidating and analyzing data is the key to tracking progress on sustainability goals. Oracle Fusion Cloud Applications Suite helps businesses manage the process more efficiently.

Oracle Fusion Cloud Sustainability captures and integrates sustainability data from Oracle Fusion Cloud applications—starting with accounts payable—to help improve reporting accuracy, transparency, and regulatory compliance. Emission factor mapping and ranking allow customers to specify which emission factors are the most accurate for calculations. The solution also lets customers track the activities most relevant and material to their business.

Within Oracle Fusion Cloud Enterprise Performance Management is a purpose-built application called Oracle Cloud EPM for Sustainability that enables organizations to collect ESG data from a variety of sources, helping them plan and measure ESG progress while providing reports to stakeholders and regulators.

A complementary application suite, Oracle Fusion Cloud Supply Chain & Manufacturing, can help customers reach their sustainability goals in a number of ways, mainly by helping them minimize waste and analyze environmental impacts throughout the entire lifecycle of their products. Oracle Cloud SCM also lets companies prioritize suppliers that source materials responsibly and manufacture and transport them in a sustainable way. And it helps companies track, measure, and analyze the environmental impact of how they manufacture, package, and ship their own products.

Features built into Oracle Fusion Cloud Human Capital Management can drive recruiting, communication, and engagement related to sustainability programs. Oracle Cloud Infrastructure (OCI) delivers both high performance computing and sustainability. Powered by renewable resources, OCI helps organizations reduce their carbon emissions and energy costs.

In running its own business, Oracle has set targets to achieve net-zero carbon emissions by 2050 and to halve greenhouse gas emissions across its operations and supply chains by 2030, relative to a 2020 baseline. These targets have been approved by the Exponential Roadmap Initiative, an accredited partner of the UN's Race to Zero. For additional details about Oracle's goals, view its Social Impact Datasheet (PDF).

Our commitment to sustainability

Oracle is helping utilities, cities, retailers, banks, and other organizations worldwide define their environmental sustainability goals, measure their progress, and comply with emerging regulations.

Learn more

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Call +1.800.ORACLE1 or visit oracle.com

Outside North America, find your local office at oracle.com/contact

1   "The Global Benefits of Reducing Food Loss and Waste, and How to Do It," World Resources Institute.
2   "Why ESG performance will affect companies' access to capital," KPMG.