GEN AI FOR THE GLOBAL GOALS

The Private Sector's Guide to Accelerating Sustainable Development with Technology

United Nations Global Compact

accenture

“The 2030 Agenda — our global blueprint for peace and prosperity on a healthy planet — is in deep trouble. AI could help to turn that around. It could supercharge climate action and efforts to achieve the 17 Sustainable Development Goals by 2030. But all this depends on AI technologies being harnessed responsibly and made accessible to all."

António Guterres
United Nations
Secretary-General

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Sanda Ojiambo
Assistant Secretary General and CEO,
United Nations Global Compact

The world is wavering on the 2030 Agenda for Sustainable Development and achieving the Sustainable Development Goals (SDGs or Global Goals). Increased geopolitical tensions, inequalities, and climate change impacts have hindered progress and added to the complexity of the sustainability landscape.

Gen AI for the Global Goals outlines the private sector's opportunity to use Generative AI (Gen AI) as an accelerator for SDG action. The private sector's access to capital, wealth of data, and ability to act quickly across geographies creates a unique opportunity for impact. Yet, the private sector must pay special attention to the unique risks of an explosion in Gen AI usage.

Indeed, the UN Secretary General's high-level multistakeholder advisory body on AI interim report notes that AI applications could potentially be a game changer in helping to meet the SDGs, but also that AI poses risks to cyber security, privacy, and cultural diversity.

To this end, several global initiatives are underway that aim to provide the necessary frameworks for responsible investment, development and deployment of AI models, including Gen AI. Collectively, these initiatives call on stakeholders across the AI value chain to adhere to long-standing, internationally agreed principles and standards for responsible, rights-based conduct.

For nearly 25 years, the UN Global Compact has been the call to companies to align their operations and strategies with its Ten Principles covering human rights, labour, environment, and anti-corruption.

Anchored in international standards, the Ten Principles of the UN Global Compact are the guiding framework to ensure core business models are principles-based, and they can also be applied to guide companies towards responsible AI models as the private sector makes this technological leap.

This report acknowledges and complements existing UN-level efforts towards in-depth analysis and recommendations on the governance of AI for humanity and the Global Digital Compact. Drawn from a multi-stakeholder consultative process, the report highlights examples of tangible actions being taken today to help private sector leaders consider how they can support the advancement of the SDGs with Gen AI in their strategies and operations.

In compiling this report, we are grateful to many colleagues at the UN Global Compact and our collaborators at Accenture for their insights and contributions. We would also like to express our appreciation to the business leaders and other stakeholders who were critical to the development of this report.

As we approach 2030, the stakes are high if we want to secure a prosperous future for people and the planet outlined in the SDGs. It is time for the private sector to take bold, ambitious action to move us forward faster.

THE TEN PRINCIPLES OF THE UNITED NATIONS GLOBAL COMPACT

HUMAN RIGHTS

1. Businesses should support and respect the protection of internationally proclaimed human rights; and
2. make sure that they are not complicit in human rights abuses.

LABOUR

3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
4. the elimination of all forms of forced and compulsory labour;
5. the effective abolition of child labour; and
6. the elimination of discrimination in respect of employment and occupation.

ENVIRONMENT

7. Businesses should support a precautionary approach to environmental challenges;
8. undertake initiatives to promote greater environmental responsibility; and
9. encourage the development and diffusion of environmentally friendly technologies.

ANTI-CORRUPTION

10. Businesses should work against corruption in all its forms, including extortion and bribery.

The Ten Principles of the United Nations Global Compact are derived from: the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption

FOREWORD: ACCENTURE

Stephanie Jamison
Global Resources Industry Practice Chair and Global Sustainability Services Lead, Accenture

Arnab Chakraborty
Chief Responsible AI Officer, Accenture

Louise James
Global Co-Lead, Accenture Development partnerships

The promise of technology to unlock change continues to inspire the private sector towards groundbreaking innovation, and the monumental advancements brought to us through the revolutionary technology of Gen AI are no different. Gen AI is rapidly transforming daily operations and productivity across the private sector. Accenture research shows that 97% of executives believe Gen AI will transform their industry over the next three to five years. Despite exciting growth, we are still at the early stages of this technology; we must continue to learn and evolve our approach to mitigate risk, starting with intentional design when identifying and refining use cases.

Gen AI isn't just about increasing productivity. It has the potential to revolutionize how we approach sustainable development and offers new opportunities to drive progress forward. At this early stage, business leaders have a unique opportunity to chart the course for Gen AI's impact on people and the planet. With the SDGs as our North Star, we can consider how the private sector can use Gen AI to support our global push for sustainable development.

This report shares key use cases across Gen AI for sustainable development—empowering teams towards operational efficiency, sustainable supply chains, innovation, and clear communication and reporting. However, private sector leaders must balance the upside against the unique risks Gen AI introduces. This report outlines findings and best practices from our extensive experience developing and deploying Gen AI both internally and with our clients. By following this guidance, we can achieve the promise of Gen AI to accelerate progress towards the SDGs.

We are grateful to the UN Global Compact for our long-standing partnership and to its teams for their insightful collaboration throughout this exciting and critical work. We look forward to our continued work together as we tackle the global issues behind the SDGs.

INTRODUCTION

INTRODUCTION

> **"We believe in the potential of this technology and think if it's implemented with the appropriate guardrails and principles, Gen AI can directly impact sustainable development in a range of areas, including increasing access to clean water and sanitation, reducing hunger and poverty, enabling affordable clean energy, building sustainable cities and communities, and addressing overall climate action."**
>
> Greg Ulrich, Chief AI and Data Officer, Mastercard

Global challenges, including ongoing and reignited geo-political conflicts, the climate crisis, high inflation, and lingering effects of the COVID-19 pandemic, have converged to significantly hinder progress on sustainable development. We are currently on track to meet only 17% of the Sustainable Development Goals (SDG)[1] targets by 2030.[1] All 17 SDGs, such as Gender Equality and Climate Action, are complex and require multiple stakeholder collaboration. As global leaders juggle multiple issues concurrently, progress on sustainable development is becoming even more challenging, widening the gap between action and goals.

At the same time, advances in technology across fields ranging from computing to medicine and beyond are transforming our societies and economies. The rise of Artificial Intelligence has had a particularly wide impact, with machine learning powering analysis, decision making, and resource optimization across sectors and company sizes. In fact, nearly 75% of large companies have already integrated AI into their business strategies.[2]

Generative AI (Gen AI) in particular has captured the attention of the private sector due to its potential to unlock new business models and technologies. An overwhelming majority (97%) of executives believe Gen AI will transform their industry and play a major role in their strategies over the next three to five years.[3] Of these executives, 31% have already made significant investments in related initiatives, and 99% plan to amplify their investments.[3] As a result, global investments in AI are projected to reach $200 billion by 2025 [4], while the market for Gen AI could reach $1.3 trillion by 2032.[5]

1. The SDGs are a set of 17 global objectives that aim to end poverty, protect the planet, and ensure peace and prosperity for all.

The reason for this interest? Gen AI can facilitate unprecedented access to hyper-specific, tailored information, accelerate innovation through cross-disciplinary thinking, and increase productivity to help businesses overcome the converging headwinds and complex problems which make sustainable development progress so challenging.

Imagine tackling multiple SDGs by applying Gen AI through targeted actions across the agricultural value chain. At the start, Gen AI can help farmers better forecast weather and crop yield, develop and optimize biological pest control methods, predict soil erosion and suggest mitigation measures, and help with sustainable crop breeding. Next, Gen AI can help with the agricultural supply chain, from optimizing supply chain logistics to forecasting demand to better manage food spoilage, helping bridge the gap between the one billion meals of edible food wasted each day and the 783 million people affected by hunger each year.[6] Gen AI can also help workers along the agricultural supply chains by identifying high risks for human rights violations, providing tailored educational and training programs, and acting as a sustainability knowledge disseminator. Finally, Gen AI can help consumers better manage food waste, helping divert from landfills worldwide and promoting circular economy practices. Each of these applications represent an opportunity to create business value while acting as an accelerator for impact across the SDGs.

> **The value of data became relevant even before we started talking about Gen AI. Early on, with machine learning, we saw how data could improve our service and delivery times. Now, leveraging AI with all this standardized and codified data brings significantly enhanced value. We have a robust data storage network and history to leverage."**
>
> Beatriz Tumoine, Global Social Impact Director, Cemex

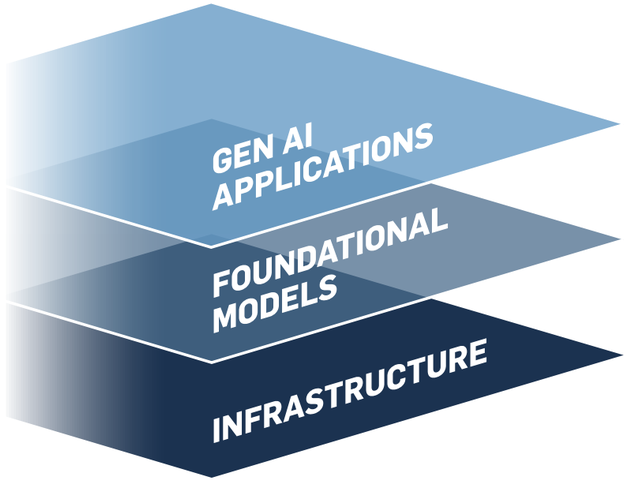
Yet, we are still in the nascent stages of the Gen AI revolution, ironing out wrinkles in the technology and increasing our understanding of the related environmental and social risks it brings. Failing to manage these tradeoffs of Gen AI use could lead to the technology causing more harm than good.

The world is at a critical juncture. Gen AI, if implemented responsibly, has the potential to accelerate the private sector's progress on sustainable development and help bridge the gap to 2030. With this report, the UN Global Compact gives private sector leaders the tools to develop and deploy Gen AI responsibly and to use Gen AI to advance sustainable development.

WHAT IS GEN AI?

Artificial Intelligence is a machine-based system that can replicate human thinking, converting various inputs into outputs ranging from predictions or recommendations to content.[7] Gen AI is a type of artificial intelligence which can generate new content beyond what it has already been exposed to.[8] It does this by identifying and replicating patterns in existing text, images, or other data to create realistic new data. Common consumer Gen AI products include GPT-4/4o, Gemini, Claude, and Midjourney. While most of the world's attention is currently directed at Large Language Models (LLMs), which use large text databases to mimic all kinds of human language, models have been created to generate anything from protein structures to memes.

General purpose "foundation models" (trained on large and broad data sets) are the core of the Gen AI ecosystem. These models can be tuned and supplemented with proprietary data to create use-specific Gen AI applications. Applications and foundation models typically rely on cloud providers for the computational infrastructure needed for training and inference.[2] In turn, these cloud providers rely on hardware providers for the actual computers running the calculations, especially graphics processing units (GPUs).



GEN AI APPLICATIONS
Provide applications that customize foundation models using additional data and tuning to solve specific business problems

FOUNDATIONAL MODELS
Provide models, trained on diverse sets of data (often the open web), that can be leveraged to develop custom Gen AI applications

INFRASTRUCTURE
Provide infrastructure to host, compute, and store Gen AI workloads using purpose-built hardware (e.g., GPUs) through cloud providers or onsite

Figure 1: Gen AI Tech Stack

2. Training is the set-up of a model while inference is the use of a finished model.

> **It's hard to manage or improve what you can't measure. When you layer Gen AI on top of existing data, you can unlock insights and uncover unbelievably powerful opportunities."**
>
> Emilio Tenuta, Senior Vice President and Chief Sustainability Officer, Ecolab

> **For someone who has been working on income inequality for my entire life, seeing an opportunity to train people quickly to help them create wealth is just incredibly exciting."**
>
> Shamina Singh, Founder and President of Mastercard's Center for Inclusive Growth and EVP, Sustainability, Mastercard

> **The greatest potential of Gen AI is having a collective intelligence just a prompt away and embedding that in business processes to allow companies to make better decisions."**
>
> Vikram Nagendra, Director of Corporate Sustainability, SAP

> **The biggest benefit Gen AI can deliver is contextual, localized strategy. This can help deliver contextual and specific actions and recommendations, helping unlock unprecedented SDG action."**
>
> Gagandeep K. Bhullar, Founder and CEO, SuperHumanRace

> **Gen AI models are becoming more powerful and knowledgeable, with the ability to solve tasks we previously couldn't imagine. The speed at which this technology is developing is astonishing and incredibly exciting."**
>
> Hilda Kosorus, Director of Data and AI Center of Excellence for EMEA, Crayon

WHY IS GEN AI EXCITING FOR BUSINESS?

Gen AI's potential to create business value comes from its three foundational capabilities: acting as a Data Miner, an Insight Navigator, or a Knowledge Amplifier. When combined with other business capabilities, Gen AI can help companies lower costs through increased operational efficiency, streamline management of complex value chains, increase revenue through innovative new offerings, and simplify reporting and compliance. When companies use Gen AI responsibly to achieve these ends they can unlock business value while advancing sustainable development.

> **"In the past 30 years, there is no single technology except for AI that I have been able to stand up in front of CEOs and credibly and authentically say that it will have a material positive impact on every part of their enterprise."**
>
> Julie Sweet, CEO and Chair, Accenture

Imagine if businesses used Gen AI to tackle the logistical and analytical barriers to developing a truly circular economy. R&D teams could use Gen AI to accelerate development of replacements for resource intensive and environmentally degrading materials. Design teams could use a Gen AI assistant to help embed circular principles across product and service systems, starting with sustainable material selection and advancing through designing for extended product use and new business models. Gen AI can also help logistics teams optimize transportation and inventories across forward distribution channels and manage the increased operational complexity of reverse logistics networks. Once products reach customers, Gen AI can improve services that facilitate asset sharing or help guide customers and technicians through repairs to extend product life. When life-extension is no longer an option, Gen AI can help recovery and recycling vendors to more effectively separate valuable materials from waste streams for recovery. Gen AI can also help businesses learn from best practices, improving communication with value chain partners, regulators, and consumers to drive ecosystem-wide change. By tackling these challenges, businesses can take the next steps towards decoupling growth from resource use, creating value while tackling SDGs like climate action, responsible consumption and production, and affordable and clean energy.

FOUNDATIONAL CAPABILITIES OF GEN AI

DATA MINER

Gen AI surpasses traditional analytics tools by extracting valuable insights from unlabeled and unstructured data such as text, images, video, or audio, with the potential to link unstructured qualitative data with structured quantitative data. As an example, Gen AI could provide deeper insights into market sentiment and investment trends by analyzing unstructured data like filings, reports, news articles, or internal communications.[9]

INSIGHT NAVIGATOR

Interpreting data to drive decision-making is not always intuitive, requiring specially trained employees and a deep familiarity with the process or context of the decision in question. Gen AI can help employees apply technical knowledge to analyze complex data and provide recommendations, predictions, or explanations for businesses to act upon. For example, Gen AI can support technicians during infrastructure maintenance by providing interactive guidance generated from preventative maintenance systems and the technician's live observations.[10]

KNOWLEDGE AMPLIFIER

Gen AI tools can empower the workforce by functioning as capable and customizable search engines, communication coaches, or virtual assistants. For instance, Gen AI can be used to help draft memos and presentations or generate training plans to upskill employees for incoming regulations.

WHAT'S THE CATCH?

Gen AI is an exciting advancement, but poses a number of user and external risks that require careful consideration and management. User risks may include biased outputs and factual errors, opaque processes, and the opportunity for misuse. External risks include increased resource use across energy, water, and infrastructure and the potential to transform society by shifting the job market and spreading misinformation. The adoption of broader AI technologies has been uneven, with businesses in advanced economies accounting for the majority of capability development.[11] Not all regions and countries have equal access to the infrastructure, training, and data required to take advantage of Gen AI's benefits, which could widen the existing digital divide. The new and rapidly changing Gen AI landscape only adds uncertainty to these risks.

The UN Global Compact has and continues to advocate for a principles-based approach to responsible business, considering human rights, the environment, labour, and anti-corruption.[3] Given the scale of global investment in Gen AI, it is imperative that we monitor its development and implementation to maximize benefits while avoiding further negative effects on the SDGs. The UN Global Compact hopes this report can serve as a guide to the private sector in how to responsibly apply Gen AI, as well as how to leverage it as a tool to accelerate sustainable development.

> **"It is important for companies to consider how they are getting the best information out of Gen AI. What is your governance system to ensure you have checks and balances around unintentional outputs? Do you have transparency and an understanding of the data being fed into the system?"**
>
> Brigid Evans, Director of Global Policy, Pearson

> **"Each time we evaluate a use case, we consider if it's necessary to use Gen AI or if a traditional digital application or AI could suffice."**
>
> Giulia Brandetti, Head of Data Governance and Resource Allocation, Enel Group

3. See The Ten Principles of the UN Global Compact for more detail.

THE PRIVATE SECTOR'S LEADING ROLE IN SUSTAINABLE DEVELOPMENT

The private sector, responsible for more than 60% of global GDP[4], is the largest player in production of goods and services worldwide.[12] As a driving force behind innovation and the explosion of Gen AI, the private sector has a unique opportunity to lead the way in harnessing this technology for sustainable development. By prioritizing the SDGs throughout the use of Gen AI (as described in Resources 1-4), the private sector can drive positive impact and advance the SDGs globally.

The UN Global Compact challenges companies developing, deploying, and using Gen AI to work towards two key objectives when it comes to its use, shown in figure 2.

While companies face pressure to move quickly with Gen AI, they also have a responsibility to start small and move safely. Gen AI should always be developed with humans in the loop, meaning that people are in charge of (and accountable for) reviews to ensure the safe and responsible use of this technology. Due to its central role in sustainable development, the private sector should go beyond responsible implementation and leverage technologies like Gen AI to quickly close the gap between intent and action on SDGs.

Recognizing these responsibilities and the challenge of navigating emerging technologies, this report lays out how to achieve these two objectives through actionable insights and recommendations.

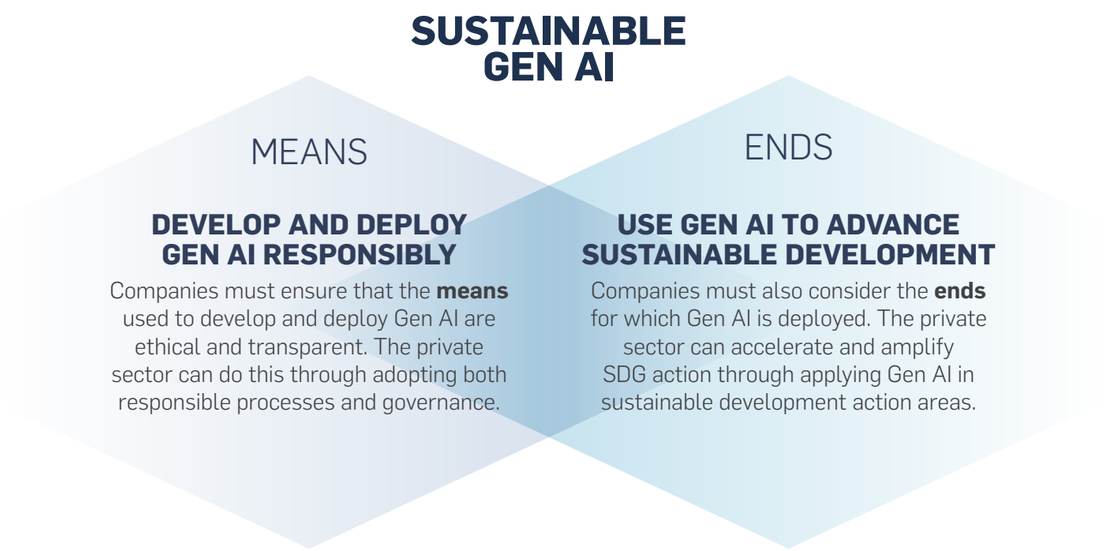


Figure 2: Key Objectives for the Private Sector on Gen AI and Sustainable Development

4. Additionally, more than 80% of production in low and middle income countries is private sector driven.[12]

> **When thinking about the SDGs, we need to think about where we can accelerate action and create a flywheel effect, and how Gen AI can support that."**
>
> Shamina Singh, Founder and President of Mastercard's Center for Inclusive Growth and EVP, Sustainability, Mastercard

> **Gen AI's ability to scale information and analytics can help us get farther faster on global issues."**
>
> Márcia Balisciano, Chief Sustainability Officer, RELX Group

> **By increasing productivity, the private sector has unlocked tremendous economic growth, but this has come at a cost. This is where AI can really step in and play a positive role — at the intersection of maintaining economic growth and sustainable development."**
>
> Vikram Nagendra, Director of Corporate Sustainability, SAP

> **Providing cited sources throughout a Gen AI response helps to increase traceability and trust."**
>
> Emma Grande, Director of ESG Strategy and Engagement, Salesforce

USING GEN AI TO ADVANCE THE SUSTAINABLE DEVELOPMENT GOALS

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Three key elements underpin the successful and responsible use of Gen AI. First, companies must ensure they clearly understand the problem they are solving and agree that Gen AI is an appropriate solution relative to the tradeoffs. Second, they must ready their people to use Gen AI responsibly by supporting them with the appropriate digital, data, and AI literacy training. Finally, companies need to set up the right governance structures to maintain safety and accountability. After building the foundation, Gen AI's ability to act as a Data Miner, Insight Navigator, and Knowledge Amplifier can be unleashed to help support sustainable development action and accelerate progress towards the SDGs.

> **"With Gen AI, the goal is not to replace human work but to supercharge it."**
>
> Emma Grande, Director of ESG Strategy and Engagement, Salesforce

These foundational capabilities can be applied to existing technologies and business operations to accelerate sustainable development across four use case categories, shown below. The following examples illustrate how businesses can — and already are — using Gen AI to advance their sustainability journeys. As the technology is so new to business, existing case studies largely represent the low-hanging fruit, offloading administrative work and democratizing access to information. Yet even these initial examples can have significant positive effects on the private sector's ability to make progress on sustainable development. As Gen AI improves, we can expect radical changes in the pace of innovation and level of impact of this transformative technology, potentially impacting sustainable development in ways that are yet to be imagined.[5]

> **"In the last year, we have addressed a number of low-hanging fruits with Gen AI. Moving forward, from a maturity cycle perspective, we will see more high-value-added cases."**
>
> Vikram Nagendra, Director of Corporate Sustainability, SAP

The use cases outlined here are just the beginning of Gen AI's ability to reshape the way businesses operate globally. Gen AI is positioned to play a pivotal role in advancing sustainable development towards the SDGs. By responsibly integrating Gen AI into daily operations, companies can drive positive change and progress towards their SDGs while achieving their business goals.

5. At the time of writing, business use of Gen AI is so early stage that most companies are working to validate the exact operational impacts before public disclosure. Several business leaders we interviewed indicated promising initial results. Also note that the rapid and concentrated development of Gen AI in a few countries means that these case studies skew towards large companies in the Global North.

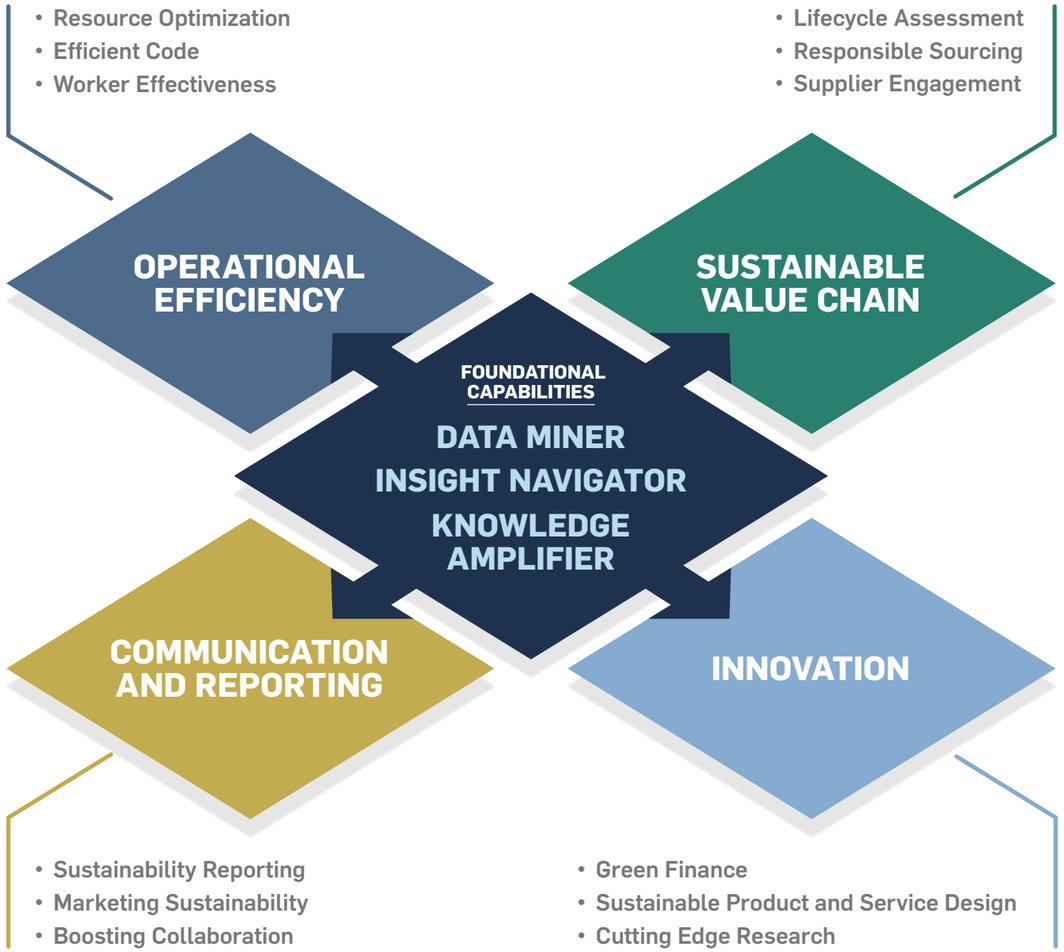


Figure 3: Use Cases of Gen AI for Sustainable Development

OPERATIONAL EFFICIENCY

Companies need to manage a finite number of resources efficiently to operate within financial and planetary boundaries to drive consistent and sustainable returns. Opportunities for Gen AI to increase efficiencies exist across a variety of operational capabilities, such as resource optimization, worker effectiveness, and code efficiency. Of course, businesses must consider the resource costs of Gen AI adoption and usage.

Resource Optimization: Minimizing the resource requirements to achieve business outcomes represents a dual opportunity for companies to lower both costs and environmental impact. The private sector can layer Gen AI's foundational capabilities on top of existing analytics and AI technologies to help employees optimize the use of resources from computing power to shipping networks. For example, companies can use Gen AI to upgrade a machine-learning-powered predictive analytics system into a prescriptive maintenance system that generates instructions and recommendations for workers.[10]

> **"Our goal is to increase our use of technologies that augment the capabilities of our colleagues, enhancing our efficiency and productivity while ensuring a human is always the final decision-maker."**
>
> Michela Buzzichelli, Head of Data Science and AI at Enel Global ICT, Enel Group

Worker Effectiveness: Effective training and tools are critical to supporting employees across their roles. Traditional training methods often fall short in providing effective, individually tailored learning environments, while inflexible tools lack the adaptability to support decision-making across an employee's responsibilities. Workers can use Gen AI as a powerful professional educational tool, personalizing learning on sustainable development topics to each employee's role, native language, and region-specific regulations or policies. Furthermore, Gen AI can support identifying and designing specific sustainable development training or courses relevant to a company's goals. It can also act as an assistant, collaborating with employees to enhance their productivity and decision-making, providing business value while promoting sustainability.

> **"With Gen AI, we could maximize the productivity time we're getting back from our workers and partners to create more opportunities in service of people on the planet."**
>
> Shamina Singh, Founder and President of Mastercard's Center for Inclusive Growth and EVP, Sustainability, Mastercard

Efficient Code: Clear, efficient, and effective code is critical for managing the environmental impacts of software (including Gen AI) in our rapidly digitizing world. Gen AI can help software teams significantly enhance operational efficiency by automating code generation, optimization, and debugging. For example, Gen AI tools can help identify inefficiencies and suggest improvements in existing code or enforce standards and assist decision making to build more effective novel software.[13] By streamlining software development with Gen AI, businesses can reduce resource consumption, not only improving overall performance but addressing significant emissions concerns as well.

CASE STUDIES

SUPERHUMANRACE

SuperHumanRace set out to improve maternal health in India, prioritizing the states with the poorest outcomes. The company developed an app designed to provide doctors with personalized recommendations for maternal health. Utilizing Gen AI alongside machine modeling, the app leverages a large data set on maternal health trends, interventions, and permutations of high-risk pregnancies to deliver tailored recommendations to each patient.

The app generates questionnaires for doctors that are tailored to the pregnancy stage, medical condition, and risk factors of each patient. By integrating existing machine learning models with Gen AI, the app identifies patterns in patient data to provide contextual descriptions of risk factors tailored to patients. SuperHumanRace offers AI-enabled suggestions that link information with specific actions, such as recommended supplements and medications, additional tests, and advice based on previous data aimed at reducing preventable deaths during pregnancy or childbirth.

The program's current pilot phase is expected to accurately identify more than 95% of high-risk pregnancy cases in real-time. Over the long-term, SuperHumanRace's solution aims to empower rural doctors across India, significantly improving health outcomes for high-risk populations and inspiring similar actions globally.

SIEMENS

Siemens deployed the Siemens Industrial Copilot, a Gen AI solution developed in partnership with Microsoft, on a Schaeffler manufacturing line, showcasing the power of Gen AI to increase industrial efficiency and operations solutions.

The Siemens Industrial Copilot has been instrumental in assisting Schaeffler's automation engineers in generating code for programmable logic controllers (PLCs). PLCs are the brains which control factory machines; one in three runs on a Siemens device. By using natural language inputs to develop code, the time, effort, and probability of errors in the coding process have been significantly reduced. This has not only decreased human effort on repetitive tasks but also allowed engineering resources to focus on higher-value work. In addition, it has the potential to empower less-experienced shop-floor employees to transition into engineering roles, fostering a culture of continuous learning and growth within the organization.

Additionally, machine downtime has been reduced through the identification and rectification of errors. By having access to all relevant documentation, guidelines, and manuals, the Industrial Copilot swiftly identifies potential errors, thereby minimizing disruption to production processes and enhancing overall operational efficiency. With increased efficiency in operations, the Siemens Industrial Copilot both decreases costs and reduces emissions intensity across operations.

SUSTAINABLE VALUE CHAIN

Engaging your entire supply chain on sustainable development is crucial for sector-wide transformations. Currently, companies follow multiple convoluted and tedious steps to gather the necessary data and push for transparency across their supply chains. Gen AI's ability to analyze unstructured data from across supply chains and provide insights allows companies to address their products and services' impacts more efficiently via comprehensive Lifecycle Assessments (LCAs), responsible sourcing initiatives, and effective supplier engagement.

Lifecycle Assessments (LCAs): The need for detailed environmental impact assessments across products and services is growing given regulatory pressure for clear data and transparency across sustainability reporting. Preparing LCAs to evaluate these environmental impacts in line with standards like the Greenhouse Gas (GHG) Protocol is a critical but time-consuming part of the process. Gen AI can help the private sector create and maintain accurate LCAs with greater efficiency, providing key information to drive toward organizational sustainability goals.

Responsible Sourcing: Responsible sourcing in the private sector is critical to reaching our 2030 SDGs, as procurement decisions directly impact a company's environmental and social footprint, ranging from scope 3 emissions to fair labour practices. Gen AI can be layered onto supplier reports and procurement databases to identify preferred suppliers, track compliance with standards, and produce risk profiles across human rights, labour, the environment, and anti-corruption concerns. Responsible sourcing considerations also need to apply to the energy, infrastructure, and models a company sources as part of its Gen AI strategy.

Supplier Engagement: Not all supply chain risks can be managed with sourcing decisions. Companies also need to partner with their supply chains to drive change at an ecosystem level. Gen AI can make this process easier by identifying both problems and solutions, even in complex supply chains. For example, Gen AI can help identify supply chain risks and improvement opportunities by comparing company standards with supplier reports or audits. It can also power tools that provide effective, personalized, and regionally relevant training, helping suppliers identify where and how to begin. By supporting an often-complex process, Gen AI fosters supplier relationships through transparency and encourages sustainable practices.

> **"Decoupling our growth from emissions requires investments in efficiency measures for ourselves and understanding the efficacy and footprint of those in our supply chain. We are holding them to the same high standard, an inherent part of our sourcing and partnership strategy."**
>
> Greg Ulrich, Chief AI and Data Officer, Mastercard

> **"60% of our supplier partners are small and medium enterprises, so we share best practices and provide access to technology to help them better manage their businesses. This is crucial as we adhere to standards like the Corporate Sustainability Reporting Directive (CSRD) and the New York Stock Exchange which require our entire supply chain to meet very high standards."**
>
> Beatriz Tumoine, Global Social Impact Director, Cemex

CASE STUDIES

ACCENTURE

Accenture's N-Tier Supply Chain Navigator finds opportunities for improvement within supply chain operations. Powered by Gen AI, it assists sustainability and procurement managers in analyzing data by providing real-time insights, answering specific queries, and facilitating data-driven decision-making. The N-Tier tool uses Gen AI to identify sustainability and human rights risks by cross-referencing supply chain data with location and sector-level indicators like alignment to international conventions or regions with high child labor risk.

For example, Accenture recently partnered with a major software company to comb through a network of more than 122,000 direct and indirect suppliers across 154 countries. Using the N-Tier tool, Accenture identified that 50-60% of CO2e hotspots were from Tier 2 and 3 suppliers, representing approximately 15 times more CO2e hotspots than that of their Tier 1 suppliers. In this way, companies can use Gen AI to understand complex global supply chains and make informed, sustainable procurement decisions.

UNILEVER

Unilever has been partnering with Google's Earth Engine platform since 2020 to build a global geospatial analytics capability, initially used to monitor deforestation and manage risk in forest commodities. Unilever has since integrated Gen AI capabilities to generate insights by cross-referencing geospatial data with supply chain data and other sources.

This enables Unilever to better understand the carbon footprint of specific commodities and processing facilities, the risk of future deforestation, and associated potential impacts on climate and nature. Gen AI is helping Unilever turn insights into action, integrating geospatial insights with buying processes and supplier lifecycle management to improve commercial decisions.

SAP

SAP's Sustainability Footprint Management solution leverages SAP Business AI to accelerate the process of carbon footprinting by mapping emission factors across a company's purchased products. SAP utilizes OpenAI Embedding models to identify potential matching products and help employees validate these matches.

To do this, the tool looks across product data from customers' Enterprise Resource Planning (ERP) systems and LCA databases to identify up to 10 close emission factor mappings for each product. The tool provides data fields like product, product group name, description, and a Similarity Score which help users evaluate the quality of the Gen AI match. As a result, teams can expedite analysis of emission factors for each product to increase visibility into emissions data and opportunities to improve. In addition, the tool facilitates documentation of this mapping to support audits.

INNOVATION

With limited time to achieve the SDGs, innovative solutions are becoming critical to bridging the gap between intent and impact. Gen AI can help move the needle on the SDGs by sourcing ideas and solutions across a variety of areas, specifically in green finance, product and service design, and new frontiers of sustainability research.

Green Finance: Companies, especially small and medium enterprises, often face challenges navigating the intricacies of financing sustainable development solutions. Gen AI can help those companies navigate the financial landscape to secure the resources needed to invest in more sustainable pathways. Gen AI can also help financial institutions learn from existing success stories to design context-appropriate solutions like green bonds, loans, funds, and insurance policies, unlocking new financial pathways for sustainable development.

Sustainable Product and Service Design: Gen AI can be a key tool to help integrate sustainability concepts throughout the design process, from embedding sustainability requirements into early stages of design and development to helping identify green materials and sustainable manufacturing processes. Gen AI can also help designers manage competing priorities throughout the design process to satisfy functional requirements while considering sustainable development factors such as material choice, responsible sourcing, and circular design.

Cutting Edge Research: Gen AI can accelerate sustainability research by identifying trends, correlations, and emerging sustainability solutions across a wide variety of complex and disparate data sources. For example, Gen AI could rapidly analyze entire libraries worth of research, drawing connections to identify fresh solutions for sustainable development problems.[14] Additionally, Gen AI can be used to build fit-for-purpose synthetic datasets based on existing references, correcting for underrepresentation or generating additional starting points for further research.[15] This ability to augment research and technological development, including helping address the risks and challenges of Gen AI itself, can help the private sector contribute to achieving our 2030 SDG ambitions.

> **Climate change is a systems level problem requiring innovation and real step change solutions. We're optimistic that Gen AI can power some of that change, because we need to go much faster and smarter."**
>
> Emma Grande, Director of ESG Strategy and Engagement, Salesforce

> **AI plays a crucial role in identifying opportunities to reduce the carbon footprint for a particular product, finding efficiency gains, and reducing waste."**
>
> Vikram Nagendra, Director of Corporate Sustainability, SAP

CASE STUDIES

YAMAHA & FINAL AIM

This year, Yamaha and Final Aim showcased Concept 451, a compact electric vehicle (EV) designed to support agricultural work in mountainous areas of Japan and maintain stability in the context of demographic changes. The design team used Gen AI throughout the design process to accelerate the creation of a vehicle that answers changing social requirements with greater accuracy and a quicker turnaround time.

First, Gen AI was used to research challenges the Japanese agricultural sector is facing, including an aging population, and identify functional requirements. Next, the team used image-generating AI to work through 2,000 design variants before converging on a winning candidate that prioritizes accessibility and utility. Image generation was also used to facilitate communication while building a 3D model of the EV in Autodesk Fusion. By incorporating Gen AI, Yamaha and Final Aim were able to demonstrate how businesses can effectively address social challenges with shortened research and development cycles.

CRAYON

The fast-paced and growing market for sustainable energy production makes it challenging for stakeholders involved in facilitating the green energy transition to stay up to date with industry trends. To increase research speed and quality, Crayon co-developed an LLM-powered chatbot to enable employees at an international energy company to easily search for and summarize relevant information across multiple data sources. The chatbot was developed in close collaboration with the customer and was trained on various relevant sources such as research papers, newspapers, and European Union energy regulations.

With the LLM-powered chatbot, the energy company was able to speed up market research and provide employees with 15% more relevant answers compared with their previous non-generative market research solution. The information was used by the energy company's employees to improve their operational and strategic decision making as well as the quality of customer-facing interactions. By leveraging the chatbot to bolster the technical knowledge of its employees, the energy company was ultimately better positioned to increase awareness of, and access to, green energy options among its customers.

COMMUNICATION AND REPORTING

Corporate sustainability teams need to navigate multiple frameworks, expectations, and policies as the sustainable development impacts of businesses come under increased scrutiny from investors, consumers, and regulators. Effective sustainability communication and reporting are practical requirements for businesses today, but time spent on these tasks takes away from designing and delivering the solutions which are necessary to drive change.

Excitingly, Gen AI is already making strides to support critical and time-consuming tasks like ESG reporting and sustainability marketing, and is breaking down silos to boost collaboration within companies themselves.

Sustainability Reporting: Accurate and detailed ESG reports are essential for regulatory compliance, public accountability, and demonstrating impactful results to stakeholders. Gen AI can ingest multiple data sources to identify key metrics, highlight initiatives, and generate report drafts to speed up the team's reporting progress. In fact, sustainability teams and reporting platforms are already integrating Gen AI into their processes and tools.

Marketing Sustainability: Effective and honest messaging about sustainable development achievements is crucial for obtaining the consumer and investor support needed to maintain corporate sustainable development initiatives. Marketing teams can use Gen AI to create content ranging from advertisements to product labels which are tailored to specific audiences while being aligned with brand strategy. Gen AI tools can also be used as a check against greenwashing by making nuanced sustainable development concepts more accessible to marketers.

Boosting Collaboration: Gen AI can help companies integrate sustainability throughout the business by enabling collaboration and communication between sustainability teams and the rest of the business. For example, Gen AI could provide additional context in just one click to help streamline communication by translating functional jargon into a common language. Gen AI might also help facilitate access to a companywide knowledge base so that decision makers are all relying on the same inputs. For detailed insights on how each business function can advance sustainable development with Gen AI, refer to Resource 3: The role of each business function.

> **Currently I have more people working on reporting than on actually making the world a better place. A Gen AI tool for reporting would allow my team to direct more effort towards driving sustainable innovation."**
>
> Maurice Loosschilder, Global Head of Sustainability, Signify

> **Knowledge discovery is a powerful use case for Gen AI, reducing the effort and time needed to find relevant information. Gen AI can also help with data collection, management, reporting, and disclosures, especially for compliance with regulations like the CSRD in Europe. Gen AI can speed up the reporting process, but human oversight is still necessary."**
>
> Fadzai Munyaradzi, Vice President of ESG, Crayon

CASE STUDIES

SALESFORCE

Last year, Salesforce incorporated its bespoke AI system, known as Einstein, into Net Zero Cloud, an ESG management platform that manages environmental, social, and governance data, forecasts carbon emissions reductions, and automates ESG reporting. With Einstein's Gen AI capabilities, Net Zero Cloud can now assist companies in generating their ESG reports. This innovative use of Gen AI streamlines the process of creating framework-specific reports, conserving valuable time and resources for individuals. Einstein works with framework-specific report builders that come with the platform, suggesting responses that align with framework-specific criteria, thereby simplifying the ESG report authoring process. It uses a company's ESG data from previous years' disclosures, uploaded documents (e.g. 10K, impact reports, compliance documents), and other Net Zero Cloud data, such as a company's emissions, as initial inputs. This data is then used to automatically populate responses for each written question in the report. The integration of Gen AI in reporting capabilities allows for companies to spend time on new initiatives to progress sustainability efforts and less time reporting, ultimately demonstrating the transformative potential of Gen AI in championing sustainability.

MICROSOFT

Microsoft's Sustainability Insights Copilot template for Copilot Studio helps companies efficiently source and share tailored data and insights about their sustainability goals and progress. The tool uses Gen AI to analyze sustainability data and provide context-specific support to all employees. Results can then be shared across teams as reports, documents, and records. Companies can also compare their data with others in their industry to benchmark sustainability progress, enabling better accuracy and data confidence. These tools help spread sustainability knowledge, reduce errors, and improve decision-making across an organization.

MITIGATING THE SUSTAINABLE DEVELOPMENT RISKS OF GEN AI

MITIGATING THE SUSTAINABLE DEVELOPMENT RISKS OF GEN AI

As discussed, Gen AI is incredibly promising — but companies that fail to apply it responsibly can open both themselves and society at large up to significant risk. Academic institutions, Governments, the private sector, and others are continuously expanding our understanding of risks and trying to mitigate them through safeguards and regulations.

Rapid advancements in Gen AI, however, mean that the risks can easily outpace regulation. As such, it is important that businesses understand the potential pitfalls of Gen AI use. Better understanding of the risks enables businesses to set up good governance, strategically deploy Gen AI, and prepare their workforce.

This section illustrates the sustainable development risks of Gen AI across seven categories, which can be broadly organized into user risks (experienced directly as a result of human usage of Gen AI) and external risks (experienced as side effects of Gen AI adoption). If left unchecked, these risk categories can directly counteract the positive impacts of Gen AI on sustainability.[6] While this report focuses on Gen AI, many of these risks apply to the broader fields of AI and other emerging technologies.

> **We must innovate and adopt these technologies carefully. Gen AI can be mesmerizing due to its capabilities, but improper adoption can be dangerous — we must be mindful of the risks."**
>
> Michela Buzzichelli, Head of Data Science and AI at Enel Global ICT, Enel Group

> **The opportunities that Gen AI presents equally give rise to new challenges. We need to be agile and mitigate these risks as we deploy this technology."**
>
> Stephen Chege, Chief Regulatory and External Affairs Officer, Vodacom Group

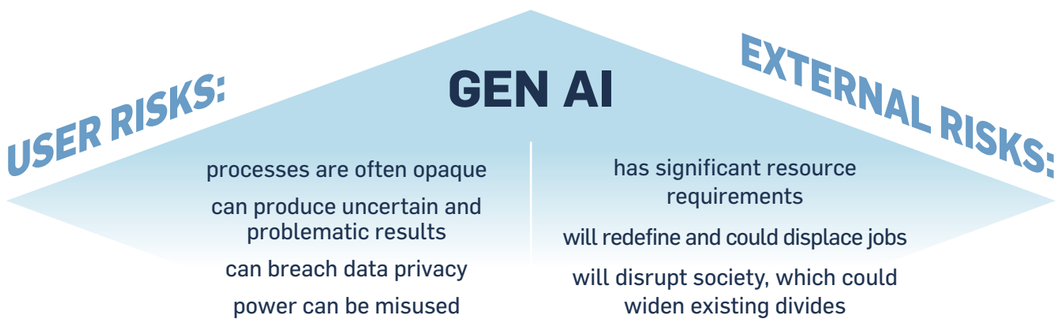


Figure 4: Key sustainable development risks of Gen AI

6. These risks were selected due to their relevance to sustainable development but are not exhaustive. Businesses can reference the NIST Gen AI profile for a more complete list of actions to manage Gen AI risks.[16]

USER RISKS OF PRIVATE SECTOR GEN AI USE

> **Using trusted content that you can cite is very important, and there is an increasing demand for it. If people can't trust the content, it's not going to be good for business."**
>
> Márcia Balisciano, Chief Sustainability Officer, RELX Group

GEN AI PROCESSES ARE OFTEN OPAQUE

Gen AI solutions are poised to support and even drive critical decision-making processes in the private sector, from screening and hiring employees to monitoring power plants. The gravity of these tasks means that traceability, transparency, and accountability for AI systems are required to manage risk.

However, companies will need to rely on an entire ecosystem of third-party partners to develop the infrastructure, models, and data in their Gen AI tech stacks, introducing the risk of accountability gaps. External data sources may contain data that is mislabeled or in violation of copyright. Developers may not explain or even understand how a model gets to the conclusions it does. End users may not be honest about how they use and validate Gen AI outputs. Amplified by the uncertainty that comes with any rapidly emerging technology, a lack of transparency compounds the magnitude of many of the other risks of Gen AI.

> **Gen AI that relies on public data is not always reliable. If I ask the same data question in three different ways, it'll give me three different answers."**
>
> Gagandeep K. Bhullar, Founder and CEO, SuperHumanRace

GEN AI CAN PRODUCE UNCERTAIN AND PROBLEMATIC RESULTS

Like the humans who create them, Gen AI models are affected by bias and uncertainty. Use of Gen AI can inadvertently introduce or perpetuate gender, racial, socioeconomic, and other forms of bias. Even with good intentions, bias can leap from the real to the digital world by perpetuating faulty assumptions made during model design and fine-tuning, reproducing patterns in incomplete or mislabeled training data, and reinforcing existing biases in users.

Models also have the potential to present false content as fact (known as hallucination[7] or confabulation) and can be steered to generate toxic or offensive outputs. What's more, the predictive capabilities core to Gen AI's adaptability means that outputs are probabilistic, making them difficult to reproduce even when given the exact same inputs.

Due to automation bias[8] and the scale of Gen AI adoption, it's possible that some users will put too much trust into Gen AI, deferring to model outputs without sufficient analysis.[17] Only sufficient governance and guardrails, enabled by transparency and reproducibility, can guard from error, bias, toxicity, and confabulation leaking into everyday work.

GEN AI CAN BREACH DATA PRIVACY AND SECURITY

Gen AI applications have the potential to inadvertently reveal sensitive personal or confidential corporate information, which can put companies at risk of violating international data security protocols such as the GDPR. For one, the large datasets at the core of Gen AI models may not be properly audited and contain sensitive information. Even with proper data screening, Gen AI's ability to index massive amounts of public information and to draw associations between distinct data points, coupled with its lack of human judgment, creates a risk of accidentally uncovering and revealing sensitive or confidential data.

> **It is not always about implementing the coolest algorithms but about generating value while factoring in ethical, security, and privacy considerations."**
>
> Hilda Kosorus, Director of Data and AI Center of Excellence for EMEA, Crayon

GEN AI'S POWER CAN BE MISUSED

Finally, the way users interact with Gen AI is core to its impact on people and the planet. Without proper safeguards, Gen AI can be used against the SDGs by spreading misinformation through hyper realistic synthetic content such as deepfakes, providing guidance for the creation of digital or physical weapons (e.g. cyber-attacks or homemade weapons), or otherwise supporting deception or violence. Users could also intentionally manipulate Gen AI models to create toxic outputs or breach data privacy, exacerbating the risks outlined above.

> **Given the risks of misinformation and disinformation, we must focus on digital and AI literacy to enable people to understand what is true and what is not, how to be a critical thinker about what you are seeing, and how to discern that what you are being told is truthful."**
>
> Brigid Evans, Director of Global Policy, Pearson

7. NIST notes that the term hallucination "can anthropomorphize Gen AI, which itself is a risk related to Gen AI systems as it can inappropriately attribute human characteristics to non-human entities."[16]
8. Automation bias is when humans monitoring automated systems put too much trust in system outputs, missing warning signs or actioning on bad advice

> **We recognized there was a widening information inequality gap, meaning there was a growing gap between the data haves and the data have-nots. The social sector was falling behind in their ability to analyze their data."**
>
> Shamina Singh, Founder and President of Mastercard's Center for Inclusive Growth and EVP, Sustainability, Mastercard

> **When assessing use cases for Gen AI, I always want to evaluate whether it's worth the cost — specifically the energy use and resource cost of using Gen AI to solve this issue."**
>
> Maurice Loosschilder, Global Head of Sustainability, Signify

> **Providing cited sources throughout a Gen AI response helps to increase traceability and trust."**
>
> Emma Grande, Director of ESG Strategy and Engagement, Salesforce

> **Models use content scraped from the web, which may not be inclusive and could promote gender or other forms of bias."**
>
> Márcia Balisciano, Chief Sustainability Officer, RELX Group

> **As we evolve Gen AI, it'll be super beneficial if people are able to do it in their own language or dialect, versus having to speak English to interact with the technology."**
>
> Gagandeep K. Bhullar, Founder and CEO, SuperHumanRace

> **From our perspective, we recognize the importance of addressing biases—such as gender and racial—in AI models. By partnering with technology developers, we aim to foster the creation of more objective and inclusive information, ensuring a fairer and more representative AI landscape."**
>
> Beatriz Tumoine, Global Social Impact Director, Cemex

EXTERNAL RISKS OF PRIVATE SECTOR GEN AI USE

> **The environmental impact of data centers is significant, with Gen AI increasing energy consumption. We must be conscious of our footprint and the footprint of our suppliers. Gen AI can improve efficiency but also escalates energy consumption."**
>
> Hilda Kosorus, Director of Data and AI Center of Excellence for EMEA, Crayon

GEN AI HAS SIGNIFICANT RESOURCE REQUIREMENTS

Like any digital technology, Gen AI models require resource hungry data centers for training and inference, which consume energy, water, and computer hardware. The expansion of Gen AI is expected to contribute to electricity consumption in data centers, more than doubling from 2022 to 2026, which already accounts for more than 1.5% of global energy.[18] Fresh water is consumed for cooling in data centers and power plants, which can have significant impacts on local ecosystems and regional water security. Extracting and refining the metals required for hardware brings environmental and social costs, and some metals, like gold, cobalt, and tungsten, also carry a high risk of funding conflict zones. Even renewable energy carries environmental and human costs related to mining, manufacturing, installation, and end of life of equipment and infrastructure. Every kWh used for Gen AI represents an opportunity cost for other uses, which could have more positive impact.

Already, many large tech companies are updating their sustainability commitments to reflect the increased resource use from their adoption of Gen AI.[19][20] Weighing the costs and benefits of using these resources is a complex but critical task while we continue to reduce the overall resource use of Gen AI.

> **We need to consider what roles will emerge and how we can cross-skill people to easily transition into those roles"**
>
> Gagandeep K. Bhullar, Founder and CEO, SuperHumanRace

GEN AI WILL REDEFINE AND COULD DISPLACE JOBS

While Gen AI will unlock new capabilities and opportunities for many workers, it also represents a significant automation threat to knowledge workers. As with the industrial revolution, a dramatic and rapid change in the demand for skills due to Gen AI is likely to significantly alter the nature and quality of work across sectors.[9] For example, Accenture modeling across 22 countries shows that 31-47% of working hours may be augmented or automated with Gen AI.[21] Roles that involve repetitive, routine, or standardized digital tasks, such as tech support, copywriting, or data entry, are likely to feel these impacts early on, but the specifics of long-term impacts will be far-reaching and unexpected. Business use of Gen AI will also require new jobs and skills; forward looking companies can use this as an opportunity to offset displaced jobs by supporting employees with proper upskilling. Companies should work with Governments and policymakers to strive for a people-centered transition throughout this next revolution in work, for both employees and society at large.

GEN AI WILL DISRUPT SOCIETY, WHICH COULD WIDEN EXISTING DIVIDES

Gen AI will undeniably change the dynamics of our global societies and economies. Productivity gains will create numerous positive opportunities for society and the economy. However, taking advantage of these opportunities at an individual or collective level requires digital literacy, computational power, access to a model, and representational training data.

While efforts to diffuse this technology to low-resource and underrepresented settings will happen, the persistent inequality of internet and electricity access implies that progress will be uneven, and many will be left behind.[10] If current trends continue, the concentration of model development knowledge and quality data in a small number of countries and communities will serve as an additional barrier for others to catch up. These barriers to entry mean that Gen AI is likely to compound current inequalities by widening the existing digital, data, and innovation divides.[22]

> **The digital divide is real. Barriers such as access to devices, data literacy, access to the internet, and even access to energy contribute to this. Overlaying these with Gen AI may lead to a wider divide unless business and governments work together to close the gap."**
>
> Stephen Chege, Chief Regulatory and External Affairs Officer at Vodacom Group

Alongside a widening divide, digitalization threatens to exacerbate human rights concerns across children, women, migrants, and other vulnerable groups. These harms may be wide-ranging and hard to assess given data collection challenges and a lack of current guidance, but include increased exposure to privacy breaches, exploitation, and digital exclusion. Digital advancements will have complex impacts on power dynamics and human rights, which must be managed to keep people at the center of digital transformation.

9. The IMF notes that because Gen AI is a digital technology it has the potential to disrupt society even faster than the industrial revolution if left unchecked.[23]
10. As of 2023, approximately 33% of the world's population is offline.[24] The disparity in access to electricity across the world may perpetuate the digital divide. For example, only 51% of Sub-Saharan Africa had access to electricity as of 2022.[25]

LOOKING FORWARD

LOOKING FORWARD

Gen AI is not a silver bullet to the private sector's operational challenges, nor is it a one-size-fits-all solution. Yet, the technology is so new that we've hardly scratched the surface of what it can achieve. The case studies in this report illustrate exciting early applications of Gen AI. As capabilities improve, Gen AI has the potential to revolutionize the way we manage business and sustainable development, enabling us to better tackle global issues from poverty and gender equality to life on land and below water. As the private sector leads the world in designing and deploying Gen AI solutions, it is critical that appropriate due diligence takes place to understand and mitigate its risks.

The private sector can support progress towards the SDGs while taking advantage of this technology by anchoring its decision making to the Ten Principles of the UN Global Compact. By taking a principles-based approach, business leaders can make sure they are considering impacts across human rights, labour, the environment, and anti-corruption. Adhering to the Ten Principles also helps companies protect their reputation, maintain their social license to operate, and avoid legal or regulatory sanctions.

Like other significant technological advancements, Gen AI has complex and sometimes contradictory implications for sustainable development. We are optimistic about the future, expecting that Gen AI's ability to accelerate and amplify progress against the SDGs will enable the world to better address challenges and increase impact. We cannot achieve our 2030 goals without the private sector's participation. For the sake of our shared 2030 agenda, we call upon the private sector to develop and deploy Gen AI responsibly and use Gen AI to advance sustainable development.

> **"We know that in order to confront the water crisis, we need smart technology, including AI and data, to support solutions that can help us grow and thrive in a water-constrained world."**
>
> Emilio Tenuta, Senior Vice President and Chief Sustainability Officer, Ecolab

> **"We are seeing a convergence of business leaders prioritizing Gen AI and sustainability. We are in the middle of dealing with two questions; what are the sustainability impacts of Gen AI, and how Gen AI can support sustainability efforts between now and 2030?"**
>
> Vikram Nagendra, Director of Corporate Sustainability, SAP

> **"From a social equity perspective, AI can help solve critical issues such as financial inclusion and maternal health, but only if we address the underlying infrastructure and data availability challenges first."**
>
> Stephen Chege, Chief Regulatory and External Affairs Officer, Vodacom Group

> **"When it comes to AI and the digital divide, there are as many opportunities to close the divide as to widen it. For example, Gen AI could give tools to allow people to communicate without language barriers inexpensively. It requires organizations to lean in and think about where the gaps are and how to close them."**
>
> Greg Ulrich, Chief AI and Data Officer, Mastercard

The risks of Gen AI are worth navigating to unlock the technology's power to address sustainable development challenges.

To help guide their journeys, business leaders can find additional resources following this section:

RESOURCES

RESOURCE 1

PLAYBOOK FOR IMPLEMENTING GEN AI RESPONSIBLY

Explains how to ready your enterprise for Gen AI and how to manage its ongoing applications.

RESOURCE 2

USING GEN AI TO SUPPORT YOUR SUSTAINABLE DEVELOPMENT AMBITION

Illustrates how Gen AI can support corporate sustainability goals through the lens of the UN Global Compact management model.

RESOURCE 3

THE ROLE OF EACH BUSINESS FUNCTION

Provides a quick reference guide for the role of key business functions in developing and maintaining effective Gen AI implementation for sustainable development.

RESOURCE 4

BROADER ECOSYSTEM ADVOCACY

Outlines actions companies should advocate for outside of their own organization to affect change across their sectors and ecosystems.

Additional resources from the United Nations system and other organizations are collected in the appendix, including frameworks for responsible business and responsible AI use, common Gen AI tools, and other helpful links.

> **A dual approach of governance and execution is essential. We need to ensure that our governance framework supports sustainable digital transformation, while simultaneously implementing practical applications that align with sustainability goals."**
>
> Fabrizio Furbini, Head of Sustainability, Global Digital Solutions, Innovability, Enel Group

> **Not everyone needs to be an AI expert, but everyone will be touched by AI. We therefore need to make sure that we invest in educating our workforce, so we can have a data literate workforce that is right for our strategy and needs."**
>
> Brigid Evans, Director of Global Policy, Pearson

> **Ethics are often an afterthought when procuring AI products. Ethical impact assessments need to be integrated at the start of product development."**
>
> Lihui Xu, Programme Specialist, Ethics of AI Unit, Social and Human Sciences Sector, UNESCO

> **Responsible AI governance is essential for accountability. At Iberdrola, each country has an AI coordinator to align with global standards. This approach centralizes decision-making, maintaining ethical guidelines and preventing actions that could compromise our standards."**
>
> Beatriz Crisóstomo Merino, Global Head of Innovation, Iberdrola

> **We want to avoid having one Gen AI expert in the company. It is something we want everyone to be experts on because Gen AI can apply across all functions."**
>
> Mario Giordano, Global Head of Public and Government Affairs, Signify

RESOURCE 1

PLAYBOOK FOR IMPLEMENTING GEN AI RESPONSIBLY

WHAT DO YOU NEED TO DO TO READY YOUR ENTERPRISE?

Gen AI can lead to significant business and social value, but the landscape is complex and ever-changing. Competing priorities and overlapping risks mean that businesses must rely on a strong value system and governance to manage risk. By incorporating the Ten Principles of the UN Global Compact and following these general steps, companies can manage the risks of the technology in the areas of human rights, labour, the environment, and anti-corruption.

LAYING AN OPERATIONAL FOUNDATION

As of October, 2023 only 2% of companies had fully operationalized mechanisms for responsible AI use.[3] Whether your company is building models from scratch or purchasing access from providers, it is critical that you create a responsible AI team with cross-functional representation to govern the use of Gen AI and other AI tools.

Before deploying Gen AI, your responsible AI team should lay the foundation by conducting an inventory of Gen AI uses, identifying relevant risks, defining responsible AI principles, designing a risk management framework[11], and creating or upleveling policies to align with this framework. This operational foundation is required to consistently manage the full range of development risks.

BUILDING YOUR GEN AI ECOSYSTEM

Any company using Gen AI will need to build a Gen AI ecosystem, a process that requires coordinating across several business functions to define existing capabilities, goals, and guardrails. Your tech stack will likely include third-party vendors for data, cloud computation, and other functions. Companies, especially those that elect to use pre-developed models, should be sure to select vendors whose approach to risks such as resource consumption and data privacy align with your company values. You also need to manage your data supply chain and tuning processes to ensure that applications are representative. In some cases, you may need to source entirely new data for emerging topics or underrepresented populations.

READYING YOUR PEOPLE

Of course, the Gen AI solutions you choose to implement can only be as effective as the people interacting with them. Digital literacy is critical as digital tools become more and more central to everyday work; data literacy is required for effective human oversight of any analytical Gen AI applications. To ensure a people-centered transition and mitigate job displacement, it's important that you offer training for these skills across your workforce. Especially as these skills are so new, training is likely the most practical way to be sure of having the right talent to harness the full potential of Gen AI.

People interacting with Gen AI must also understand the material risks associated with their use of Gen AI, how to identify them, and the process for resolution. This means that you need to engage and train both internal and external stakeholders on AI ethics, regulations, and best practices, relying on the operational foundation described above.

11. Using standards such as the NIST AI Risk Management Framework.[16]

HOW DO YOU MANAGE EACH DEPLOYMENT OF GEN AI?

After ensuring that the relevant people, processes, and technology are prepared for Gen AI adoption, you can begin to responsibly develop and deploy Gen AI solutions. Recognizing that each Gen AI deployment is unique, the UN Global Compact recommends the following steps as a general guide for the private sector across all industries, regions, and sizes.

ESTABLISH CLEAR OBJECTIVES & KPIS

Begin each implementation with a clear understanding of the problem you are solving and if Gen AI is an appropriate solution. Identify tangible metrics to track positive or negative impacts on business objectives and SDGs. Assign responsibility for each element of deployment, establish a monitoring framework, outline any conditions that would cause you to terminate a deployment, and understand what the end of life for the application looks like.

CONDUCT RISK ASSESSMENTS

Identify potential risks and categorize them by probability, scope, and scale of impact. Develop tailored mitigation strategies to help safeguard your use of Gen AI, aligned with your company's risk tolerance, to prevent SDG backsliding.

CONDUCT SYSTEMATIC ONGOING AI TESTING

Design for transparency and regularly conduct comprehensive tests of the Gen AI system to avoid bias and confirm that the system is operating as intended. Work with your employees to manage automation bias and ensure that all protocols are followed. Incorporate the proper reporting channels so end users can communicate issues experienced during application use.

START SMALL

As with any new technology, it's important to start with a limited scope to better understand performance, risk, and how people engage with the solution. By scaling your solutions in a measured way, you can better assess Gen AI's impact to both your business objectives and sustainable development.

CONTINUOUS IMPROVEMENT

Whether the scale of deployment is small or large, businesses need to employ incremental checks and investments on Gen AI to identify issues and incremental improvements. You should monitor and optimize energy consumption, impact to stakeholder groups, and other side effects of your use of Gen AI to ensure higher-quality, efficient, and ethical outputs while minimizing waste, defects, and variation.

Figure 5: Steps to Deploy Gen AI for Sustainable Development

RESOURCE 2

USING GEN AI TO SUPPORT YOUR SUSTAINABLE DEVELOPMENT AMBITION

After following the guidance in Resource 1: Playbook for implementing Gen AI responsibly you can begin to use Gen AI to support sustainability initiatives across your organization. To illustrate the connections to common work tasks, this section breaks down potential applications of Gen AI across each step in the UN Global Compact Management Model. This model guides companies through the process of formally committing to, assessing, defining, implementing, measuring, and communicating a corporate sustainability strategy aligned with the Ten Principles and the SDGs. While the specifics vary from company to company, we see this as both a representative model and a best practice guide that is applicable across industry, geography, and company size. Potential applications of Gen AI to each step of the UN Global Compact Management Model are described in greater detail in the table at right.

Disclaimer: Note that effective partnerships and stakeholder engagement should be a foundation across the management cycle and are crucial to upholding business responsibilities to respect planet and people, as well as contributing to the SDGs. Used responsibly, Gen AI can help businesses share data and insights for collective action on the SDGs, as well as collating data and analyzing input from assorted stakeholders and rights-holders.

STEP	DETAIL	GEN AI CAN HELP...
COMMIT	Company leadership commits to supporting the Global Compact and making the Ten Principles part of the strategy, culture, and day-to-day operations of the company, with oversight provided by transparent governance structures.	• Draft narratives, talking points, and business cases • Tailor communication for specific audiences
ASSESS	The company assesses its risks and opportunities—in financial and extra-financial terms—as well as the impact of its operations and activities on key issue areas, on an ongoing basis.	• Continuously ingest, aggregate, and clean disparate and unstructured data • Analyze data to identify risks and opportunities • Estimate the materiality and public sentiment of risks • Facilitate ideation sessions
DEFINE	Based on this assessment the company develops and refines goals and metrics specific to its operating context, then creates a roadmap to carry out its program.	• Prioritize opportunities • Define goals and the KPIs for measuring success • Draft and socialize roadmaps
IMPLEMENT	The company establishes and ensures ongoing adjustments to core processes, engages and educates employees, builds capacity and resources, and works with supply chain partners to address and implement its strategy.	• Use foundational capabilities as a part of the solution tech stack (see Use Cases) • Manage stakeholders and solution development through implementation
MEASURE	The company captures, analyzes, and monitors the performance metrics established in the Assess and Define steps. Progress is monitored against goals and adjustments are made to improve performance.	• Identify best practices and regulatory requirements for measuring sustainability progress • Ingest and standardize data across sources
COMMUNICATE	The company communicates its progress and forward-looking strategies for implementing its commitment and engages with stakeholders to further progress.	• Gather and summarize information across internal communication • Generate visuals • Align with reporting frameworks

RESOURCE 3

THE ROLE OF EACH BUSINESS FUNCTION

Successfully implementing Gen AI to achieve business targets and SDGs requires input and collaboration across each of your business functions. While the specifics will vary from company to company, we offer this guide as a starting point to help your business understand and act on the recommendations throughout this report.

LEADERSHIP AND STRATEGY

Top leadership can support effective Gen AI use by setting clear expectations around Gen AI applications, including how they are designed and implemented responsibly. They can provide resources and address roadblocks to help each of the other functions accomplish their jobs. They should also ensure that clear responsible AI guidelines and strong AI governance exists – owned by a group such as an AI governance board with executive oversight.

HUMAN RESOURCES

Gen AI tools still need humans to manage them. HR is responsible for ensuring that your employees are trained to use Gen AI responsibly. Productive, organization specific training can't be done overnight, so HR needs to work in lockstep with IT and other functions to understand the timelines and requirements for each Gen AI system you deploy. Upskilling and training will remain a continuous priority with the advancement of Gen AI and require consistent compliance checks and management from the HR team.

SUSTAINABILITY

The sustainability team has two distinct roles for Gen AI. First, it should be a champion for responsible AI practices, including leading the conversation around integrating responsible Gen AI principles into the organization's broader AI, Data, and Sustainability Strategies.

Second, the sustainability team should promote the use of Gen AI to augment sustainability progress. This includes role modeling the use of Gen AI in its own work activities (e.g. preparing sustainability reports) and collaborating with other functions to drive further change.

PROCUREMENT

In conjunction with IT, procurement should be actively involved in managing risks related to data and tech stack providers. As with any other purchase, due diligence is critical; procurement must coordinate with other functions to understand requirements and risk tolerance and identify the most promising and appropriate providers.

IT AND DATA

The Information Technology and Data teams own the technical side of Gen AI applications. It is important that they ready the organization's data and tech stack to take advantage of Gen AI, keeping in mind responsible principles and future-facing concerns. Failing to properly vet data and models, or provide safeguards and governance around use can mean significant risk once the business starts using Gen AI.

FINANCE AND LEGAL

Just because a problem can be addressed by Gen AI doesn't always mean that it should be. Jumping in head-first can lead to wasted investments and financial liabilities. The legal ramifications of issues like unethically sourced third-party data or employee abuse of a company's AI system are ambiguous, as precedence has not necessarily been set for determining liability or responsibility of poor outcomes of Gen AI usage.

Recognizing this, the finance and legal teams should be involved in Gen AI governance, acting as an approval checkpoint and evaluating the business case and legal landscape to validate that all risks have been appropriately managed before moving forward.

RESOURCE 4

BROADER ECOSYSTEM ADVOCACY RECOMMENDATIONS

Private sector leaders need to balance looking internally as well as engaging with the larger ecosystem to ensure that Gen AI is responsibly adopted globally and acts for – rather than against – sustainable development. As a private sector leader, you should work with your teams, partners, Governments, regulators, and consumers to advocate for these changes where possible.

ENGAGE PARTNERS TO ADDRESS SUSTAINABLE DEVELOPMENT RISKS

Sustainable development risks are broad, and companies cannot solve them all on their own. Companies should collaborate with their value chains, regulators, Governments, NGOs, and other stakeholders to promote ecosystem-wide sustainable development action. To take just one example, Gen AI producers like Microsoft and Meta are working with the UN Global Compact through the CEO Water Mandate to minimize AI's impact on challenged river basins and develop a Net Positive Water Impact (NPWI) framework for AI companies.

DEMAND TRANSPARENCY AND ACCOUNTABILITY FROM MODEL DEVELOPERS

As with any purchase, you should always do your due diligence and understand what responsible AI practices your suppliers have (or have not) put in place before making an investment in Gen AI. The private sector should set and reinforce expectations that the developers of Gen AI models and Gen AI-powered services disclose the environmental and social costs of training and running their models, have a system to remediate any negative impacts or ethical violations, and actively monitor the potential risks of their products. By setting these expectations as standard, private sector buyers can send clear market signals on expectations of Gen AI suppliers.

PROMOTE INCLUSION IN GEN AI THROUGH DIGITAL PUBLIC INFRASTRUCTURE (DPI)

Digital literacy, internet, devices, and data are all required to take advantage of Gen AI. Unequal distribution of these resources and a lack of interoperability between systems creates a global digital and AI divide. Beyond access issues, a disproportionate number of the academic institutions and companies that are responsible for the boom in Gen AI are concentrated in a small number of countries in the Global North.

The private sector can address these issues by working to include stakeholders across the entire globe and by supporting digital public infrastructure, which enables governance and innovation through networked open technology standards. Where possible, the private sector should share material information while respecting the rights, privacy, and dignity of the users and data providers. The UN Development Programme (UNDP) works through strategic initiatives like the DPI Safeguards Initiative and the 50-in-5 campaign to further this infrastructure.[26] The UN Data Commons for the SDGs is another example of an initiative that provides standardized data across regions to facilitate consistent measurement of SDG impact.[27]

DEVELOP ACCOUNTABILITY THROUGH SENSIBLE, EFFECTIVE REGULATION

Commonsense regulations lower the risk of controversy or catastrophe, protecting the long-term potential of Gen AI. The private sector, and especially tech companies, should actively participate in efforts of Governments and international organizations to establish clear, relevant, and enforceable standards for the use of Gen AI, and to ensure alignment with SDGs and the common good. This includes participating in multi-stakeholder initiatives to guide the development and deployment of Gen AI solutions, keeping policymakers up to date with the latest and greatest understanding of Gen AI's possibilities and risks, and considering factors like energy and water sources when permitting new data center construction.

The risks discussed throughout this report reflect the reality that companies that build, deploy, and use Gen AI systems take on new and complex risks. The need for adequate, clear regulation is evident.

Alignment across public and private entities is made possible when the private sector takes action to advocate for regulation and standards around Gen AI. To support this effort, the UN has developed an AI Governance for Humanity interim report[12] to build consensus and provide clear guidelines for ethical and well-governed AI use, which has defined the Interim Guiding Principles for AI Governance below.

In a survey of participants conducted by the UN Global Compact, 78% of respondents support the Principles outlined in the Interim Report for AI governance, indicating a broad consensus. However, additional principles are suggested, including incorporating new elements such as transparency and accountability, ethics and integrity, flexibility and adaptability, cultural considerations, sustainability and environmental protection, and safety. These additions aim to further enhance the ethical development and responsible deployment of AI technologies on a global scale, reflecting the diverse aspirations that a comprehensive global governance regime for AI should encompass.

1	AI should be governed **inclusively**, by and for the **benefit of all**
2	AI must be governed in the **public interest**
3	AI governance should be built in step with **data governance** and the **promotion of data commons**
4	AI governance must be **universal**, **networked** and rooted in **adaptive multistakeholder commons**
5	AI governance should be anchored in the **UN Charter**, **International Human Rights Law**, and other agreed international commitments such as the **SDGs**

Figure 6: UN Interim Guiding Principles on AI Governance

12. For more information, please reference the UN Interim Report: Governing AI for Humanity

> **While Cemex operates at the highest standards, achieving systemic change requires collective effort. We need our neighbors to make similar sustainability advancements, the private sector to follow suit, and the public sector to adjust policies accordingly."**
>
> Beatriz Tumoine, Global Social Impact Direction, Cemex

> **We recognize that we are not alone in this field. It is critical that we engage with regional, national, and international associations dealing with AI governance and ethics."**
>
> Beatriz Crisóstomo Merino,
> Global Head of Innovation, Iberdrola

> **If you are not considering diverse datasets, your outputs will not be suitable for a diverse range of geographies."**
>
> Brigid Evans, Director of Global Policy, Pearson

> **There is a misunderstanding that regulation stifles innovation. The right regulation or governance enables technology development. Capacity building is also crucial, with centers for knowledge sharing, for the next generation to prepare."**
>
> Lihui Xu, Programme Specialist, Ethics of AI Unit,
> Social and Human Sciences Sector, UNESCO

> **We are making the required investments and look forward to progressive regulatory environments to support in expanding connectivity and ensuring that everyone can benefit from AI technologies."**
>
> Stephen Chege, Chief Regulatory and
> External Affairs Officer at Vodacom Group

APPENDIX

GLOSSARY

Generative AI / Gen AI
See *Gen AI 101* at right

Large Language Model (LLM)
LLMs are a subset of Generative AI models that are trained on vast amounts of textual data to understand, generate, and recreate human language. These models are designed to perform a variety of tasks such as translation, summarization, and analysis. Some notable examples of LLMs in the private sector include OpenAI's GPT-4, Google's PaLM 2, and Anthropic's Claude.

Sustainable Development Goals (SDGs)
The SDGs are a collection of 17 global goals approved by the United Nations General Assembly in 2015 for the year 2030. They cover a broad range of social, environmental, and economic development issues including poverty, inequality, climate change, environmental protection, peace, and justice.

Learn more about the SDGs here:
https://sdgs.un.org/goals

Training
Training is the process of tuning a model to identify patterns and produce desired outputs. Training Gen AI involves optimizing the model's parameters using a large dataset to enable it to produce new data samples. This process adjusts the model's internal weights and may be done on a regular schedule e.g. monthly.

Inference
Inference describes the process of using a trained machine learning model to make predictions or generate outputs based on provided data inputs. This phase occurs after the model has been trained and involves applying the model to specific queries or problems.

Confabulation
Confabulation refers to the phenomenon in which a model generates content that may be plausible but is incorrect or not based on the input data. For instance, a model might attribute a quote to a public figure who never said it.

Hallucination
See Confabulation. NIST notes that the term hallucination "can anthropomorphize Gen AI, which itself is a risk related to Gen AI systems as it can inappropriately attribute human characteristics to non-human entities".[16] As a result, confabulation is preferred.

Data commons
A data commons is a central repository where data is shared and managed collaboratively. It allows multiple organizations and stakeholders to access, contribute to, and utilize data resources for mutual benefit. The goal of these repositories is to improve access to data, increase interoperability, promote transparency, and foster innovation among all parties involved.

Deepfake
Realistic media (especially audio or video) portraying events that never happened.

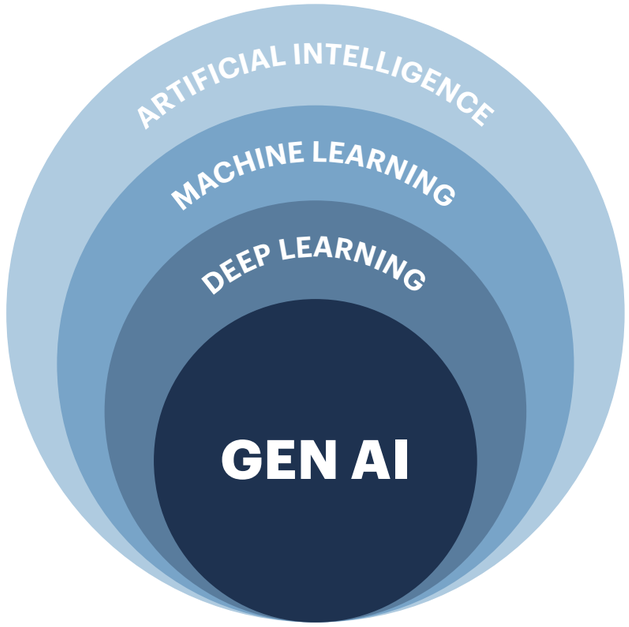
Greenwashing
Greenwashing is the practice of making misleading or inaccurate claims about the environmental benefits of a product, service, or operational practice. It may result in a false impression of sustainability or corporate responsibility in order to attract consumers or publicity that prioritizes eco-friendly options.

GEN AI 101

Generative AI (Gen AI) refers to algorithms that can generate novel content including text, images, and audio, based on data they have been trained on. These models can create human-like text or realistic images by finding and learning patterns in large datasets.

Today's Gen AI breakthroughs build on years of research in AI and related fields, applying techniques like natural language processing (NLP), machine learning (ML), and neural networks alongside advances in processing power and big data to create conversational responses and human-like content. Think of it as a creative assistant that can produce original outputs based on the information it accesses and a prompt that a user inputs. Large Language Models (LLMs), a type of Gen AI model trained on large text datasets, can interpret and generate text that feels human-generated. While LLMs are some of the most popular models, Gen AI models can be trained to produce anything from images to protein structures.

Gen AI lowers the barrier to entry for complex analytics and AI tools by allowing users to interact with natural language. This, in turn, offers significant efficiency and capability benefits to the private sector across applications including content creation, customer service, and even research, among others.



GEN AI
A branch of AI focused on creating new content — such as text, images, and music — that resembles human-generated work

DEEP LEARNING
A specialized subset of machine learning that uses layered neural networks

MACHINE LEARNING
Training algorithms to learn from and make decisions on data

ARTIFICIAL INTELLIGENCE
Field of computer science that enables machines to perform tasks that simulate elements of human-like intelligence

Figure 7: Sub-Fields of AI

ADDITIONAL RESOURCES

UN SYSTEMS RESOURCES

- UN Sustainable Development Goals
- The Ten Principles of the UN Global Compact
- UN Global Compact Forward Faster Action Areas
- UN Global Compact Management Model
- UN Guiding Principles for Business and Human Rights
- UN Convention against Corruption
- The Global Digital Compact
- UN Interim Report: Governing AI for Humanity
- UNESCO Recommendation on the Ethics of AI
- UNESCO Business Council for Ethics of AI
- UN Data Commons for the SDGs
- ITU AI Governance Day – From Principles to Implementation 2024 report
- UN System White Paper on AI Governance
- UN Office of Secretary-General's Envoy on Technology and UN Development Programme Digital Public Infrastructure Safeguards
- UN Global Compact and Pacific Institute CEO Water Mandate
- UN Innovation Network
- Developing Global Guidance for Child Rights Impact Assessments in Relation to the Digital Environment

OTHER RESOURCES

- OECD Responsible Business Conduct
- ILO 1998 Declaration on Fundamental Principles and Rights at Work and its Follow-up
- The Paris Agreement
- Broadening the Gains from Generative AI: The Role of Fiscal Policies
- Reinvention in the age of generative AI
- Green Software Foundation
- RELX Group SDG Resource Centre
- NIST AI Risk Management Framework
- Common Gen AI Tools:
  - GPT-4/4o
  - Gemini
  - Copilot
  - Claude
  - Midjourney
  - Mistral

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ABOUT THE UNITED NATIONS GLOBAL COMPACT

As a special initiative of the United Nations Secretary-General, the UN Global Compact is a call to companies worldwide to align their operations and strategies with Ten Principles in the areas of human rights, labour, the environment and anti-corruption. Our ambition is to accelerate and scale the global collective impact of business by upholding the Ten Principles and delivering the Sustainable Development Goals through accountable companies and ecosystems that enable change. With more than 20,000 participating companies, five Regional Hubs, 62 Global Compact Country Networks covering 77 countries and 14 Country Managers establishing Networks in 20 other countries, the UN Global Compact is the world's largest corporate sustainability initiative — one Global Compact uniting business for a better world. For more information, follow @globalcompact on social media and visit our website at unglobalcompact.org.

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ABOUT THIS STUDY

This report, a collaborative effort between the UN Global Compact and Accenture, aims to provide an understanding of Gen AI technology and provide recommendations for deploying this technology to advance the Sustainable Development Goals (SDGs). The study provides a comprehensive review of how the private sector is currently utilizing Gen AI to drive sustainable development highlighting key use cases, risks, and practical recommendations.

Our approach integrates learnings from primary interviews with private sector leaders and Accenture's experience with Gen AI and Sustainability, complemented by secondary research. We interviewed specialists in sustainability and responsible AI from a global, cross-industry pool of companies to identify provoking, practical, and relevant insights for private sector leaders. Our analysis focuses on identifying and evaluating Sustainable Development-related Gen AI use cases, supported by case studies where possible. Additionally, major risks and ethical considerations for adopting Gen AI are explained, and implementation-focused tear sheets are included to guide companies through deployment for sustainable development.

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