

ERP in the eco-conscious organization

The nexus between environmental and financial achievements



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Key takeaways

Sustainability has soared to the top of the corporate agenda. Running a sustainable business is no longer optional it's essential. The IBM Institute for Business Value (IBV) and SAP SE have identified a cohort of environmental sustainability high achievers. These organizations tend to:

- Integrate ERP and sustainability initiatives to cascade environmental data and decisions deep into core operations
- Rely on ERPs to record, report, and act on reliable data across business silos
- Engage ecosystem partners with ERP data, standards, and communication protocols on sustainability targets and achievements
- Produce stronger financial results, including reporting profitability 46% more than underperforming peers
- Deliver better environmental outcomes, with almost 60% of high achievers reporting better environmental results than their competitors
- Make bold, public commitments and outline specific sustainability actions
- Create more resilient businesses, with 84% saying sustainability drives innovation.

Introduction

The urgency to embrace sustainable change, and the consequences for not doing so, have never been higher. The UN's "Climate Change 2023: Synthesis Report" finds that human-caused climate change is already affecting many climate and weather extremes in every region around the globe. In this decade, we need to take rapid, deep, and sustained action to reduce projected impacts to societies and ecosystems.¹

Sustainability has soared to the top of the corporate agenda. Running a sustainable business is no longer optional—it's essential. In 2022, CEOs cited sustainability as their highest priority 37% more frequently than just one year prior.² C-suites overall have come under tremendous pressure from boards, investors, customers, employees, and regulators to reduce the negative impact of their carbon emissions and waste and deliver profitable, sustainable, low carbon outcomes.³

A CEO's desire to "go green" is not the only driving force behind sustainable business transformations. Regulations that demand environmental improvements and require both financial and nonfinancial disclosures are rapidly expanding around the world.⁴ Managing a business to comply with existing and emerging regulations is tremendously complex. Even so, running a sustainable business can create a competitive advantage.⁵ So how do C-suite executives both measure their sustainable business impacts and manage a sustainable business?

They need to see around corners, relying on information, often managed in their enterprise resource planning (ERP) system, to make business decisions every day. Yet, when it comes to running sustainably, most organizations today operate with disconnected disparate sources of the critical business information they need to make meaningful progress.

Sustainability performance needs to be managed with the same rigor as financial performance.

Sustainability performance needs to be managed with the same rigor as financial performance. Most businesses simply do not have the business data transparency they need to truly run sustainably. Businesses need to treat their sustainable business data with the same level of precision as their financial data. The strategy is to use the data "backbone" of any organization—the ERP system.

To find out how organizations use ERP to attain sustainability goals, the IBM Institute for Business Value (IBV) and SAP, in collaboration with Oxford Economics, surveyed more than 2,125 senior executives involved in their organizations' environmental sustainability strategies—around the world and across industries. The surprising result: those who outperform their competition in both environmental and financial outcomes also boast the most deeply engaged ERP. (See "Research and methodology" on page 23.)

ERP, the technology of record touching virtually every organizational business process, can connect financial and environmental goals, keeping metrics reliable and accessible. In conjunction with other systems, ERP enables cost-transparency and visibility—allowing environmental, regulatory, and business-critical decisions to be made with improved consistency and reliability.

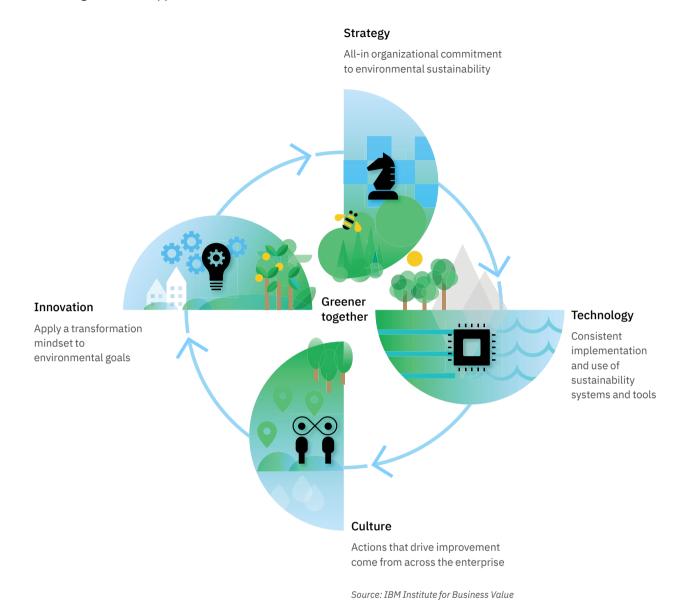
In short, actions must align with commitments, as the World Business Council for Sustainable Development (WBCSD) emphasized in its recent paper on carbon accounting. By giving businesses the capability to record, report, and act on enterprisewide data, ERPs help resolve many of the complex challenges and demands of sustainability.⁶

A group of high achievers emerged from our study. Of the more than 2,125 business leaders surveyed, 15% actively prioritize environmental sustainability, implementing concrete, well-publicized plans to achieve goals at a far higher rate than their peers. We call this cohort the Environmental Sustainability Enabled (the Enabled), because in addition to prioritizing environmental improvement, they all also rely on ERP data structures to address sustainability goals.

A second group comprising 36% of businesses surveyed are environmental naysayers. We call them the Environmental Sustainability Reluctant (the Reluctant). This group does not view environmental sustainability as important to their success and their commitment is somewhere between low to nonexistent.

FIGURE 1

Greener together: A holistic cross-organizational approach



The Enabled, with their emphasis on ERP, experience profitability overperformance 46% more than the Reluctant. We have identified four essential elements of Enabled organizations' environmental and financial success (see Figure 1):

- Environmental strategy encompasses an all-in organizational commitment to specific targeted outcomes.
- A spirit of *innovation* and transformation is applied to environmental goals.

- Organizational *culture* inspires and rewards actions that drive measurable improvements.
- Technology is deployed to accelerate environmental progress by setting strategic priorities, applying datagenerated insights and innovation.

A successful sustainability initiative that turns strategy into action requires organizations to embrace an end-to-end holistic approach. Targets are achieved by building sustainability into operations, processes, data, and regulatory compliance, both internally and across ecosystems. This is where ERP can be a game changer. ERP is the technical foundation for executing operations, processes, and data.

FIGURE 2

Customers, investors, employees, regulators, and companies are increasingly focused on sustainability targets7

Uncovering hidden possibilities with ERP

How can you change what you can't see? Much of sustainability data can be difficult to attain due to siloed business processes, unreliable data, and misaligned business priorities. Hidden environmental sustainability costs can be made visible when ERP is used to manage processes and data. With this visibility, people can see the impact of their decisions and trust the results being reported. This trust can accelerate the culture change needed to support and accelerate overall sustainable business transformation.

Enabled organizations place environmental sustainability on par with financial performance because they see sustainability fueling financial results (see Figure 2). They are characterized by a clear vision, innovative solutions, engaged culture, empowered people, and enterprise-wide, consistent systems of engagement and record. And importantly, having reliable information on both financial and nonfinancial metrics can help organizations avoid accusations of greenwashing.

In the three sections that follow, we explore more deeply what it means to be Enabled in practice. We explore the key role of ERPs. And we present ways to optimize the new business opportunities that sustainability unlocks. An action guide offers specific steps that can help you become more enabledlessons that Reluctant colleagues ignore at their peril.

Customers



of buyers are changing preferences based on sustainability

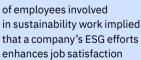
Investors

of all professionally managed assets could be

ESG-mandated by 2025



Employees





Regulators

ESG standards/

frameworks currently exist



Companies



of EBITDA could be at stake from

Chapter 1.

Outperformance: Strategy + culture + innovation

On January 5, 2023, the European Union implemented the Corporate Sustainability Reporting Directive (CSRD). Impacting 50,000 companies, the directive mandates reporting specific sustainability impacts and issues.⁸

Organizations that previously resisted environmental-related priorities find themselves racing to play catch-up—and could learn much from the Enabled formula for outperformance.



Strategy:

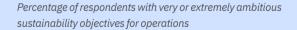
A whole-enterprise approach

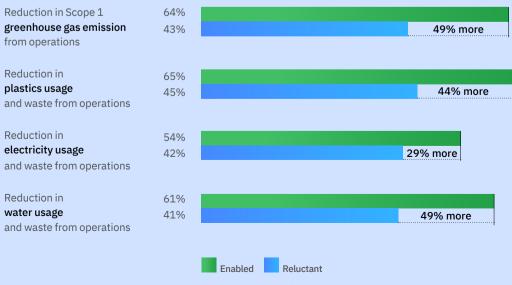
Leaders of Enabled organizations recognize that, when applied to operations, a sustainability mindset can trigger thousands of small decisions across the breadth and depth of their organization—all of which can add up to significant environmental progress. Therefore, it should be no surprise that 48% more of the Enabled make sustainability an enterprise-wide priority than their Reluctant peers (see Figure 3).

When it comes to setting goals for Scope 1 greenhouse gas emissions in operations, for instance, the Enabled outpace the Reluctant by a whopping 49%. (For context, 85% of all organizations express concern about greenhouse gas emissions overall.) But feasibility is another question entirely. Research shows that only 9% of organizations are currently able to quantify their total emissions comprehensively. 10

FIGURE 3

Setting ambitious sustainability goals for operations



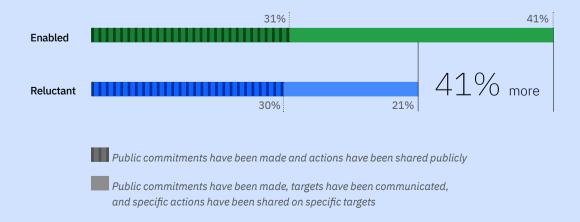


The challenge is further compounded by difficulties in directly monitoring beyond Scope 1, which measures all direct emissions from an organization. Scope 2 includes all indirect emissions, such as electricity purchased and used. Scope 3 encompasses all indirect emissions from an organization's value chain—and contributes the greatest share to an organization's carbon footprint.¹¹ To even attempt monitoring Scopes 2 and 3, effective ERP-driven ecosystems need to be in place and coordinating with other enterprise systems. This is where an ERP system, together with a carbon accounting solution, can help make a difference.

Enabled organizations also tend to make bold commitments and outline specific sustainability actions. And they usually do it *publicly*, with 41% more of them likely to engage in courageous public transparency than their diffident Reluctant counterparts (see Figure 4).

FIGURE 4

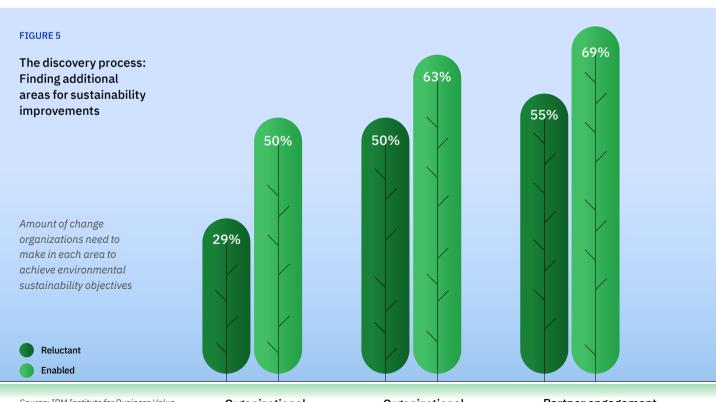
41% more Enabled organizations publicly commit to sustainability goals



Culture: The power of together

Business leaders in Enabled organizations better understand the importance of a collaborative culture. They recognize that without people, processes, and systems organized behind them, sustainability goals cannot effectively be measured, monitored, or acted upon. Yet activating this depth of connection is not simple. Business leaders—even the Enabled—struggle to replace siloed organizations and attitudes with a collaborative culture.

Decades of experience tell us that culture is notoriously hard to change. But sustainability can serve as a catalyst for business transformation and cultures to evolve. It serves as a rallying point, providing the focus to innovate and rethink processes and roles. Enabled organizations reap the rewards of this business transformation more frequently than Reluctant peers. For example, according to our research, 72% more Enabled identified necessary organizational changes to execute sustainability strategies. 26% more Enabled discovered modifications needed to organizational culture (see Figure 5).



Source: IBM Institute for Business Value and SAP survey of 2,125 sustainability-focused executives, in collaboration with Oxford Economics.

Organizational structure

Organizational culture

Partner engagement and governance

Water Transmission and Technology Company of Saudi Arabia¹²

Innovating for purpose

Serving one of the most water-scarce regions of the planet, the Water Transmission and Technology Company of Saudi Arabia (WTTCO) operates a large water transmission operation, a challenge that was made even more significant by the Kingdom's ambitious growth plans and sustainability targets set forth in its Vision 2030 initiative.

WTTCO could not be held back by outdated legacy systems, data silos, and a technology infrastructure that did not empower frontline decision-makers with the insights they needed to increase efficiency and reach ambitious growth targets. Therefore, the organization set out to effect a full-scale digital transformation with SAP S/4HANA® at its core.

With the help of IBM Consulting, the team not only automated over 350 business processes and reduced IT costs significantly, but also set up a single integrated instance of SAP S/4HANA with SAP® SuccessFactors® solutions. This gave decision makers the information they needed to make the right decisions about how to optimize operational efficiency and increase clean water throughput.

The team plans to continue the program of employeedriven innovation by exploring ways to combine the machine learning implementation service for enterprise process automation with SAP Conversational AI and SAP Intelligent Robotic Process Automation services to help further reduce IT maintenance costs and reduce wastewater.

Source: SAP Innovation Awards.

Innovation: Insights create action

We found that 84% of Enabled business leaders believe that environmental sustainability drives innovation. We expect that to increase to 96% by 2025. And it seems to be catching on. While only 60% of Reluctant business leaders believe in a relationship between sustainability and innovation today, by 2025 our forecast suggests a jump to 96%—pulling even with Enabled leaders that same year.

Strategy, culture, and innovation all rely on one foundational component—data, and the technology to analyze and deliver that data as actionable insights. Accessing, understanding, and acting on data that is often siloed, manual, and in diverse formats is a daunting challenge.

Which brings us to ERP.

Chapter 2.

ERP advantage: Technology + data + process

ERP has expanded far beyond its financial reporting origins. ERP capabilities, along with other enterprise systems, can provide a "green lens" into an organization, helping manage critical data to help companies reduce emissions, waste, and environmental impact. And, through systemwide controls and reporting, ERP helps proactively manage regulatory requirements, providing auditable reports.¹³

In particular, regulations are global, growing, and require the same rigor as financial compliance to local and global standards and reporting. Case in point: As part of the Inflation Reduction Act of 2022, organizations that exceed new federal limits on harmful substances (methane, for example) can face significant fines.¹⁴

Enabled organizations are much further along in their use of ERP for sustainability and innovation. As many as *94% more* Enabled business leaders believe ERPs help them manage manufacturing sustainability goals. And 31% more say ERP is helping them achieve sustainability goals around labor management (see Figure 6).

FIGURE 6

Areas where ERP helps manage environmental sustainability objectives

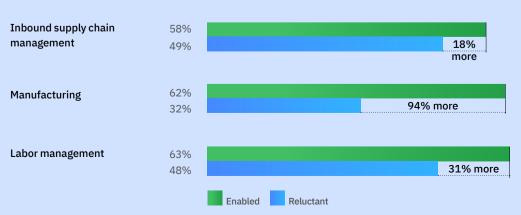
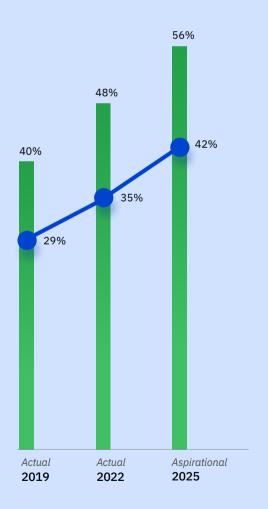


FIGURE 7

Percentage of environmental sustainability data made visible to employees



Source: IBM Institute for Business Value and SAP survey of 2,125 sustainability-focused executives, in collaboration with Oxford Economics.

Enabled business leaders also count on ERP solutions to capture *relevant* sustainability data, with 47% of sustainability performance data collected in their ERP in 2022, and 55% expected to be collected by 2025. While aggregating less than half of sustainability performance data might seem low, it is important to focus on quality not quantity. Most commonly captured sustainability metrics correspond to those with the largest environmental and financial impacts. For example, Enabled organizations report accumulating almost 70% of their carbon capture and energy use metrics in their ERP—a significant percentage.

Among both Reluctant and Enabled organizations, a trend toward making environmental performance data visible to employees is emerging (see Figure 7). When data and insights are available to employees, they are able to make smarter decisions and better trust the results. Each small decision made to reduce emissions and waste creates a cumulative impact, contributing to business success and helping society at large. Taking the right action now could result in the transformational change essential for a sustainable, equitable world.

And this positive cycle is not constrained to specific organizations. Enabled businesses use ERP systems to establish standardized environmental measures across ecosystems 39% more than the Reluctant. And 43% more Enabled use ERP to establish shared environmental targets. When employees have access to relevant data and are enabled to take action, they can implement and sustain real change. The lesson here? In ecosystem economies, ERPs help perpetuate standardized, shared sustainability initiatives—thereby helping improve efficiency and productivity of an ecosystem as a whole.

Iberdola

Building a greener supply chain¹⁵

Iberdrola is a global energy supplier—the third largest in the world by market capitalization. With a commitment to reach carbon neutrality by 2030 in Europe and 2050 globally, the company wants to encourage others within the ecosystem to take active steps toward mitigating climate change.

Iberdrola set an ambitious goal to ensure that at least 70% of its core suppliers have effective sustainable development policies and standards in place. The company's existing on-premises supplier relationship management (SRM) system offered only limited governance features for company-wide purchasing and provided no way to assess new and existing suppliers against sustainability criteria. It was also becoming increasingly expensive and time-consuming to maintain and manage.

As a result, Iberdrola migrated to the all-cloud SAP® Ariba® Supplier Management portfolio that integrated with its ERP solution, helping simplify the integration of procurement with core business processes such as finance and capacity and resource planning. To help ensure best practices during the implementation of the SAP Ariba solutions, Iberdrola enlisted the support of IBM Consulting.™ Taking advantage of templates generated by IBM from successful deployments of SAP Ariba solutions at other global companies, the combined team designed a prototype of Iberdrola's new SAP Ariba software environment and configured the solution step by step following a carefully planned waterfall methodology.

This new solution helps Iberdrola score suppliers on their commitments to sustainability and offers a detailed view of the environmental impact of the supply chain. Iberdrola can also use the tool to create a clearer set of actions for suppliers to meet its sustainability objectives, facilitating positive change across the energy sector.

Perspective

Environmental sustainability drives improved bottom-line performance

Here are several ways organizations can be environmental and financially prepared:

Tighten end-to-end manufacturing to reduce cost.

Organizations that design and source for emission reduction and circularity can reduce waste and lower downstream input costs.

They can develop products that limit carbon emissions and leverage single-use material that can also be deconstructed at the end of its lifespan.

Emphasize sustainability for business resiliency.

Enabling sustainable commerce/re-commerce by extending sourcing solutions helps organizations respond to future supply chain and geopolitical shocks more quickly. At the same time, changes can reduce cost in a crisis so that organizations can focus on new revenue opportunities ahead of competitors. ¹⁶

Accelerate innovation at scale.

Focus more time on conceiving or adapting new business models that reimagine how products are delivered, sold, and serviced. Be open to rental, reuse, and "products as a service" which can generate an untapped sustainability-first set of opportunities.

Repurpose materials.

Technologies linked to the ERP and other enterprise systems can track, collect, reuse, and recycle to reduce. All of this can help optimize investments and increase RoI.

Chapter 3.

Business opportunity: Go green and grow green

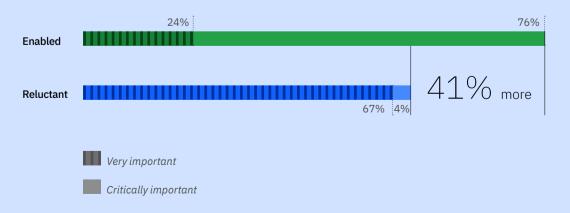
Organizations need to go green but also need to grow green—and the two need not be exclusive.

In fact, Enabled organizations view sustainability as critical to their long-term success. We found that 41% more of them hold this belief than their Reluctant peers (see Figure 8).

FIGURE 8

Believers in the importance of environmental sustainability to success in 2025

Percentage of respondents who believe environmental sustainability is very or critically important to success in 2025



Salzgitter AG

Progressing toward zero-carbon steel¹⁷

Salzgitter AG has a long history in the steel industry and is one of the top European steel companies. Currently, the company's existing method of steel production adds around 1%, or 8 million tons, to Germany's carbon footprint.

SAP and Salzgitter AG are collaborating to speed up the German steel manufacturer's sustainable digital transformation and provide the groundwork for more environmentally friendly steel production. They are doing so by moving toward cutting-edge SAP technologies and using sustainability solutions from the SAP product portfolio.

As well, with a goal of reaching carbon neutrality in crude steel production by 2033, Salzgitter AG seeks to aggressively explore opportunities to grow its leading position in the green steel industry. From the year 2025 forward, Salzgitter plans to begin producing carbon-zero steel.

Activating consumers and employees

Recent IBV research found that half of consumers globally pay an average premium of 59% for products branded as sustainable or socially responsible. And almost 9 in 10 consumers said companies should integrate environmental concerns into their products, services, and operations to a greater extent than they have in the past.

Both Enabled and Reluctant organizations recognize an increase in customer concerns about the environment. While employees—43% of the Reluctant and 69% of Enabled—were involved in sustainability efforts in 2019, by 2025, the equivalent numbers are expected to be 93% and 99%, respectively. This remarkable turnaround aligns with the need to embed sustainability in core business processes.

Sustainability reaps rewards

Recent research found that businesses with the highest emphasis on sustainability initiatives had 21% higher earnings than those in the bottom quartile. Our new survey echoes those findings. Enabled businesses, with their emphasis on sustainability and reliance on ERP, report profitability performance 46% higher than Reluctant peers. They also report engagements with ecosystem partners on sustainability at a substantially higher rate.

The "sustainability is good business" gap is closing between the Reluctant and Enabled, and by 2025 is expected to be relatively small. While the Reluctant report less action to close this gap, their consensus is worth noting and is a positive sign for expanded and more ubiquitous sustainability measures (see Figure 9).

FIGURE 9

Trending up: Respondents who believe environmental sustainability investments yield large positive returns

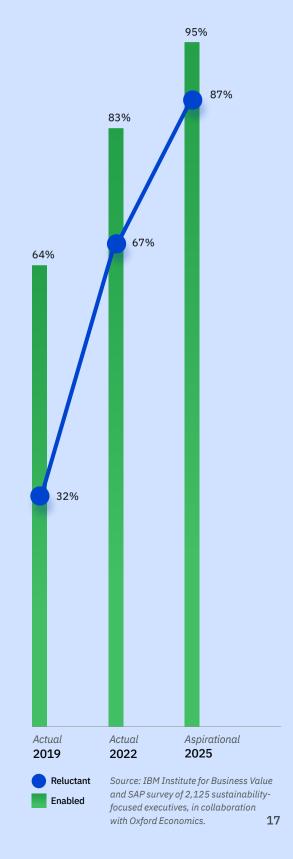
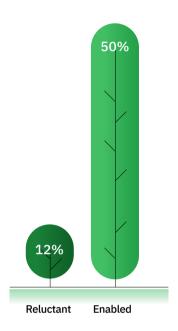


FIGURE 10

Respondents who characterize environmental sustainability as an enormous opportunity



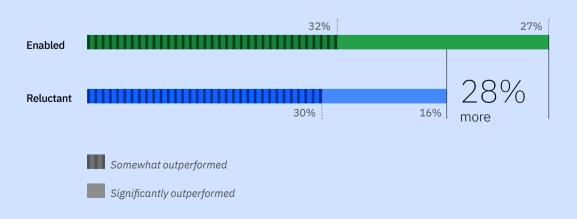
Source: IBM Institute for Business Value and SAP survey of 2,125 sustainability-focused executives, in collaboration with Oxford Economics.

Radical collaboration

The Enabled view environmental sustainability as an opportunity, not a burden—and they hold this outlook at more than four times the rate of less savvy Reluctant organizations (see Figure 10). And they are confident—almost 60% report that their environmental sustainability programs delivered better results than competitors over the last three years (see Figure 11).

Remember: The use of ERP systems is a distinguishing characteristic of the Enabled. By embedding sustainability into ERP, business processes, and across the ecosystem, the actionable insights made visible can fuel strategies, drive innovation, and shape a culture that can deliver on the promises made to both regulators and society. This is more than aspirational. It's doable, and it's essential.

Environmental sustainability performance against competition over past three years



Action guide

Here, we highlight specific steps that you can take to advance sustainability with ERP.

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Use ERPs to embed environmental sustainability throughout the enterprise.

Integrate environmental data, financial and nonfinancial information, metrics, and performance dashboards into enterprise processes and systems using the extensive reach of ERP. Real results are not driven by siloed programs; they are generated when core systems are used for a common purpose.

- Use your current or newly implemented ERP system as a starting point. Engage internal and/or external sustainability consultants, along with your CFO, Chief Sustainability Officer (CSO), and CIO, to transform your ERP and other enterprise capabilities into a coordinated system that can enable you to record, report, and act on sustainability goals.
- Tap ERP's potential not just to monitor progress, but to reveal areas for improvement.
- Share environmental targets with ecosystem partners, helped by ERP connections and industry standards.

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Be the boldest member of the ecosystem.

Lead partners to a greener future by promoting the use of common environmental metrics, sharing successful solutions, and orchestrating collective action around strategic, long-term programs.

- Use the power of the purse to encourage environmental sustainability among suppliers.
 By setting the highest ESG standards in your ecosystem, the Chief Procurement Officer (CPO) will lead the vendors, suppliers, and partners in your ecosystem to track, publish, and improve their green credentials.
- Share savings and profits from successful environmental innovations with ecosystem overperformers who contribute to their success.
 CEOs who create new business models that add value to and extract value from the environmental sustainability market continue to attract top talent and can satisfy demanding stakeholders.
- View operational and supply chain data as a valuable asset that other CIOs and COOs can profit from. Share it, when possible, for mutual benefit.

Action guide

(continued)

03

Go green to be seen.

Environmental sustainability investments tend to generate positive returns. Organizations that have made public commitments toward becoming environmental sustainability overperformers should commit between 3% and 8% of revenue to achieve those goals.

- Investigate investment ranges across your own industry.
- Use ERP and other enterprise systems to combine financial and nonfinancial data and provide actionable insights to calculate ROI.
- Engage the COO and CFO to transparently align sustainability investments and results with commitments.

$\bigcirc 4$

Break the cultural speed limits around environmental ambitions.

Constraining ambitions to limit organizational impacts can disappoint stakeholders. Ambitious organizations usually invest in digital transformation, and aim for early returns, not perfect outcomes.

- Seek inspiration and use cases from environmental pioneers in your industry.
- Leverage data from ERP and other systems to record, report, and create actionable insights that drive iterative, measurable progress.
- Enlist C-suite executives to evangelize actionable sustainability principles.

0.5

Upend compensation structures to incentivize environmental innovation.

Pay well for the best ideas. Tie compensation to essential financial and environmental outcomes, incentivizing cross-team idea development.

- Appoint divisional, department, and business area high achievers to lead innovation initiatives that report to an empowered environmental innovation owner.
- Encourage large populations of employees to telegraph ground truth, challenges, and ideas directly to the COO, CFO, and CSO helped by the ERP.
- Avoid laborious review processes and approval mechanisms in favor of smaller, more timely employee rewards. Shortening the distance between impactful innovations and a positive outcome for innovative employees is invaluable.

06

Nurture a culture of sustainability.

Weave environmental metrics (actions, targets, and results) into everyday decisions and actions across the whole business. To achieve essential sustainability outcomes, all employees must engage in the environmental sustainability imperative.

- Make it clear that opting out should not be an option. Every organization has skeptics—but allowing them to undermine the environmental sustainability program slows progress.
- Cascade organizational-level environmental commitments throughout the organization so that everyone from the CEO to frontline staff see the impact of their decisions.
- Include environmental sustainability as a core part of 360-degree annual review processes.
 Employees should be accountable to management, peers, and direct reports for the impacts of their individual environmental decisions.

\odot 7

Channel stakeholder agitation to accelerate progress.

Establish and align environmental priorities with the sense of urgency about environmental progress expressed by investors, employees, and customers.

- Fund environmental initiatives by having the CFO encourage investors to enable bold public commitments with an equally bold transformation program.
- Rely on HR high achievers, including the CHRO, to guide employees who care most about environmental sustainability to positions of authority. Passion is culturally contagious.
- Share environmental sustainability progress—
 including struggles, failures, and miscues—
 with customers helped by using ERP-enabled
 sustainability metrics. Organizations that share
 only successes erode customer trust.

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Stacy Short is a Vice President in IBM's Consulting business. She leads IBM's SAP Global Partnership for Consulting and IBM's Evolution Partnership with SAP. In her current role, Stacy uses her deep SAP experience, her process background, and her strong SAP relationships to work collaboratively with customers and IBM and SAP leaders to help clients deliver their digital transformation journeys.

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Research and methodology

In November and December 2022, the IBM Institute for Business Value and SAP, in collaboration with Oxford Economics, surveyed 2,125 business leaders on the topic of sustainability.

Executives surveyed include CEOs, Chief Sustainability Officers (CSOs), COOs, CFOs, CIOs, CISOs, CTOs, CHROs, and CMOs. Respondents were selected only if they had extensive knowledge of their organization's sustainability efforts.

18% of respondents were located in North America, 10% in Latin America, 25% in Europe, 14% in the Middle East and Africa, 6% in each in India and in Mainland China, 5% in Japan, and 16% in the rest of Asia. Respondents came from 13 industries. Average organization size was \$25 billion in annual revenue. Multiple statistical analyses were applied to the data to better understand underlying attitudes and behavior.

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Sustainability as a transformation catalyst

"Sustainability as a transformation catalyst: Trailblazers turn aspiration into action." IBM Institute for Business Value. January 2022. https://ibm.co/sustainability-transformation

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